

Chemical Analysis Report

CEN-DIST-2017-11-29-01

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

Event Description: **Reedy Creek bw Lk Rus + D&B**
Request ID: **RQ-2017-11-27-65**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

For additional information please contact
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Certified by: Colin Wright, Program Administrator

Date Certified: 18-DEC-2017 11:24

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: Reedy Creek @ 200m US of Confluence w/Dead River **Collection Date/Time: 11/28/2017 10:45**

Field ID: G4CE0145

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1949022	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P336079	
	EPA 300.0 Rev. 2.1	Chloride	24		mg Cl/L	P336266	
		Sulfate	0.66		mg SO4/L	P336270	
	SM 2120 B	Color (true)	500		PCU	P336073	
	SM 2320 B-97	Total Alkalinity	31		mg CaCO3/L	P336464	
	SM 2540 C-97	TDS	189		mg/L	P336392	
	SM 2540 D-97	TSS	2	I	mg/L	P336366	
	SM 4500 F-C-97	Fluoride	0.084	I	mg F/L	P336468	
1949023	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P336540	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P336562	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.037		mg N/L	P336164	
	EPA 365.1 Rev. 2.0	Total-P	0.060		mg P/L	P336310	
	SM 5310 B-00	Organic Carbon	42		mg C/L	P336200	
1949024	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.038		mg P/L	P336055	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Reedy Creek @ 200m US of Confluence w/Dead River Duplicate **Collection Date/Time: 11/28/2017 10:47**

Field ID: G4CE0145_D

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1949025	EPA 180.1 Rev. 2.0	Turbidity	0.70		NTU	P336079	
	EPA 300.0 Rev. 2.1	Chloride	24		mg Cl/L	P336266	
		Sulfate	0.68		mg SO4/L	P336270	
	SM 2120 B	Color (true)	510		PCU	P336073	
	SM 2320 B-97	Total Alkalinity	31		mg CaCO3/L	P336464	
	SM 2540 C-97	TDS	200		mg/L	P336392	
	SM 2540 D-97	TSS	2	I	mg/L	P336366	
	SM 4500 F-C-97	Fluoride	0.084	I	mg F/L	P336468	
1949027	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P336540	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P336354	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P336164	
	EPA 365.1 Rev. 2.0	Total-P	0.057		mg P/L	P336310	
	SM 5310 B-00	Organic Carbon	42		mg C/L	P336200	
1949029	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.038		mg P/L	P336055	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Field Blank

Collection Date/Time: 11/28/2017 12:20

Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1949026	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P336079	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P336266	
		Sulfate	0.20	U	mg SO4/L	P336270	
		Color (true)	2.5	U	PCU	P336073	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P336464	
	SM 2540 C-97	TDS	15	U	mg/L	P336389	
	SM 2540 D-97	TSS	2	U	mg/L	P336362	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P336468	
1949028	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P336540	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P336354	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P336166	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P336310	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P336261	
1949030	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P336055	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P336079

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P336266

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P336270

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P336540

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P336354

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336562

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336164

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336166

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P336310

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P336055

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

Reference Method: SM 2120 B
Batch ID: P336073

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P336464

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

Reference Method: SM 2540 C-97
Batch ID: P336389

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P336392

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
 Batch ID: P336362

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P336366

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P336468

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P336200

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

Reference Method: SM 5310 B-00
 Batch ID: P336261

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: P336266

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	94.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P336270

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P336540

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: P336354

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: P336354

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336562

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336164

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: P336166

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P336310

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: P336055

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: P336464

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

Reference Method: SM 4500 F-C-97
Batch ID: P336468

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P336200

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.8		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P336261

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.9		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P336266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949216	Chloride	95.0		P	90 - 110
1949218	Chloride	95.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P336270

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949216	Sulfate	96.2		P	90 - 110
1949218	Sulfate	95.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P336354

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949101	Kjeldahl Nitrogen	99.4	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P336562

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949621	Kjeldahl Nitrogen	95.6	97.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P336164

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949013	NO2NO3-N	103	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P336166

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949036	NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P336310

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949036	Total-P	105	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P336055

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949103	O-Phosphate-P	99.7	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P336468

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1948737	Fluoride	97.4	97.4	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P336200

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1948670	Organic Carbon	96.0	97.0	P/P	85 - 115

Reference Method: SM 5310 B-00
 Batch ID: P336261

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1948993	Organic Carbon	95.4	95.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P336079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949012	Turbidity	5.38	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P336266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949216	Chloride	0.664	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P336270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949216	Sulfate	0.750	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P336540

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949036	Ammonia-N	5.27	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949101	Kjeldahl Nitrogen	5.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949621	Kjeldahl Nitrogen	1.14	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336164

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949013	NO2NO3-N	0.466	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949036	NO2NO3-N	1.10	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P336310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949036	Total-P	4.27	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P336055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949103	O-Phosphate-P	0.899	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P336073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949012	Color (true)	0.759	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P336464

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948737	Total Alkalinity	0.381	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P336389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948451	TDS	2.61	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P336392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949047	TDS	5.36	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P336468

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948737	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P336200

