

Chemical Analysis Report

WQAP-2017-07-13-02

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

Event Description: **SMP 2016 Freshwater Kit A**
Request ID: **RQ-2017-06-26-38**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
MS #3560
Tallahassee, FL 32399-2400
Attn: Michael Eckles

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 02-AUG-2017 10:54

A handwritten signature in black ink, appearing to read "Liang Lin", is written on a light-colored, textured background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: BLANK QA/QC BLANK FIELD BLANK

Collection Date/Time: 07/13/2017 07:00

Field ID: QA/QC FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1913342	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P328469	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P328554	
	SM 2120 B	Color (true)	2.5	U	PCU	P328471	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P328662	
	SM 2540 C-97	TDS	15	U	mg/L	P328899	
	SM 2540 D-97	TSS	2	U	mg/L	P329002	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P328667	
1913345	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P328587	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P328619	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P328766	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P328749	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P328862	
1913348	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P328476	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: ST MARKS RIVER DOWN STREAM FROM RISE Collection Date/Time: 07/13/2017 07:30

Field ID: G1TLHR0044-2017-01

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1913343	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P328469	
	EPA 300.0 Rev. 2.1	Chloride	5.5		mg Cl/L	P328554	
	SM 2120 B	Color (true)	89		PCU	P328471	
	SM 2320 B-97	Total Alkalinity	118		mg CaCO3/L	P328662	
	SM 2540 C-97	TDS	165		mg/L	P328901	
	SM 2540 D-97	TSS	2	I	mg/L	P329004	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P328667	
1913346	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P328592	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.19	I	mg N/L	P328619	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P328766	
	EPA 365.1 Rev. 2.0	Total-P	0.047		mg P/L	P328749	
	SM 5310 B-00	Organic Carbon	7.0		mg C/L	P328862	
1913349	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.037		mg P/L	P328476	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: ST MARKS RIVER DOWN STREAM FROM RISE Collection Date/Time: 07/13/2017 07:30

Field ID: G1TLHR0044-2017-01_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1913344	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P328469	
	EPA 300.0 Rev. 2.1	Chloride	5.6		mg Cl/L	P328554	
	SM 2120 B	Color (true)	86		PCU	P328471	

Field ID: G1TLHR0044-2017-01_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1913344	SM 2320 B-97	Total Alkalinity	119		mg CaCO3/L	P328662	
	SM 2540 C-97	TDS	177		mg/L	P328901	
	SM 2540 D-97	TSS	2	I	mg/L	P329004	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P328667	
1913347	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P328589	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24		mg N/L	P328619	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P328766	
	EPA 365.1 Rev. 2.0	Total-P	0.047		mg P/L	P328749	
	SM 5310 B-00	Organic Carbon	7.0		mg C/L	P328862	
1913350	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.038		mg P/L	P328476	

Ref. Method and Comment:
 SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
 SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P328469

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P328554

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P328587

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P328589

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P328592

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P328619

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328766

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328749

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328476

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

Reference Method: SM 2120 B
Batch ID: P328471

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P328662

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P328899

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P328901

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P329002

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P329004

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P328667

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P328862

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: P328554

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328587

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328589

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328592

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328619

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328766

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: P328749

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328749

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328476

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

Reference Method: SM 2320 B-97
Batch ID: P328662

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P328667

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P328862

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913207	Chloride	101		P	90 - 110
1913274	Chloride	98.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328587

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912640	Ammonia-N	104	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328589

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912767	Ammonia-N	105	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P328592

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913219	Ammonia-N	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P328619

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913346	Kjeldahl Nitrogen	103	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P328766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913231	NO2NO3-N	98.9	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P328749

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913279	Total-P	96.1	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P328476

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913282	O-Phosphate-P	95.0	96.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P328667

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913065	Fluoride	98.0	101	P/P	91 - 105

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P328469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913268	Turbidity	1.07	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P328554

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913274	Chloride	0.316	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912640	Ammonia-N	0.488	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328589

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912767	Ammonia-N	1.88	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328592

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913219	Ammonia-N	1.27	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328619

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913346	Kjeldahl Nitrogen	1.60	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913231	NO2NO3-N	0.394	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328749

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913279	Total-P	1.33	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328476

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913282	O-Phosphate-P	1.34	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P328471

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913276	Color (true)	5.62	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P328662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913065	Total Alkalinity	0.163	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P328899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913065	TDS	8.41	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P328901

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913218	TDS	4.77	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P328667

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913065	Fluoride	1.90	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P328862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913156	Organic Carbon	0.199	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: A77695
Included Lab Sample IDs: 1913342, 1913343, 1913344

