

Chemical Analysis Report

SO-DIST-2019-11-07-01

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

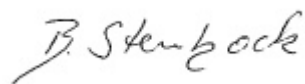
Event Description: **Caloosa Creeks**
Request ID: **RQ-2019-11-04-03**
Customer: **SO-DIST**
Project ID: **BMAP**

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

Date Certified: 26-NOV-2019 16:10



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: Hancock Creek

Collection Date/Time: 11/06/2019 08:00

Field ID: G3SD0130

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2134829	SM 2120 B	Color (true)	79		PCU	P373999	
	SM 2320 B-97	Total Alkalinity	169		mg CaCO3/L	P374290	
	SM 2540 D-97	TSS	3	U	mg/L	P374156	
	SM 4500 F-C-97	Fluoride	0.50		mg F/L	P374292	
2134832	SM 5310 B-00 dissolved	Organic Carbon	14		mg C/L	P374272	
2134835	EPA 350.1 Rev. 2.0	Ammonia-N	0.076		mg N/L	P374263	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P374216	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.056		mg N/L	P374111	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P374141	MS
	SM 5310 B-00	Organic Carbon	14		mg C/L	P374272	
2134838	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P373908	

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: 11/06/2019 08:35

Field ID: G3SD0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2134830	SM 2120 B	Color (true)	190		PCU	P373999	
	SM 2320 B-97	Total Alkalinity	133		mg CaCO3/L	P374211	
	SM 2540 D-97	TSS	2	U	mg/L	P374152	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P374214	
2134833	SM 5310 B-00 dissolved	Organic Carbon	25		mg C/L	P374199	
2134836	EPA 350.1 Rev. 2.0	Ammonia-N	0.051		mg N/L	P374259	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P374223	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P373946	
	EPA 365.1 Rev. 2.0	Total-P	0.092		mg P/L	P374422	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P374199	
2134839	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.063		mg P/L	P373909	

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: Orange River

Collection Date/Time: 11/06/2019 12:07

Field ID: G3SD0128

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2134831	SM 2120 B	Color (true)	49	A	PCU	P373999	
	SM 2320 B-97	Total Alkalinity	185		mg CaCO3/L	P374211	
	SM 2540 D-97	TSS	2	IA	mg/L	P374152	
	SM 4500 F-C-97	Fluoride	0.21		mg F/L	P374214	
2134834	SM 5310 B-00 dissolved	Organic Carbon	11		mg C/L	P374199	
2134837	EPA 350.1 Rev. 2.0	Ammonia-N	0.042		mg N/L	P374259	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P374223	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P373946	
	EPA 365.1 Rev. 2.0	Total-P	0.047		mg P/L	P374422	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P374199	
2134840	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P373909	

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: P374259

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374263

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374216

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374223

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373946

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374111

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374141

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374422

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373908

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: P373909

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

Reference Method: SM 2120 B
Batch ID: P373999

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P374211

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

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 2540 D-97
Batch ID: P374152

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P374156

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P374214

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P374292

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P374199

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P374272

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P374199

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P374272

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: P374259

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374263

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374216

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: P374223

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373946

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: P374111

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374141

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374422

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373908

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373909

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.6		P	90 - 110

Reference Method: SM 2120 B
Batch ID: P373999

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

Reference Method: SM 2320 B-97
Batch ID: P374211

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

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 4500 F-C-97
Batch ID: P374214

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P374292

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P374199

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

Reference Method: SM 5310 B-00
Batch ID: P374272

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P374199

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00 dissolved
Batch ID: P374272

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374259

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2134837	Ammonia-N	95.5	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2134787	Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374216

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2134267	Kjeldahl Nitrogen	94.8	92.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374223

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2134856	Kjeldahl Nitrogen	101	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373946

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2134837	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374111

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2134783	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374141

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2134783	Total-P	86.5	85.5	F/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374422

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2134504	Total-P	97.6	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373908

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2134503	O-Phosphate-P	95.2	95.4	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373909

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2134826	O-Phosphate-P	95.8	95.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P374214

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133723	Fluoride	99.1	98.4	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P374292

