

Chemical Analysis Report

SO-DIST-2018-12-11-01

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

Event Description: **Caloosa Creeks**
Request ID: **RQ-2018-12-03-23**
Customer: **SO-DIST**
Project ID: **BMAP**

Send Reports to:
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FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 04-JAN-2019 13:54



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: Orange River

Collection Date/Time: 12/10/2018 11:35

Field ID: G3SD0128

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047829	SM 2120 B	Color (true)	28	A	PCU	P355962	
	SM 2320 B-97	Total Alkalinity	203		mg CaCO3/L	P356129	
	SM 2540 D-97	TSS	2	I	mg/L	P356481	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P356132	
2047832	SM 5310 B-00 dissolved	Organic Carbon	9.6		mg C/L	P356070	
2047835	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P356253	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P356091	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P356136	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P356177	
	SM 5310 B-00	Organic Carbon	9.7		mg C/L	P356070	
2047838	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.013		mg P/L	P356027	

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: Telegraph Creek

Collection Date/Time: 12/10/2018 12:30

Field ID: G3SD0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047830	SM 2120 B	Color (true)	160		PCU	P355962	
	SM 2320 B-97	Total Alkalinity	198		mg CaCO3/L	P356129	
	SM 2540 D-97	TSS	2	I	mg/L	P356481	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P356132	
2047833	SM 5310 B-00 dissolved	Organic Carbon	25		mg C/L	P356070	
2047836	EPA 350.1 Rev. 2.0	Ammonia-N	0.038		mg N/L	P356253	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P356091	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P356136	
	EPA 365.1 Rev. 2.0	Total-P	0.086		mg P/L	P356177	
	SM 5310 B-00	Organic Carbon	25		mg C/L	P356070	
2047839	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.050		mg P/L	P356027	

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: Hancock Creek

Collection Date/Time: 12/10/2018 13:10

Field ID: G3SD0130

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047831	SM 2120 B	Color (true)	59		PCU	P355962	
	SM 2320 B-97	Total Alkalinity	153	A	mg CaCO3/L	P356130	
	SM 2540 D-97	TSS	2	I	mg/L	P356481	
	SM 4500 F-C-97	Fluoride	0.39		mg F/L	P356133	
2047834	SM 5310 B-00 dissolved	Organic Carbon	14		mg C/L	P356070	
2047837	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P356255	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.91		mg N/L	P356092	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P356275	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P356179	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P356071	
2047840	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.10		mg P/L	P356029	

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 350.1 Rev. 2.0
Batch ID: P356253

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356255

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356091

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356092

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356136

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356275

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356177

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356179

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356027

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356029

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

Reference Method: SM 2120 B
Batch ID: P355962

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P356129

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

Reference Method: SM 2320 B-97
Batch ID: P356130

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

Reference Method: SM 2540 D-97
Batch ID: P356481

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P356132

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P356133

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P356070

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

Reference Method: SM 5310 B-00
Batch ID: P356071

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00 dissolved
Batch ID: P356070

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356253

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356255

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356091

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356092

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356136

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356275

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356177

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356179

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356027

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356029

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

Reference Method: SM 2120 B
Batch ID: P355962

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P356129

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.9		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P356130

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

Reference Method: SM 4500 F-C-97
Batch ID: P356132

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.5		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P356133

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

Reference Method: SM 5310 B-00
Batch ID: P356070

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.7		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P356071

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	105		P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P356070

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356253

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047770	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047700	Ammonia-N	97.1	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356091

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047783	Kjeldahl Nitrogen	104	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356092

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047860	Kjeldahl Nitrogen	104	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356136

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047770	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047837	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356177

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047770	Total-P	100	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356179

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047694	Total-P	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356027

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047771	O-Phosphate-P	94.4	95.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356029

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047852	O-Phosphate-P	93.4	93.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P356132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047934	Fluoride	101	99.9	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P356133

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047831	Fluoride	97.4	98.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P356070

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047668	Organic Carbon	102	103	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P356071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047837	Organic Carbon	104	103	P/P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P356070

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047668	Organic Carbon	102	103	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047770	Ammonia-N	0.793	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047700	Ammonia-N	1.49	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356091

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047783	Kjeldahl Nitrogen	1.97	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047860	Kjeldahl Nitrogen	4.95	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356136

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047770	NO2NO3-N	0.482	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047837	NO2NO3-N	0.287	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047770	Total-P	2.71	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047694	Total-P	0.632	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356027

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047771	O-Phosphate-P	1.47	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356029

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047852	O-Phosphate-P	0.269	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P355962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047829	Color (true)	0.604	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P356129

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047934	Total Alkalinity	0.236	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P356130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047831	Total Alkalinity	0.158	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
Batch ID: P356132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047934	Fluoride	0.470	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P356133

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047831	Fluoride	0.940	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P356070

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047668	Organic Carbon	0.438	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P356071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047837	Organic Carbon	0.862	Spike	P	0 - 20

Reference Method: SM 5310 B-00 dissolved
Batch ID: P356070

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047668	Organic Carbon	0.438	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: SM 2120 B

Run ID: A88283

Included Lab Sample IDs: 2047829, 2047830, 2047831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	107	P/P	85 - 115
Color (true)	101	100	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A88299

Included Lab Sample IDs: 2047838, 2047839, 2047840

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.3	98.6	P/P	90 - 110
O-Phosphate-P	98.9	98.3	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A88317

Included Lab Sample IDs: 2047835, 2047836, 2047837

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

Reference Method: SM 5310 B-00 dissolved

Run ID: A88317

Included Lab Sample IDs: 2047832, 2047833, 2047834

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

Reference Method: SM 2320 B-97

Run ID: A88339

Included Lab Sample IDs: 2047829, 2047830, 2047831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.4	101	P/P	90 - 110
Total Alkalinity	98.7	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A88339