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948670	Organic Carbon	0.572	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P336261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948993	Organic Carbon	0.315	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A80577
Included Lab Sample IDs: 1949024, 1949029, 1949030

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

Reference Method: SM 2120 B
Run ID: A80591
Included Lab Sample IDs: 1949022, 1949025, 1949026

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A80593

Included Lab Sample IDs: 1949022, 1949025, 1949026

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A80623

Included Lab Sample IDs: 1949023, 1949027, 1949028

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A80632

Included Lab Sample IDs: 1949022, 1949025, 1949026

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	99.6	P/P	90 - 110
Sulfate	99.9	99.3	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A80635

Included Lab Sample IDs: 1949023, 1949027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.0	98.2	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A80659

Included Lab Sample IDs: 1949028

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80731

Included Lab Sample IDs: 1949023, 1949027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.4	98.2	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A80732

Included Lab Sample IDs: 1949022, 1949025, 1949026

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: A80732

Included Lab Sample IDs: 1949022, 1949025, 1949026

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: A80732

Included Lab Sample IDs: 1949022, 1949025, 1949026

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80744

Included Lab Sample IDs: 1949027, 1949028

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A80749

Included Lab Sample IDs: 1949023, 1949027, 1949028

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.2	99.2	P/P	90 - 110
Ammonia-N	99.2	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80764

Included Lab Sample IDs: 1949028

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80797

Included Lab Sample IDs: 1949023

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.8	99.0	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				5.38	
EPA 300.0 Rev. 2.1	Chloride	94.2	95.0 95.3		0.664	
	Sulfate	94.5	96.2 95.4		0.750	
EPA 350.1 Rev. 2.0	Ammonia-N	101				5.27
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	99.4 107			5.02
	Kjeldahl Nitrogen	97.2	95.6 97.3			1.14
EPA 353.2 Rev. 2.0	NO2NO3-N	104	103 104			0.466
	NO2NO3-N	104	104 103			1.10
EPA 365.1 Rev. 2.0	Total-P	103	105 101			4.27
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	99.7 101			0.899

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
SM 2120 B	Color (true)					0.759	
SM 2320 B-97	Total Alkalinity	103				0.381	
SM 2540 C-97	TDS					2.61	
	TDS					5.36	
SM 4500 F-C-97	Fluoride	96.3	97.4	97.4			0.0
SM 5310 B-00	Organic Carbon	99.8	96.0	97.0			0.572
	Organic Carbon	97.9	95.4	95.2			0.315

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1949022, 1949025, 1949026
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1949022, 1949025, 1949026
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1949022, 1949025, 1949026
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1949023, 1949027, 1949028
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1949023, 1949027, 1949028
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1949023, 1949027, 1949028
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1949023, 1949027, 1949028
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1949024, 1949029, 1949030
SM 2120 B / E31780	True Color measured at 450 nm	1949022, 1949025, 1949026
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1949022, 1949025, 1949026
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1949022, 1949025, 1949026
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1949022, 1949025, 1949026
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1949022, 1949025, 1949026
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1949023, 1949027, 1949028

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	11/29/2017			11/29/2017 16:26	DeAsia Armster	1949022, 1949025, 1949026
EPA 300.0 Rev. 2.1	11/29/2017			12/02/2017	Julia Storbeck	1949022, 1949025, 1949026
EPA 350.1 Rev. 2.0	11/29/2017			12/06/2017	Sofia Elnemr	1949023, 1949027, 1949028
EPA 351.2 Rev. 2.0	11/29/2017	12/05/2017	Adrian Shelby	12/06/2017	Joseph Suarez	1949027, 1949028
	11/29/2017	12/07/2017	Adrian Shelby	12/08/2017	Joseph Suarez	1949023
EPA 353.2 Rev. 2.0	11/29/2017			12/01/2017	Beverly Y. Sanders	1949023, 1949027, 1949028
EPA 365.1 Rev. 2.0	11/29/2017	12/04/2017	Sima Feizi	12/05/2017	Beverly Y. Sanders	1949023, 1949027
	11/29/2017	12/04/2017	Sima Feizi	12/07/2017	Lipi Saha	1949028
EPA 365.1 Rev. 2.0 dissolved	11/29/2017			11/29/2017 12:01	Megan Treadwell	1949024
	11/29/2017			11/29/2017 12:02	Megan Treadwell	1949029
	11/29/2017			11/29/2017 12:03	Megan Treadwell	1949030
SM 2120 B	11/29/2017			11/29/2017 14:55	Tanya Welborn	1949026
	11/29/2017			11/29/2017 15:07	Tanya Welborn	1949022
	11/29/2017			11/29/2017 15:08	Tanya Welborn	1949025
SM 2320 B-97	11/29/2017			12/06/2017	Dale L. Simmons	1949022, 1949025, 1949026
SM 2540 C-97	11/29/2017			12/01/2017	Yijie Li	1949022, 1949025, 1949026
SM 2540 D-97	11/29/2017			12/01/2017	Yijie Li	1949022, 1949025, 1949026
SM 4500 F-C-97	11/29/2017			12/06/2017	Dale L. Simmons	1949022, 1949025, 1949026
SM 5310 B-00	11/29/2017			12/01/2017	Ping Hua	1949023, 1949027, 1949028