

Chemical Analysis Report

CEN-DIST-2018-06-05-01

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

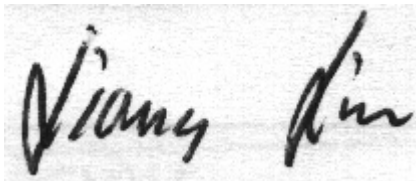
Event Description: **Little Wekiva River + HA + D&B**
Request ID: **RQ-2018-06-04-56**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 26-JUN-2018 15:41

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored 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: LITTLE WEKIWA RIVER @ 75M NW OF PALM SPRING

Collection Date/Time: 06/04/2018 10:53

Field ID: G2CE0140

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996956	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P346428	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P346586	
		Sulfate	9.5		mg SO4/L	P346588	
	SM 2120 B	Color (true)	42		PCU	P346412	
	SM 2320 B-97	Total Alkalinity	82		mg CaCO3/L	P346614	
	SM 2540 C-97	TDS	112	A	mg/L	P346794	
	SM 2540 D-97	TSS	6	IA	mg/L	P346733	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P346618	
1996957	EPA 350.1 Rev. 2.0	Ammonia-N	0.046		mg N/L	P346800	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P347042	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P346507	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P346657	
	SM 5310 B-00	Organic Carbon	8.0		mg C/L	P346677	
1996958	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.054		mg P/L	P346405	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high 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: LITTLE WEKIWA RIVER @ 75M NW OF PALM SPRING

Collection Date/Time: 06/04/2018 10:55

Field ID: G2CE0140_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996959	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P346428	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P346586	
		Sulfate	9.3		mg SO4/L	P346588	
	SM 2120 B	Color (true)	41		PCU	P346412	
	SM 2320 B-97	Total Alkalinity	79	A	mg CaCO3/L	P346614	
	SM 2540 C-97	TDS	119		mg/L	P346794	
	SM 2540 D-97	TSS	6	I	mg/L	P346733	
	SM 4500 F-C-97	Fluoride	0.099	I	mg F/L	P346618	
1996961	EPA 350.1 Rev. 2.0	Ammonia-N	0.047		mg N/L	P346800	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P347042	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P346507	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P346952	
	SM 5310 B-00	Organic Carbon	7.9		mg C/L	P346677	
1996963	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.055		mg P/L	P346405	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high 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: WASHROOM

Collection Date/Time: 06/04/2018 11:05

Field ID: BLANK_06042018

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996960	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P346429	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P346586	
		Sulfate	0.20	U	mg SO4/L	P346588	
	SM 2120 B	Color (true)	2.5	U	PCU	P346413	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P346614	
	SM 2540 C-97	TDS	15	U	mg/L	P346790	
	SM 2540 D-97	TSS	2	U	mg/L	P346729	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P346618	
1996962	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P346800	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P347042	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P346507	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P346657	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P346677	
1996964	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P346406	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high 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: P346428

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P346429

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346586

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346588

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346800

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347042

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346507

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346657

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346952

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 dissolved
Batch ID: P346405

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346406

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

Reference Method: SM 2120 B
Batch ID: P346412

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P346413

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P346614

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

Reference Method: SM 2540 C-97
Batch ID: P346790

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P346794

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P346729

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P346733

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P346618

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P346677

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: P346586

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346588

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346800

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347042

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346507

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346657

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346952

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346405

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346406

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P346614

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P346618

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.0		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P346677

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346586

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996910	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346588

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996910	Sulfate	101		P	90 - 110
1996969	Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346800

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996932	Ammonia-N	101	99.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996957	Kjeldahl Nitrogen	92.8	96.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346507

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996932	NO2NO3-N	98.8	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346657

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1997096	Total-P	104	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346952

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1998835	Total-P	103	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346405

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996936	O-Phosphate-P	99.1	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346406

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1997102	O-Phosphate-P	97.3	98.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P346618

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996959	Fluoride	94.9	95.4	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P346677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996913	Organic Carbon	101		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P346428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996926	Turbidity	0.394	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P346429

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996969	Turbidity	2.02	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996910	Chloride	0.538	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996910	Sulfate	1.25	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346800

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996932	Ammonia-N	1.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996957	Kjeldahl Nitrogen	2.05	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346507

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996932	NO2NO3-N	1.53	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346657

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1997096	Total-P	2.83	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346952

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1998835	Total-P	3.23	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996936	O-Phosphate-P	0.791	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346406

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1997102	O-Phosphate-P	1.31	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P346412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996927	Color (true)	0.166	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P346413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996970	Color (true)	0.149	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P346614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996959	Total Alkalinity	0.289	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P346790

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996562	TDS	3.31	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P346794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996956	TDS	1.79	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P346618

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996959	Fluoride	0.479	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P346677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996913	Organic Carbon	0.397	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: A84339

Included Lab Sample IDs: 1996956, 1996959, 1996960

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	99.9	P/P	90 - 110
Sulfate	101	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A84357

Included Lab Sample IDs: 1996958, 1996963, 1996964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	98.0	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A84360

Included Lab Sample IDs: 1996956, 1996959, 1996960

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	100	P/P	90 - 115
Color (true)	99.7	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A84364

Included Lab Sample IDs: 1996956, 1996959, 1996960

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	98.5	P/P	95 - 105
Turbidity	99.0	100	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84398

Included Lab Sample IDs: 1996957, 1996961, 1996962

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

Reference Method: SM 2320 B-97

Run ID: A84458

Included Lab Sample IDs: 1996956, 1996959, 1996960

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

Reference Method: SM 4500 F-C-97

Run ID: A84458

Included Lab Sample IDs: 1996956, 1996959, 1996960

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	98.6	P/P	90 - 110
Fluoride	98.6	97.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A84491

