

Chemical Analysis Report

TLH-ROC-2019-11-13-01

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

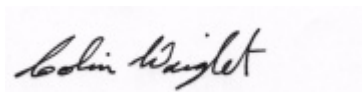
Event Description: **Run 10**
Request ID: **RQ-2019-09-16-26**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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Certified by: Colin Wright, Program Administrator

Date Certified: 03-DEC-2019 13:41

A handwritten signature in black ink, appearing to read "Colin Wright", is shown 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 by the Florida Department of Health Environmental Laboratory Certification Program 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: MULE CREEK @ MOUTH

Collection Date/Time: 11/13/2019 10:30

Field ID: G3TLHR0038

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2135900	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P374250	
	EPA 300.0 Rev. 2.1	Chloride	590		mg Cl/L	P374399	
		Sulfate	81		mg SO4/L	P374402	
	SM 2120 B	Color (true)	21		PCU	P374264	
	SM 2320 B-97	Total Alkalinity	8.7		mg CaCO3/L	P374494	
	SM 2540 C-97	TDS	1.02E+03		mg/L	P374828	
	SM 2540 D-97	TSS	3	I	mg/L	P374818	
	SM 4500 F-C-97	Fluoride	0.054	I	mg F/L	P374498	
2135902	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P374438	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.13	I	mg N/L	P374504	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.033		mg N/L	P374284	
	EPA 365.1 Rev. 2.0	Total-P	0.059		mg P/L	P374706	
	SM 5310 B-00	Organic Carbon	2.9		mg C/L	P374355	
2135904	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P374274	

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: LITTLE SANDY CREEK @ MOUTH

Collection Date/Time: 11/13/2019 10:45

Field ID: G3TLHR0039

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2135901	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P374250	
	EPA 300.0 Rev. 2.1	Chloride	1.7E+03		mg Cl/L	P374399	
		Sulfate	230		mg SO4/L	P374402	
	SM 2120 B	Color (true)	43		PCU	P374264	
	SM 2320 B-97	Total Alkalinity	13		mg CaCO3/L	P374290	
	SM 2540 C-97	TDS	2.96E+03		mg/L	P374865	
	SM 2540 D-97	TSS	3	U	mg/L	P374821	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P374663	
2135903	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P374441	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36	I	mg N/L	P374512	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.62		mg N/L	P374370	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P374707	
	SM 5310 B-00	Organic Carbon	6.2		mg C/L	P374430	
2135905	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P374275	

Ref. Method and Comment:

SM 2540 C-97: The reported result is consistent with the laboratory conductivity, 5490 umhos/cm.

SM 2540 D-97: MDL elevated due to sample being processed according to the field conductivity. The laboratory conductivity is 5490 umhos/cm.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374250

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374399

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374402

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374438

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374441

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374504

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374512

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374284

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374370

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374706

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374707

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374274

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374275

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

Reference Method: SM 2120 B
Batch ID: P374264

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P374290

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

Reference Method: SM 2320 B-97
Batch ID: P374494

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

Reference Method: SM 2540 C-97
Batch ID: P374828

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P374865

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P374818

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P374821

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P374498

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P374663

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P374355

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

Reference Method: SM 5310 B-00
Batch ID: P374430

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: P374399

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374402

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374438

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374441

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: P374504

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	105		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374512

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374284

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374370

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374706

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374707

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374274

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	95.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374275

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

Reference Method: SM 2120 B
Batch ID: P374264

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

Reference Method: SM 2320 B-97
Batch ID: P374290

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.7		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P374494

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P374498

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.6		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P374663

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P374355

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	104		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P374430

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135912	Chloride	97.2		P	90 - 110
2136001	Chloride	97.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374402

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135912	Sulfate	96.8		P	90 - 110
2136001	Sulfate	95.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374438

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135913	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374441

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136143	Ammonia-N	105	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374504

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135577	Kjeldahl Nitrogen	97.2	96.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135920	Kjeldahl Nitrogen	103	114	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374284

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135931	NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374370

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136027	NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374706

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135669	Total-P	100	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135715	Total-P	103	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374274

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135904	O-Phosphate-P	95.0	96.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135905	O-Phosphate-P	95.9	94.0	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P374498

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135668	Fluoride	99.1	99.1	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P374663

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136533	Fluoride	97.9	98.8	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P374355

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135902	Organic Carbon	101	101	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P374430

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135715	Organic Carbon	102	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136269	Turbidity	10.2	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135912	Chloride	2.59	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374402

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135912	Sulfate	0.581	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374438

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135913	Ammonia-N	0.535	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136143	Ammonia-N	1.37	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374504

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135577	Kjeldahl Nitrogen	0.578	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135920	Kjeldahl Nitrogen	8.70	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374284

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135931	NO2NO3-N	0.471	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374370

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136027	NO2NO3-N	0.484	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374706

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135669	Total-P	0.425	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135715	Total-P	1.38	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135904	O-Phosphate-P	1.36	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135905	O-Phosphate-P	2.00	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P374264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135926	Color (true)	2.66	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P374290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135714	Total Alkalinity	0.195	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P374494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135668	Total Alkalinity	0.253	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
 Batch ID: P374828

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135551	TDS	4.47	Sample	P	0 - 10

Reference Method: SM 2540 C-97
 Batch ID: P374865

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136731	TDS	0.359	Sample	P	0 - 10

Reference Method: SM 2540 D-97
 Batch ID: P374821

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135397	TSS	8.00	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P374498

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135668	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
 Batch ID: P374663

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136533	Fluoride	0.473	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P374355

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135902	Organic Carbon	0.434	Spike	P	0 - 20

Reference Method: SM 5310 B-00
 Batch ID: P374430

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135715	Organic Carbon	0.993	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A95743

