

Chemical Analysis Report

NW-DIST-2019-07-17-01

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

Event Description: **Crestview/ Laurel Hill**
Request ID: **RQ-2019-07-15-26**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 02-AUG-2019 12:15

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light-colored 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 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: Deadfall Creek upstream of Old River Rd.

Collection Date/Time: 07/16/2019 13:30

Field ID: G4NW0491

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103785	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P367413	
	EPA 300.0 Rev. 2.1	Chloride	3.3		mg Cl/L	P367541	
		Sulfate	1.2		mg SO4/L	P367543	
	SM 2120 B	Color (true)	25	A	PCU	P367400	
	SM 2320 B-97	Total Alkalinity	1.6	I	mg CaCO3/L	P367932	
	SM 2540 C-97	TDS	15	U	mg/L	P367703	
	SM 2540 D-97	TSS	2	U	mg/L	P367635	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P367935	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P368037	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.14	I	mg N/L	P367478	
2103788	EPA 353.2 Rev. 2.0	NO2NO3-N	0.35		mg N/L	P367602	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P367472	
	SM 5310 B-00	Organic Carbon	2.1		mg C/L	P367670	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P367463	
2103791	SM 2540 D-97	dissolved					

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: Deadfall Creek upstream of Shockley Springs Rd. **Collection Date/Time: 07/16/2019 13:15**

Field ID: G4NW0490

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103786	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P367413	
	EPA 300.0 Rev. 2.1	Chloride	3.0		mg Cl/L	P367541	
		Sulfate	1.8		mg SO4/L	P367543	
	SM 2120 B	Color (true)	22		PCU	P367400	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P367932	
	SM 2540 C-97	TDS	15	U	mg/L	P367703	
	SM 2540 D-97	TSS	2	U	mg/L	P367635	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P367935	
2103789	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P368037	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.10	I	mg N/L	P367479	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P367602	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P367473	
	SM 5310 B-00	Organic Carbon	1.8		mg C/L	P367670	
2103792	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P367463	

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: Horsehead Creek upstream of Steele Mill Creek Rd **Collection Date/Time: 07/16/2019 10:55**

Field ID: G4NW0428

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103794	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P367413	
	EPA 300.0 Rev. 2.1	Chloride	4.7		mg Cl/L	P367541	
		Sulfate	0.46	I	mg SO4/L	P367543	
	SM 2120 B	Color (true)	57		PCU	P367400	
	SM 2320 B-97	Total Alkalinity	7.4		mg CaCO3/L	P367932	
	SM 2540 C-97	TDS	19	I	mg/L	P367703	
	SM 2540 D-97	TSS	5	I	mg/L	P367635	
	SM 4500 F-C-97	Fluoride	0.041	I	mg F/L	P367935	
2103795	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P368037	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28		mg N/L	P367479	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.35		mg N/L	P367602	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P367473	
	SM 5310 B-00	Organic Carbon	3.2		mg C/L	P367670	
2103796	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.032		mg P/L	P367463	

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: Poverty Creek upstream of Poverty Creek Rd Collection Date/Time: 07/16/2019 11:40

Field ID: G4NW0427

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103787	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P367413	
	EPA 300.0 Rev. 2.1	Chloride	2.7		mg Cl/L	P367541	
		Sulfate	1.9		mg SO4/L	P367543	
	SM 2120 B	Color (true)	20		PCU	P367400	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P367932	
	SM 2540 C-97	TDS	15	U	mg/L	P367703	
	SM 2540 D-97	TSS	2	U	mg/L	P367635	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P367935	
2103790	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P368037	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.13	I	mg N/L	P367479	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P367602	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P367473	
	SM 5310 B-00	Organic Carbon	1.7		mg C/L	P367670	
2103793	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P367463	

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: P367413

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367541

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367543

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368037

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367478

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367479

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367602

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367472

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367473

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: P367463

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

Reference Method: SM 2120 B
Batch ID: P367400

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P367932

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

Reference Method: SM 2540 C-97
Batch ID: P367703

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P367635

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P367935

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P367670

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: P367541

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367543

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368037

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367478

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: P367479

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367602

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367472

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367473

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.3		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367463

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P367400

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

Reference Method: SM 2320 B-97
Batch ID: P367932

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P367935

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P367670

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367541

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103748	Chloride	103		P	90 - 110
2103785	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103748	Sulfate	101		P	90 - 110
2103785	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103765	Ammonia-N	109	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367478

