

Chemical Analysis Report

CEN-DIST-2017-06-21-01

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

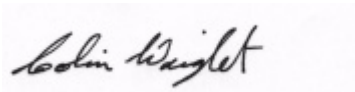
Event Description: **Concrod / Ellen / McCoy + D&B**
Request ID: **RQ-2017-06-12-45**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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3319 Maguire Blvd., Suite 232
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Certified by: Colin Wright, Program Administrator

Date Certified: 11-JUL-2017 09:44

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: Lake Ellen @ Center

Collection Date/Time: 06/20/2017 11:15

Field ID: G2CE0060

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1907606	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P327254	
	EPA 300.0 Rev. 2.1	Chloride	15	A	mg Cl/L	P327406	
		Sulfate	14	A	mg SO4/L	P327409	
	SM 2120 B	Color (true)	24		PCU	P327257	
	SM 2320 B-97	Total Alkalinity	7.7	A	mg CaCO3/L	P327452	
	SM 2540 C-97	TDS	66		mg/L	P327624	
	SM 2540 D-97	TSS	2	I	mg/L	P327826	
	SM 4500 F-C-97	Fluoride	0.059	I	mg F/L	P327456	
1907610	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P327289	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P327278	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327303	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P327316	
	SM 5310 B-00	Organic Carbon	5.7		mg C/L	P327458	
1907614	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327263	

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 Concord @ Center

Collection Date/Time: 06/20/2017 11:47

Field ID: G2CE0059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1907607	EPA 180.1 Rev. 2.0	Turbidity	6.5		NTU	P327254	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P327406	
		Sulfate	5.7		mg SO4/L	P327409	
	SM 2120 B	Color (true)	15		PCU	P327257	
	SM 2320 B-97	Total Alkalinity	70		mg CaCO3/L	P327452	
	SM 2540 C-97	TDS	111		mg/L	P327624	
	SM 2540 D-97	TSS	8	I	mg/L	P327826	
	SM 4500 F-C-97	Fluoride	0.065	I	mg F/L	P327456	
1907611	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P327289	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P327278	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327303	
	EPA 365.1 Rev. 2.0	Total-P	0.051		mg P/L	P327316	
	SM 5310 B-00	Organic Carbon	5.1		mg C/L	P327458	
1907615	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327263	

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 McCoy @ Center of Southern Lobe

Collection Date/Time: 06/20/2017 12:57

Field ID: G2CE0098

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1907608	EPA 180.1 Rev. 2.0	Turbidity	32		NTU	P327254	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P327406	
		Sulfate	58		mg SO4/L	P327409	

Field ID: G2CE0098

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1907608	SM 2120 B	Color (true)	53	A	PCU	P327261	
	SM 2320 B-97	Total Alkalinity	12		mg CaCO3/L	P327452	
	SM 2540 C-97	TDS	169		mg/L	P327624	
	SM 2540 D-97	TSS	19		mg/L	P327826	
	SM 4500 F-C-97	Fluoride	0.052	I	mg F/L	P327456	
1907612	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P327289	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.5		mg N/L	P327533	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327303	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P327316	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P327458	
1907616	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327263	

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 McCoy @ Center of Southern Lobe

Collection Date/Time: 06/20/2017 12:57

Field ID: G2CE0098_D

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1907609	EPA 180.1 Rev. 2.0	Turbidity	31		NTU	P327254	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P327406	
		Sulfate	56		mg SO4/L	P327409	
		Color (true)	53		PCU	P327261	
	SM 2320 B-97	Total Alkalinity	12		mg CaCO3/L	P327452	
	SM 2540 C-97	TDS	177		mg/L	P327625	
	SM 2540 D-97	TSS	21		mg/L	P327827	
1907613	SM 4500 F-C-97	Fluoride	0.053	I	mg F/L	P327456	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P327289	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.5		mg N/L	P327533	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327303	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P327316	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P327458	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P327263	

Sample Location: Field Blank

Collection Date/Time: 06/20/2017 13:14

Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1907603	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P327254	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P327406	
		Sulfate	0.20	U	mg SO4/L	P327409	
		Color (true)	2.5	U	PCU	P327257	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P327452	
	SM 2540 C-97	TDS	15	U	mg/L	P327624	
	SM 2540 D-97	TSS	2	U	mg/L	P327826	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P327456	

Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1907604	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P327289	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P327533	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327303	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P327316	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P327458	
1907605	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327263	

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: P327254

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P327406

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P327409

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P327289

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P327278

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P327533

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P327303

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327316

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327263

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

Reference Method: SM 2120 B
Batch ID: P327257

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P327261

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P327452

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

Reference Method: SM 2540 C-97
Batch ID: P327624

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P327625

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P327826

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P327827

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P327456

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P327458

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: P327406

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327409

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327289

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327278

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327533

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: P327303

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327316

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327316

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327263

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

Reference Method: SM 2320 B-97
Batch ID: P327452

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

Reference Method: SM 4500 F-C-97
Batch ID: P327456

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P327458

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327406

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907606	Chloride	93.4		P	90 - 110
1907786	Chloride	99.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327409

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907606	Sulfate	91.3		P	90 - 110
1907786	Sulfate	98.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327289

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907598	Ammonia-N	102	99.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907691	Kjeldahl Nitrogen	94.3	95.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327533

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1906968	Kjeldahl Nitrogen	102	97.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327303

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907598	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327316

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907644	Total-P	103	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907614	O-Phosphate-P	94.1	96.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P327456

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907606	Fluoride	98.9	101	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P327458

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907492	Organic Carbon	92.2	94.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P327254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907567	Turbidity	7.00	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327406

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907606	Chloride	1.59	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907606	Sulfate	2.48	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907598	Ammonia-N	1.45	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907691	Kjeldahl Nitrogen	0.821	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1906968	Kjeldahl Nitrogen	2.45	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907598	NO2NO3-N	0.763	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907644	Total-P	3.49	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907614	O-Phosphate-P	2.41	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P327257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907566	Color (true)	0.555	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P327261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907608	Color (true)	0.261	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P327452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907606	Total Alkalinity	3.25	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P327624

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907567	TDS	3.19	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P327625

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907643	TDS	5.11	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P327827

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907643	TSS	6.06	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P327456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907606	Fluoride	1.49	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P327458

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907492	Organic Carbon	1.28	Spike	P	0 - 20

Quality Assurance Report Precision

* 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: A77183

Included Lab Sample IDs: 1907603, 1907606, 1907607, 1907608, 1907609

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	100	P/P	90 - 110
Chloride	95.1	100	P/P	90 - 110
Sulfate	100	106	P/P	90 - 110
Sulfate	95.9	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A77249

Included Lab Sample IDs: 1907603, 1907606, 1907607, 1907608, 1907609

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

Reference Method: SM 2120 B

Run ID: A77251

Included Lab Sample IDs: 1907603, 1907606, 1907607, 1907608, 1907609

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	98.8	P/P	85 - 115
Color (true)	95.2	98.5	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A77252

Included Lab Sample IDs: 1907605, 1907614, 1907615, 1907616, 1907617

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	102	P/P	90 - 110
O-Phosphate-P	102	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A77259

Included Lab Sample IDs: 1907604, 1907610, 1907611, 1907612, 1907613

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77262

Included Lab Sample IDs: 1907604, 1907610, 1907611, 1907612, 1907613

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77299

Included Lab Sample IDs: 1907611, 1907612, 1907613

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77308

Included Lab Sample IDs: 1907604, 1907610

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

Reference Method: SM 2320 B-97

Run ID: A77329

Included Lab Sample IDs: 1907603, 1907606, 1907607, 1907608, 1907609

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	105	P/P	90 - 110
Total Alkalinity	103	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A77329

Included Lab Sample IDs: 1907603, 1907606, 1907607, 1907608, 1907609

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	99.1	P/P	90 - 110
Fluoride	99.1	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A77331

Included Lab Sample IDs: 1907604, 1907610, 1907611, 1907612, 1907613

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.6	94.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77342

Included Lab Sample IDs: 1907610, 1907611

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.8	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77467