Included Lab Sample IDs: 2135900, 2135901

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

Reference Method: SM 2120 B

Run ID: A95748

Included Lab Sample IDs: 2135900, 2135901

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95752

Included Lab Sample IDs: 2135902

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A95753

Included Lab Sample IDs: 2135904, 2135905

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	98.9	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A95757

Included Lab Sample IDs: 2135901

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.7	99.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A95765

Included Lab Sample IDs: 2135900, 2135901

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	99.9	P/P	90 - 110
Sulfate	102	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A95788

Included Lab Sample IDs: 2135902

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	105	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95794

Included Lab Sample IDs: 2135903

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A95823
Included Lab Sample IDs: 2135903

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	103	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A95824
Included Lab Sample IDs: 2135902, 2135903

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

Reference Method: SM 2320 B-97
Run ID: A95843
Included Lab Sample IDs: 2135900

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

Reference Method: SM 4500 F-C-97
Run ID: A95843
Included Lab Sample IDs: 2135900

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A95884
Included Lab Sample IDs: 2135902, 2135903

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	108	97.9	P/P	90 - 110
Kjeldahl Nitrogen	97.4	108	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A95901
Included Lab Sample IDs: 2135901

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A95968
Included Lab Sample IDs: 2135902

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A95989
Included Lab Sample IDs: 2135903

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95989

Included Lab Sample IDs: 2135903

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	96.5	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				10.2	
EPA 300.0 Rev. 2.1	Chloride	98.9	97.2	97.5	2.59	
	Sulfate	98.7	96.8	95.2	0.581	
EPA 350.1 Rev. 2.0	Ammonia-N	100	100	101		0.535
	Ammonia-N	101	105	106		1.37
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	97.2	96.1		0.578
	Kjeldahl Nitrogen	97.8	103	114		8.70
EPA 353.2 Rev. 2.0	NO2NO3-N	101	99.0	99.5		0.471
	NO2NO3-N	103	104	103		0.484
EPA 365.1 Rev. 2.0	Total-P	101	100	101		0.425
	Total-P	100	103	105		1.38
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	95.8	95.0	96.3		1.36
	O-Phosphate-P	101	95.9	94.0		2.00
SM 2120 B	Color (true)	101			2.66	
SM 2320 B-97	Total Alkalinity	98.7			0.195	
	Total Alkalinity	100			0.253	
SM 2540 C-97	TDS				4.47	
	TDS				0.359	
SM 2540 D-97	TSS				8.00	
SM 4500 F-C-97	Fluoride	98.6	99.1	99.1		0.0
	Fluoride	95.9	97.9	98.8		0.473
SM 5310 B-00	Organic Carbon	104	101	101		0.434
	Organic Carbon	103	102	101		0.993

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2135900, 2135901
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2135900, 2135901
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2135900, 2135901
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2135902, 2135903
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2135902, 2135903
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2135902, 2135903
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2135902, 2135903
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2135904, 2135905
SM 2120 B / E31780	True Color measured at 450 nm	2135900, 2135901
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2135900, 2135901
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2135900, 2135901
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2135900, 2135901
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2135900, 2135901
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2135902, 2135903

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	11/13/2019			11/14/2019 17:30	Blanca Fach	2135900, 2135901
EPA 300.0 Rev. 2.1	11/13/2019			11/18/2019 16:57	Lipi Saha	2135900
	11/13/2019			11/18/2019 17:09	Lipi Saha	2135901
EPA 350.1 Rev. 2.0	11/13/2019			11/18/2019 12:22	Ping Hua	2135902
	11/13/2019			11/18/2019 14:06	Ping Hua	2135903
EPA 351.2 Rev. 2.0	11/13/2019	11/20/2019 12:20	Sima Feizi	11/21/2019 16:08	Jhamieka S. Greenwood	2135903
	11/13/2019	11/20/2019 12:30	Sima Feizi	11/21/2019 16:36	Jhamieka S. Greenwood	2135902
EPA 353.2 Rev. 2.0	11/13/2019			11/15/2019 08:43	Beverly Y. Sanders	2135902
	11/13/2019			11/18/2019 12:47	Beverly Y. Sanders	2135903
EPA 365.1 Rev. 2.0	11/13/2019	11/22/2019 13:04	Yen Ta	11/26/2019 13:36	Benjamin T. Nordmann	2135902
	11/13/2019	11/22/2019 13:04	Yen Ta	11/26/2019 16:21	Benjamin T. Nordmann	2135903
EPA 365.1 Rev. 2.0 dissolved	11/13/2019			11/14/2019 15:26	Samantha Davila	2135904
	11/13/2019			11/14/2019 15:31	Samantha Davila	2135905
SM 2120 B	11/13/2019			11/14/2019 16:11	Madeline Funaro	2135900
	11/13/2019			11/14/2019 16:12	Madeline Funaro	2135901
SM 2320 B-97	11/13/2019			11/14/2019 19:09	Dale L. Simmons	2135901
	11/13/2019			11/16/2019 05:22	Dale L. Simmons	2135900
SM 2540 C-97	11/13/2019			11/15/2019 15:21	Yijie Li	2135900
	11/13/2019			11/19/2019 15:21	Yijie Li	2135901
SM 2540 D-97	11/13/2019			11/15/2019 15:21	Yijie Li	2135900, 2135901
SM 4500 F-C-97	11/13/2019			11/16/2019 05:22	Dale L. Simmons	2135900
	11/13/2019			11/20/2019 22:20	Dale L. Simmons	2135901
SM 5310 B-00	11/13/2019			11/15/2019 15:05	Lauren Lees	2135902
	11/13/2019			11/19/2019 07:53	Lauren Lees	2135903