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103765	Kjeldahl Nitrogen	106	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367479

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103871	Kjeldahl Nitrogen	99.4	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367602

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103768	NO2NO3-N	97.0	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367472

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103765	Total-P	97.4	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367473

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103871	Total-P	101	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103793	O-Phosphate-P	97.8	98.7	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P367935

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103751	Fluoride	96.3	96.9	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P367670

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103788	Organic Carbon	99.9	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103834	Turbidity	1.63	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367541

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103748	Chloride	0.318	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103748	Sulfate	0.225	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103765	Ammonia-N	0.192	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367478

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103765	Kjeldahl Nitrogen	1.47	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367479

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103871	Kjeldahl Nitrogen	2.25	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367602

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103768	NO2NO3-N	0.322	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103765	Total-P	1.68	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103871	Total-P	2.92	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103793	O-Phosphate-P	0.916	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P367400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103785	Color (true)	2.17	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P367932

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103751	Total Alkalinity	0.180	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P367703

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103834	TDS	3.97	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P367935

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103751	Fluoride	0.467	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P367670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103788	Organic Carbon	0.497	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: A92796

Included Lab Sample IDs: 2103785, 2103786, 2103787, 2103794

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.6	99.2	P/P	90 - 110
Chloride	99.2	99.9	P/P	90 - 110
Sulfate	97.7	99.6	P/P	90 - 110
Sulfate	99.6	100	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A92835

Included Lab Sample IDs: 2103785, 2103786, 2103787, 2103794

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A92837

Included Lab Sample IDs: 2103785, 2103786, 2103787, 2103794

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A92852

Included Lab Sample IDs: 2103791, 2103792, 2103793, 2103796

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.9	96.6	P/P	90 - 110
O-Phosphate-P	97.5	96.9	P/P	90 - 110
O-Phosphate-P	99.4	99.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92890

Included Lab Sample IDs: 2103795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	99.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92895

Included Lab Sample IDs: 2103788, 2103789, 2103790, 2103795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92896

Included Lab Sample IDs: 2103788, 2103789, 2103790

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92900

Included Lab Sample IDs: 2103788, 2103789, 2103790, 2103795

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

Reference Method: SM 5310 B-00

Run ID: A92918

Included Lab Sample IDs: 2103788, 2103789, 2103790, 2103795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	101	P/P	90 - 110
Organic Carbon	101	99.9	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A93032

Included Lab Sample IDs: 2103785, 2103786, 2103787, 2103794

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A93032

Included Lab Sample IDs: 2103785, 2103786, 2103787, 2103794

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93067

Included Lab Sample IDs: 2103788, 2103789, 2103790, 2103795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	105	P/P	90 - 110
Ammonia-N	105	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					1.63	
EPA 300.0 Rev. 2.1	Chloride	103	103	103		0.318	
	Sulfate	104	101	103		0.225	
EPA 350.1 Rev. 2.0	Ammonia-N	105	109	108			0.192
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	106	104			1.47
	Kjeldahl Nitrogen	102	99.4	102			2.25
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	103	97.0	96.5			0.322
EPA 365.1 Rev. 2.0	Total-P	98.0	97.4	99.2			1.68
	Total-P	98.3	101	104			2.92
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.5	97.8	98.7			0.916
SM 2120 B	Color (true)	102				2.17	
SM 2320 B-97	Total Alkalinity	104				0.180	
SM 2540 C-97	TDS					3.97	
SM 4500 F-C-97	Fluoride	98.1	96.3	96.9			0.467
SM 5310 B-00	Organic Carbon	99.7	99.9	100			0.497

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2103785, 2103786, 2103787, 2103794
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2103785, 2103786, 2103787, 2103794
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2103785, 2103786, 2103787, 2103794
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2103788, 2103789, 2103790, 2103795
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2103788, 2103789, 2103790, 2103795
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2103788, 2103789, 2103790, 2103795
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2103788, 2103789, 2103790, 2103795
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2103791, 2103792, 2103793, 2103796
SM 2120 B / E31780	True Color measured at 450 nm	2103785, 2103786, 2103787, 2103794
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2103785, 2103786, 2103787, 2103794
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2103785, 2103786, 2103787, 2103794
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2103785, 2103786, 2103787, 2103794
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2103785, 2103786, 2103787, 2103794
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2103788, 2103789, 2103790, 2103795