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135714	Fluoride	96.5	98.1	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P374199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2134837	Organic Carbon	101	102	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P374272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135398	Organic Carbon	104	106	P/P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P374199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2134837	Organic Carbon	101	102	P/P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P374272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135398	Organic Carbon	104	106	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134837	Ammonia-N	1.69	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134787	Ammonia-N	0.452	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134267	Kjeldahl Nitrogen	2.30	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374223

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134856	Kjeldahl Nitrogen	7.14	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134837	NO2NO3-N	0.311	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134783	NO2NO3-N	0.487	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134783	Total-P	1.16	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134504	Total-P	0.526	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373908

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134503	O-Phosphate-P	0.153	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134826	O-Phosphate-P	0.0844	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P373999

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134831	Color (true)	0.236	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P374211

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133723	Total Alkalinity	0.251	Sample	P	0 - 2.8

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 4500 F-C-97
Batch ID: P374214

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133723	Fluoride	0.524	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P374292

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135714	Fluoride	1.01	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P374199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134837	Organic Carbon	0.221	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P374272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135398	Organic Carbon	1.59	Spike	P	0 - 20

Reference Method: SM 5310 B-00 dissolved
Batch ID: P374199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134837	Organic Carbon	0.221	Spike	P	0 - 20

Reference Method: SM 5310 B-00 dissolved
Batch ID: P374272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135398	Organic Carbon	1.59	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A95574
Included Lab Sample IDs: 2134838, 2134839, 2134840

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A95598
Included Lab Sample IDs: 2134836, 2134837

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

Reference Method: SM 2120 B
Run ID: A95625
Included Lab Sample IDs: 2134829, 2134830, 2134831

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A95704
Included Lab Sample IDs: 2134835

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	102	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A95721
Included Lab Sample IDs: 2134836, 2134837

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	104	105	P/P	90 - 110
Organic Carbon	105	105	P/P	90 - 110

Reference Method: SM 5310 B-00 dissolved
Run ID: A95721
Included Lab Sample IDs: 2134833, 2134834

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

Reference Method: SM 2320 B-97
Run ID: A95725
Included Lab Sample IDs: 2134830, 2134831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	99.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A95725
Included Lab Sample IDs: 2134830, 2134831

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

Reference Method: SM 4500 F-C-97

Run ID: A95725

Included Lab Sample IDs: 2134830, 2134831

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95731

Included Lab Sample IDs: 2134835

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.4	98.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95747

Included Lab Sample IDs: 2134835, 2134836, 2134837

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	100	P/P	90 - 110
Ammonia-N	101	99.7	P/P	90 - 110
Ammonia-N	99.7	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A95750

Included Lab Sample IDs: 2134835

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

Reference Method: SM 5310 B-00 dissolved

Run ID: A95750

Included Lab Sample IDs: 2134832

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

Reference Method: SM 2320 B-97

Run ID: A95757

Included Lab Sample IDs: 2134829

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

Reference Method: SM 4500 F-C-97

Run ID: A95757

Included Lab Sample IDs: 2134829

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A95763

Included Lab Sample IDs: 2134835

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A95763

Included Lab Sample IDs: 2134835

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.0	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A95831

Included Lab Sample IDs: 2134836, 2134837

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: A95898

Included Lab Sample IDs: 2134836

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95931

Included Lab Sample IDs: 2134837

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.5	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	SMP
EPA 350.1 Rev. 2.0	Ammonia-N	97.9	95.5	98.6		1.69
	Ammonia-N	97.7	102	103		0.452
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	94.8	92.3		2.30
	Kjeldahl Nitrogen	98.1	101	108		7.14
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	102		0.311
	NO2NO3-N	101	103	102		0.487
EPA 365.1 Rev. 2.0	Total-P	102	86.5	85.5		1.16
	Total-P	99.4	97.6	98.2		0.526
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	95.2	95.4		0.153
	O-Phosphate-P	96.6	95.8	95.7		0.0844
SM 2120 B	Color (true)	100				0.236
SM 2320 B-97	Total Alkalinity	101				0.251
	Total Alkalinity	98.7				0.195
SM 4500 F-C-97	Fluoride	98.8	99.1	98.4		0.524
	Fluoride	96.9	96.5	98.1		1.01
SM 5310 B-00	Organic Carbon	102	101	102		0.221
	Organic Carbon	104	104	106		1.59
SM 5310 B-00 dissolved	Organic Carbon	102	101	102		0.221
	Organic Carbon	104	104	106		1.59