Included Lab Sample IDs: 2047829, 2047830, 2047831

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88340

Included Lab Sample IDs: 2047835, 2047836

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88358

Included Lab Sample IDs: 2047835, 2047836

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88381

Included Lab Sample IDs: 2047837

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88382

Included Lab Sample IDs: 2047837

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88389

Included Lab Sample IDs: 2047835, 2047836, 2047837

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	100	P/P	90 - 110
Ammonia-N	99.2	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88416

Included Lab Sample IDs: 2047836, 2047837

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88425

Included Lab Sample IDs: 2047835

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	99.8	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 350.1 Rev. 2.0	Ammonia-N	96.4	100	101			0.793
	Ammonia-N	99.3	97.1	99.9			1.49
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	104	100			1.97
	Kjeldahl Nitrogen	100	104	98.2			4.95
EPA 353.2 Rev. 2.0	NO2NO3-N	102	104	104			0.482
	NO2NO3-N	102	104	104			0.287
EPA 365.1 Rev. 2.0	Total-P	103	100	97.5			2.71
	Total-P	105	101	100			0.632
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	94.4	95.8			1.47
	O-Phosphate-P	102	93.4	93.7			0.269
SM 2120 B	Color (true)	100				0.604	
SM 2320 B-97	Total Alkalinity	99.9				0.236	
	Total Alkalinity	101				0.158	
SM 4500 F-C-97	Fluoride	99.5	101	99.9			0.470
	Fluoride	101	97.4	98.8			0.940
SM 5310 B-00	Organic Carbon	96.7	102	103			0.438
	Organic Carbon	105	104	103			0.862
SM 5310 B-00 dissolved	Organic Carbon	96.7	102	103			0.438

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2047835, 2047836, 2047837
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2047835, 2047836, 2047837
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2047835, 2047836, 2047837
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2047835, 2047836, 2047837
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2047838, 2047839, 2047840
SM 2120 B / E31780	True Color measured at 450 nm	2047829, 2047830, 2047831
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2047829, 2047830, 2047831
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2047829, 2047830, 2047831
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2047829, 2047830, 2047831
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2047835, 2047836, 2047837
SM 5310 B-00 dissolved / E31780	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	2047832, 2047833, 2047834

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 350.1 Rev. 2.0	12/11/2018			12/14/2018 10:53	Ping Hua	2047835
	12/11/2018			12/14/2018 10:55	Ping Hua	2047836
	12/11/2018			12/14/2018 11:49	Ping Hua	2047837
EPA 351.2 Rev. 2.0	12/11/2018	12/13/2018 12:30	Adrian Shelby	12/14/2018 11:24	Chelsea Hernandez	2047835
	12/11/2018	12/13/2018 12:30	Adrian Shelby	12/14/2018 11:25	Chelsea Hernandez	2047836
	12/11/2018	12/13/2018 12:30	Adrian Shelby	12/17/2018 10:38	Chelsea Hernandez	2047837
EPA 353.2 Rev. 2.0	12/11/2018			12/12/2018 11:26	Beverly Y. Sanders	2047835
	12/11/2018			12/12/2018 11:27	Beverly Y. Sanders	2047836
	12/11/2018			12/14/2018 11:49	Beverly Y. Sanders	2047837
EPA 365.1 Rev. 2.0	12/11/2018	12/14/2018 12:10	Sima Feizi	12/18/2018 11:42	Beverly Y. Sanders	2047836
	12/11/2018	12/14/2018 12:10	Sima Feizi	12/18/2018 12:17	Beverly Y. Sanders	2047837
	12/11/2018	12/14/2018 12:10	Sima Feizi	12/18/2018 17:36	Beverly Y. Sanders	2047835
EPA 365.1 Rev. 2.0 dissolved	12/11/2018			12/11/2018 17:07	Jhamieka S. Greenwood	2047838
	12/11/2018			12/11/2018 17:08	Jhamieka S. Greenwood	2047839
	12/11/2018			12/11/2018 17:19	Jhamieka S. Greenwood	2047840
SM 2120 B	12/11/2018			12/11/2018 17:01	Chelsea Hernandez	2047829
	12/11/2018			12/11/2018 17:03	Chelsea Hernandez	2047831
	12/11/2018			12/11/2018 17:26	Chelsea Hernandez	2047830
SM 2320 B-97	12/11/2018			12/12/2018 23:28	Lauren Bottorf	2047829
	12/11/2018			12/12/2018 23:38	Lauren Bottorf	2047830
	12/11/2018			12/13/2018 04:42	Lauren Bottorf	2047831
SM 2540 D-97	12/11/2018			12/13/2018 23:45	Yijie Li	2047829, 2047830, 2047831
SM 4500 F-C-97	12/11/2018			12/12/2018 23:28	Lauren Bottorf	2047829
	12/11/2018			12/12/2018 23:38	Lauren Bottorf	2047830
	12/11/2018			12/13/2018 03:20	Lauren Bottorf	2047831
SM 5310 B-00	12/11/2018			12/12/2018 10:16	Megan Treadwell	2047835
	12/11/2018			12/12/2018 10:29	Megan Treadwell	2047836
	12/11/2018			12/12/2018 11:05	Megan Treadwell	2047837
SM 5310 B-00 dissolved	12/11/2018			12/12/2018 09:40	Megan Treadwell	2047832
	12/11/2018			12/12/2018 09:52	Megan Treadwell	2047833
	12/11/2018			12/12/2018 10:04	Megan Treadwell	2047834