Included Lab Sample IDs: 1996957, 1996961, 1996962

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84521

Included Lab Sample IDs: 1996957

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A84534

Included Lab Sample IDs: 1996957, 1996961, 1996962

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 365.1 Rev. 2.0

Run ID: A84553

Included Lab Sample IDs: 1996962

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84677

Included Lab Sample IDs: 1996961

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A84735

Included Lab Sample IDs: 1996957, 1996961, 1996962

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	102	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	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				0.394	
	Turbidity				2.02	
EPA 300.0 Rev. 2.1	Chloride	104	101		0.538	
	Sulfate	104	101	104	1.25	
EPA 350.1 Rev. 2.0	Ammonia-N	101	101	99.7		1.02
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.0	92.8	96.0		2.05
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	98.8	101		1.53
EPA 365.1 Rev. 2.0	Total-P	101	104	107		2.83
	Total-P	96.1	103	98.8		3.23
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	99.1	100		0.791
	O-Phosphate-P	99.0	97.3	98.8		1.31
SM 2120 B	Color (true)				0.166	
	Color (true)				0.149	
SM 2320 B-97	Total Alkalinity	102			0.289	
SM 2540 C-97	TDS				3.31	
	TDS				1.79	
SM 4500 F-C-97	Fluoride	96.0	94.9	95.4		0.479
SM 5310 B-00	Organic Carbon	98.8	101			0.397

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1996956, 1996959, 1996960
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1996956, 1996959, 1996960
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1996956, 1996959, 1996960
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1996957, 1996961, 1996962
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1996957, 1996961, 1996962
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1996957, 1996961, 1996962
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1996957, 1996961, 1996962
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1996958, 1996963, 1996964
SM 2120 B / E31780	True Color measured at 450 nm	1996956, 1996959, 1996960
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1996956, 1996959, 1996960
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1996956, 1996959, 1996960
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	1996956, 1996959, 1996960
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1996956, 1996959, 1996960
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1996957, 1996961, 1996962

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	06/05/2018			06/05/2018 17:06	William L. Brown IV	1996956, 1996959, 1996960
EPA 300.0 Rev. 2.1	06/05/2018			06/06/2018 15:25	Lipi Saha	1996956
	06/05/2018			06/06/2018 15:37	Lipi Saha	1996959
	06/05/2018			06/06/2018 15:49	Lipi Saha	1996960
EPA 350.1 Rev. 2.0	06/05/2018			06/12/2018 09:13	Ping Hua	1996962
	06/05/2018			06/12/2018 09:23	Ping Hua	1996957
	06/05/2018			06/12/2018 09:25	Ping Hua	1996961
EPA 351.2 Rev. 2.0	06/05/2018	06/18/2018 15:30	Adrian Shelby	06/20/2018 12:09	Joseph Suarez	1996957
	06/05/2018	06/18/2018 15:30	Adrian Shelby	06/20/2018 12:14	Joseph Suarez	1996961
	06/05/2018	06/18/2018 15:30	Adrian Shelby	06/20/2018 12:16	Joseph Suarez	1996962
EPA 353.2 Rev. 2.0	06/05/2018			06/06/2018 15:30	Lauren Bottorf	1996962
	06/05/2018			06/06/2018 15:32	Lauren Bottorf	1996957
	06/05/2018			06/06/2018 15:34	Lauren Bottorf	1996961
EPA 365.1 Rev. 2.0	06/05/2018	06/11/2018 12:30	Adrian Shelby	06/12/2018 11:48	Beverly Y. Sanders	1996957
	06/05/2018	06/11/2018 12:30	Adrian Shelby	06/13/2018 12:34	Beverly Y. Sanders	1996962
	06/05/2018	06/15/2018 11:35	Sima Feizi	06/19/2018 11:56	Beverly Y. Sanders	1996961
EPA 365.1 Rev. 2.0 dissolved	06/05/2018			06/05/2018 14:49	Megan Treadwell	1996958
	06/05/2018			06/05/2018 14:50	Megan Treadwell	1996963
	06/05/2018			06/05/2018 14:51	Megan Treadwell	1996964
SM 2120 B	06/05/2018			06/05/2018 14:40	Tanya Welborn	1996956, 1996959
	06/05/2018			06/05/2018 14:44	Tanya Welborn	1996960
SM 2320 B-97	06/05/2018			06/07/2018 06:35	Dale L. Simmons	1996959
	06/05/2018			06/07/2018 08:58	Dale L. Simmons	1996956
	06/05/2018			06/07/2018 09:10	Dale L. Simmons	1996960
SM 2540 C-97	06/05/2018			06/06/2018 15:03	Yijie Li	1996956, 1996959, 1996960
SM 2540 D-97	06/05/2018			06/06/2018 15:03	Yijie Li	1996956, 1996959, 1996960
SM 4500 F-C-97	06/05/2018			06/07/2018 06:27	Dale L. Simmons	1996959
	06/05/2018			06/07/2018 08:58	Dale L. Simmons	1996956
	06/05/2018			06/07/2018 09:10	Dale L. Simmons	1996960
SM 5310 B-00	06/05/2018			06/09/2018 05:13	Megan Treadwell	1996957
	06/05/2018			06/09/2018 05:25	Megan Treadwell	1996961
	06/05/2018			06/09/2018 05:38	Megan Treadwell	1996962