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	07/17/2019			07/17/2019 16:37	Samantha Davila	2103785, 2103786, 2103787, 2103794
EPA 300.0 Rev. 2.1	07/17/2019			07/18/2019 23:23	Jhamieka S. Greenwood	2103785
	07/17/2019			07/19/2019 02:13	Jhamieka S. Greenwood	2103786
	07/17/2019			07/19/2019 02:25	Jhamieka S. Greenwood	2103787
	07/17/2019			07/19/2019 02:37	Jhamieka S. Greenwood	2103794
EPA 350.1 Rev. 2.0	07/17/2019			07/26/2019 19:02	Virginia P. Brown	2103788
	07/17/2019			07/26/2019 19:03	Virginia P. Brown	2103789
	07/17/2019			07/26/2019 19:05	Virginia P. Brown	2103790
	07/17/2019			07/26/2019 19:12	Virginia P. Brown	2103795
EPA 351.2 Rev. 2.0	07/17/2019	07/18/2019 12:25	Sima Feizi	07/19/2019 10:25	Joseph Suarez	2103788
	07/17/2019	07/18/2019 12:25	Sima Feizi	07/19/2019 10:30	Joseph Suarez	2103789
	07/17/2019	07/18/2019 12:25	Sima Feizi	07/19/2019 10:32	Joseph Suarez	2103790
	07/17/2019	07/18/2019 12:25	Sima Feizi	07/19/2019 10:33	Joseph Suarez	2103795
EPA 353.2 Rev. 2.0	07/17/2019			07/19/2019 11:25	Beverly Y. Sanders	2103788
	07/17/2019			07/19/2019 11:26	Beverly Y. Sanders	2103789
	07/17/2019			07/19/2019 11:27	Beverly Y. Sanders	2103790
	07/17/2019			07/19/2019 11:28	Beverly Y. Sanders	2103795
EPA 365.1 Rev. 2.0	07/17/2019	07/18/2019 12:05	Sima Feizi	07/19/2019 09:00	Lipi Saha	2103795
	07/17/2019	07/18/2019 12:05	Sima Feizi	07/19/2019 10:29	Lipi Saha	2103788
	07/17/2019	07/18/2019 12:05	Sima Feizi	07/19/2019 10:31	Lipi Saha	2103789
	07/17/2019	07/18/2019 12:05	Sima Feizi	07/19/2019 10:32	Lipi Saha	2103790
EPA 365.1 Rev. 2.0 dissolved	07/17/2019			07/17/2019 16:41	Jhamieka S. Greenwood	2103793
	07/17/2019			07/17/2019 17:24	Jhamieka S. Greenwood	2103796
	07/17/2019			07/17/2019 17:26	Jhamieka S. Greenwood	2103791
	07/17/2019			07/17/2019 17:32	Jhamieka S. Greenwood	2103792
SM 2120 B	07/17/2019			07/17/2019 15:50	Blanca Fach	2103785
	07/17/2019			07/17/2019 15:51	Blanca Fach	2103786
	07/17/2019			07/17/2019 15:52	Blanca Fach	2103787
	07/17/2019			07/17/2019 15:53	Blanca Fach	2103794
SM 2320 B-97	07/17/2019			07/24/2019 10:05	Dale L. Simmons	2103785
	07/17/2019			07/24/2019 10:17	Dale L. Simmons	2103786
	07/17/2019			07/24/2019 10:30	Dale L. Simmons	2103787
	07/17/2019			07/24/2019 10:41	Dale L. Simmons	2103794
SM 2540 C-97	07/17/2019			07/17/2019 22:46	Yijie Li	2103785, 2103786, 2103787, 2103794
SM 2540 D-97	07/17/2019			07/17/2019 22:46	Yijie Li	2103785, 2103786, 2103787, 2103794
SM 4500 F-C-97	07/17/2019			07/24/2019 10:05	Dale L. Simmons	2103785
	07/17/2019			07/24/2019 10:17	Dale L. Simmons	2103786
	07/17/2019			07/24/2019 10:30	Dale L. Simmons	2103787
	07/17/2019			07/24/2019 10:41	Dale L. Simmons	2103794
SM 5310 B-00	07/17/2019			07/19/2019 21:33	Madeline Funaro	2103788

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	07/17/2019			07/19/2019 23:47	Madeline Funaro	2103789
	07/17/2019			07/19/2019 23:59	Madeline Funaro	2103790
	07/17/2019			07/20/2019 00:11	Madeline Funaro	2103795