Included Lab Sample IDs: 1907604, 1907612, 1907613

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	105	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	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				7.00	
EPA 300.0 Rev. 2.1	Chloride	103	93.4 99.7		1.59	
	Sulfate	102	91.3 98.6		2.48	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	102 99.6			1.45
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	94.3 95.7			0.821
	Kjeldahl Nitrogen	103	102 97.9			2.45
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	100 101			0.763
EPA 365.1 Rev. 2.0	Total-P	102	103 98.4			3.49
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.7	94.1 96.4			2.41
SM 2120 B	Color (true)				0.555	
	Color (true)				0.261	
SM 2320 B-97	Total Alkalinity	104			3.25	
SM 2540 C-97	TDS				3.19	
	TDS				5.11	
SM 2540 D-97	TSS				6.06	
SM 4500 F-C-97	Fluoride	97.1	98.9 101			1.49
SM 5310 B-00	Organic Carbon	93.8	92.2 94.1			1.28

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1907603, 1907606, 1907607, 1907608, 1907609
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1907603, 1907606, 1907607, 1907608, 1907609
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1907603, 1907606, 1907607, 1907608, 1907609
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1907604, 1907610, 1907611, 1907612, 1907613
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1907604, 1907610, 1907611, 1907612, 1907613
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1907604, 1907610, 1907611, 1907612, 1907613
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1907604, 1907610, 1907611, 1907612, 1907613
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1907605, 1907614, 1907615, 1907616, 1907617
SM 2120 B / E31780	True Color measured at 450 nm	1907603, 1907606, 1907607, 1907608, 1907609
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1907603, 1907606, 1907607, 1907608, 1907609
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1907603, 1907606, 1907607, 1907608, 1907609
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1907603, 1907606, 1907607, 1907608, 1907609
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1907603, 1907606, 1907607, 1907608, 1907609
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1907604, 1907610, 1907611, 1907612, 1907613

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	06/21/2017			06/21/2017 15:22	DeAsia Armster	1907603, 1907606, 1907607, 1907608, 1907609
EPA 300.0 Rev. 2.1	06/21/2017			06/22/2017	Julia Storbeck	1907603, 1907606, 1907607, 1907608, 1907609
EPA 350.1 Rev. 2.0	06/21/2017			06/21/2017	Sofia Elnemr	1907604, 1907610, 1907611, 1907612, 1907613
EPA 351.2 Rev. 2.0	06/21/2017	06/22/2017	Adrian Shelby	06/26/2017	Joseph Suarez	1907610, 1907611
	06/21/2017	06/27/2017	Adrian Shelby	06/30/2017	Joseph Suarez	1907604, 1907612, 1907613
EPA 353.2 Rev. 2.0	06/21/2017			06/22/2017	Beverly Y. Sanders	1907604, 1907610, 1907611, 1907612, 1907613
EPA 365.1 Rev. 2.0	06/21/2017	06/22/2017	Adrian Shelby	06/23/2017	Lipi Saha	1907604, 1907610, 1907611, 1907612, 1907613
EPA 365.1 Rev. 2.0 dissolved	06/21/2017			06/21/2017 14:31	Ping Hua	1907614
	06/21/2017			06/21/2017 14:47	Ping Hua	1907605, 1907615
	06/21/2017			06/21/2017 14:48	Ping Hua	1907616
	06/21/2017			06/21/2017 14:49	Ping Hua	1907617
SM 2120 B	06/21/2017			06/21/2017 15:06	Tanya Welborn	1907603
	06/21/2017			06/21/2017 15:07	Tanya Welborn	1907606
	06/21/2017			06/21/2017 15:08	Tanya Welborn	1907607
	06/21/2017			06/21/2017 15:47	Tanya Welborn	1907608
	06/21/2017			06/21/2017 15:48	Tanya Welborn	1907609
SM 2320 B-97	06/21/2017			06/24/2017	Dale L. Simmons	1907603, 1907606, 1907607, 1907608, 1907609
SM 2540 C-97	06/21/2017			06/23/2017	Yijie Li	1907603, 1907606, 1907607, 1907608, 1907609
SM 2540 D-97	06/21/2017			06/23/2017	Yijie Li	1907603, 1907606, 1907607, 1907608, 1907609
SM 4500 F-C-97	06/21/2017			06/24/2017	Dale L. Simmons	1907603, 1907606, 1907607, 1907608, 1907609
SM 5310 B-00	06/21/2017			06/24/2017	Sofia Elnemr	1907604, 1907610, 1907611, 1907612, 1907613