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2134835, 2134836, 2134837
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2134835, 2134836, 2134837
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2134835, 2134836, 2134837
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2134835, 2134836, 2134837
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2134838, 2134839, 2134840
SM 2120 B / E31780	True Color measured at 450 nm	2134829, 2134830, 2134831
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2134829, 2134830, 2134831
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2134829, 2134830, 2134831
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2134829, 2134830, 2134831
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2134835, 2134836, 2134837
SM 5310 B-00 dissolved / E31780	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	2134832, 2134833, 2134834

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	11/07/2019			11/14/2019 11:55	Ping Hua	2134837
	11/07/2019			11/14/2019 12:13	Ping Hua	2134836
	11/07/2019			11/14/2019 14:07	Ping Hua	2134835
EPA 351.2 Rev. 2.0	11/07/2019	11/14/2019 12:47	Sima Feizi	11/15/2019 12:19	Virginia P. Brown	2134835
	11/07/2019	11/14/2019 18:43	Sima Feizi	11/19/2019 16:15	Jhamieka S. Greenwood	2134836
	11/07/2019	11/14/2019 18:43	Sima Feizi	11/19/2019 16:17	Jhamieka S. Greenwood	2134837
EPA 353.2 Rev. 2.0	11/07/2019			11/08/2019 12:53	Beverly Y. Sanders	2134837
	11/07/2019			11/08/2019 13:00	Beverly Y. Sanders	2134836
	11/07/2019			11/13/2019 10:22	Beverly Y. Sanders	2134835
EPA 365.1 Rev. 2.0	11/07/2019	11/13/2019 14:24	Yen Ta	11/14/2019 13:22	Benjamin T. Nordmann	2134835
	11/07/2019	11/19/2019 12:09	Yen Ta	11/21/2019 15:28	Benjamin T. Nordmann	2134836
	11/07/2019	11/19/2019 12:09	Yen Ta	11/22/2019 12:59	Benjamin T. Nordmann	2134837
EPA 365.1 Rev. 2.0 dissolved	11/07/2019			11/07/2019 15:50	Samantha Davila	2134838
	11/07/2019			11/07/2019 15:52	Samantha Davila	2134839
	11/07/2019			11/07/2019 15:53	Samantha Davila	2134840
SM 2120 B	11/07/2019			11/07/2019 17:19	Madeline Funaro	2134829
	11/07/2019			11/07/2019 17:22	Madeline Funaro	2134831
	11/07/2019			11/07/2019 17:46	Madeline Funaro	2134830
SM 2320 B-97	11/07/2019			11/14/2019 06:54	Dale L. Simmons	2134831
	11/07/2019			11/14/2019 07:25	Dale L. Simmons	2134830
	11/07/2019			11/14/2019 17:42	Dale L. Simmons	2134829
SM 2540 D-97	11/07/2019			11/08/2019 15:36	Rosalyn Ballman	2134829, 2134830, 2134831
SM 4500 F-C-97	11/07/2019			11/14/2019 06:54	Dale L. Simmons	2134831
	11/07/2019			11/14/2019 07:25	Dale L. Simmons	2134830
	11/07/2019			11/14/2019 15:38	Dale L. Simmons	2134829
SM 5310 B-00	11/07/2019			11/13/2019 22:55	Madeline Funaro	2134837
	11/07/2019			11/14/2019 01:33	Madeline Funaro	2134836
	11/07/2019			11/15/2019 07:10	Madeline Funaro	2134835
SM 5310 B-00 dissolved	11/07/2019			11/14/2019 01:09	Madeline Funaro	2134833
	11/07/2019			11/14/2019 01:21	Madeline Funaro	2134834
	11/07/2019			11/15/2019 06:58	Madeline Funaro	2134832