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

Reference Method: SM 2120 B
Run ID: A77697
Included Lab Sample IDs: 1913342, 1913343, 1913344

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	105	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A77698

Included Lab Sample IDs: 1913342, 1913343, 1913344

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A77701

Included Lab Sample IDs: 1913348, 1913349, 1913350

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A77748

Included Lab Sample IDs: 1913345, 1913346, 1913347

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

Reference Method: SM 2320 B-97

Run ID: A77776

Included Lab Sample IDs: 1913342, 1913343, 1913344

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

Reference Method: SM 4500 F-C-97

Run ID: A77776

Included Lab Sample IDs: 1913342, 1913343, 1913344

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	102	P/P	90 - 110
Fluoride	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77806

Included Lab Sample IDs: 1913345, 1913346, 1913347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77810

Included Lab Sample IDs: 1913345, 1913346, 1913347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.0	97.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77838

Included Lab Sample IDs: 1913345, 1913346, 1913347

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

Reference Method: SM 5310 B-00

Run ID: A77848

Included Lab Sample IDs: 1913345, 1913346, 1913347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	99.6	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				1.07	
EPA 300.0 Rev. 2.1	Chloride	102	98.5 101		0.316	
EPA 350.1 Rev. 2.0	Ammonia-N	105	104 103			0.488
	Ammonia-N	102	105 102			1.88
	Ammonia-N	104	103 104			1.27
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	103 101			1.60
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	98.9 99.4			0.394
EPA 365.1 Rev. 2.0	Total-P	97.2	96.1 97.7			1.33
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	95.0 96.7			1.34
SM 2120 B	Color (true)				5.62	
SM 2320 B-97	Total Alkalinity	103			0.163	
SM 2540 C-97	TDS				8.41	
	TDS				4.77	
SM 4500 F-C-97	Fluoride	100	98.0 101			1.90
SM 5310 B-00	Organic Carbon	96.4				0.199

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1913342, 1913343, 1913344
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1913342, 1913343, 1913344
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1913345, 1913346, 1913347
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1913345, 1913346, 1913347
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1913345, 1913346, 1913347
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1913345, 1913346, 1913347
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1913348, 1913349, 1913350

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 2120 B / E31780	True Color measured at 450 nm	1913342, 1913343, 1913344
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1913342, 1913343, 1913344
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1913342, 1913343, 1913344
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1913342, 1913343, 1913344
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1913342, 1913343, 1913344
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1913345, 1913346, 1913347

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	07/13/2017			07/13/2017 14:57	DeAsia Armster	1913342, 1913343, 1913344
EPA 300.0 Rev. 2.1	07/13/2017			07/14/2017	Julia Storbeck	1913342, 1913343, 1913344
EPA 350.1 Rev. 2.0	07/13/2017			07/14/2017	Sofia Elnemr	1913345, 1913346, 1913347
EPA 351.2 Rev. 2.0	07/13/2017	07/18/2017	Adrian Shelby	07/19/2017	Joseph Suarez	1913345, 1913346, 1913347
EPA 353.2 Rev. 2.0	07/13/2017			07/19/2017	Beverly Y. Sanders	1913345, 1913346, 1913347
EPA 365.1 Rev. 2.0	07/13/2017	07/19/2017	Adrian Shelby	07/20/2017	Lipi Saha	1913345, 1913346, 1913347
EPA 365.1 Rev. 2.0 dissolved	07/13/2017			07/13/2017 14:47	Anthony C. Onicha	1913348
	07/13/2017			07/13/2017 14:48	Anthony C. Onicha	1913349
	07/13/2017			07/13/2017 14:49	Anthony C. Onicha	1913350
	07/13/2017			07/13/2017 14:55	Tanya Welborn	1913342
SM 2120 B	07/13/2017			07/13/2017 14:56	Tanya Welborn	1913343
	07/13/2017			07/13/2017 14:57	Tanya Welborn	1913344
	07/13/2017			07/15/2017	Dale L. Simmons	1913342, 1913343, 1913344
SM 2320 B-97	07/13/2017			07/18/2017	Yijie Li	1913342, 1913343, 1913344
SM 2540 C-97	07/13/2017			07/18/2017	Yijie Li	1913342, 1913343, 1913344
SM 2540 D-97	07/13/2017			07/15/2017	Dale L. Simmons	1913342, 1913343, 1913344
SM 4500 F-C-97	07/13/2017			07/20/2017	Sofia Elnemr	1913345, 1913346, 1913347
SM 5310 B-00	07/13/2017					