

Chemical Analysis Report

NE-DIST-2017-10-04-01

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

Event Description: **SUW 3-10/3/2017**
Request ID: **RQ-2017-10-02-45**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
NE ROC
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Jacksonville, FL 32256-7577
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Certified by: Colin Wright, Program Administrator

Date Certified: 19-OCT-2017 12:36

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray 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 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: RHUDA BRANCH @ 192 AVE (NW 8thTERR)

Collection Date/Time: 10/03/2017 12:35

Field ID: G1NE0625 10032017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934012	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P332738	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P332942	
		Sulfate	7.1		mg SO4/L	P332945	
	SM 2120 B	Color (true)	470		PCU	P332751	
	SM 2320 B-97	Total Alkalinity	7.9		mg CaCO3/L	P333073	
	SM 2540 C-97	TDS	148		mg/L	P333046	
	SM 2540 D-97	TSS	2	U	mg/L	P333092	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P333077	
1934015	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P333171	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P332978	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.041		mg N/L	P333055	
	EPA 365.1 Rev. 2.0	Total-P	0.38		mg P/L	P333011	
	SM 5310 B-00	Organic Carbon	35		mg C/L	P333153	
1934018	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.32		mg P/L	P332732	

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: ROCKY CREEK @ SR 235

Collection Date/Time: 10/03/2017 12:05

Field ID: G1NE0644 10032017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934013	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P332738	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P332942	
		Sulfate	2.4		mg SO4/L	P332945	
	SM 2120 B	Color (true)	520		PCU	P332751	
	SM 2320 B-97	Total Alkalinity	21		mg CaCO3/L	P333073	
	SM 2540 C-97	TDS	144		mg/L	P333046	
	SM 2540 D-97	TSS	2	I	mg/L	P333092	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P333077	
1934016	EPA 350.1 Rev. 2.0	Ammonia-N	0.088		mg N/L	P333171	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P332980	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P333055	
	EPA 365.1 Rev. 2.0	Total-P	0.40		mg P/L	P333011	
	SM 5310 B-00	Organic Carbon	39		mg C/L	P333153	
1934019	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.31		mg P/L	P332732	

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: FIVE MILE CREEK @ SR 239A

Collection Date/Time: 10/03/2017 11:05

Field ID: G1NE0643 10032017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934014	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P332738	
	EPA 300.0 Rev. 2.1	Chloride	8.0		mg Cl/L	P332942	
		Sulfate	0.34	I	mg SO4/L	P332945	

Field ID: G1NE0643 10032017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934014	SM 2120 B	Color (true)	980		PCU	P332751	
	SM 2320 B-97	Total Alkalinity	6.3		mg CaCO3/L	P333073	
	SM 2540 C-97	TDS	168		mg/L	P333046	
	SM 2540 D-97	TSS	3	I	mg/L	P333092	
	SM 4500 F-C-97	Fluoride	0.056	I	mg F/L	P333077	
1934017	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P333303	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P332980	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P333055	
	EPA 365.1 Rev. 2.0	Total-P	0.050		mg P/L	P333011	
	SM 5310 B-00	Organic Carbon	71		mg C/L	P333153	
1934020	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P332732	

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: P332738

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P332942

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P332945

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P333171

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P333303

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P332978

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332980

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333055

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: P333011

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332732

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

Reference Method: SM 2120 B
Batch ID: P332751

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P333073

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

Reference Method: SM 2540 C-97
Batch ID: P333046

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P333092

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P333077

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P333153

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: P332942

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332945

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333171

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333303

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332978

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332980

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333055

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333011

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: P333011

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332732

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

Reference Method: SM 2320 B-97
Batch ID: P333073

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P333077

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

Reference Method: SM 5310 B-00
Batch ID: P333153

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332942

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934034	Chloride	102		P	90 - 110
1934036	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332945

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934034	Sulfate	99.2		P	90 - 110
1934036	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333171

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934039	Ammonia-N	96.5	94.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333303

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934747	Ammonia-N	95.5	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332978

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1933964	Kjeldahl Nitrogen	96.2	98.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934037	Kjeldahl Nitrogen	91.3	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333055

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934061	NO2NO3-N	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333011

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934037	Total-P	90.7	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332732

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934007	O-Phosphate-P	92.5	95.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P333077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934204	Fluoride	97.0	97.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P333153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1933885	Organic Carbon	91.6	91.6	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P332738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933943	Turbidity	7.55	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934034	Chloride	0.831	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332945

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934034	Sulfate	0.673	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333171

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934039	Ammonia-N	1.23	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934747	Ammonia-N	2.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332978

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933964	Kjeldahl Nitrogen	1.65	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934037	Kjeldahl Nitrogen	5.47	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934061	NO2NO3-N	0.707	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P333011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934037	Total-P	5.14	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P332732

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934007	O-Phosphate-P	2.76	Spike	P	0 - 20

Reference Method: SM 2120 B

Batch ID: P332751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933960	Color (true)	1.66	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P333073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934204	Total Alkalinity	0.311	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97

Batch ID: P333046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934204	TDS	3.19	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97

Batch ID: P333077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934204	Fluoride	0.470	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00

Batch ID: P333153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933885	Organic Carbon	0.0351	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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A79337

Included Lab Sample IDs: 1934018, 1934019, 1934020

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.7	99.7	P/P	90 - 110
O-Phosphate-P	99.4	99.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A79338

Included Lab Sample IDs: 1934012, 1934013, 1934014

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

Reference Method: SM 2120 B

Run ID: A79343

Included Lab Sample IDs: 1934012, 1934013, 1934014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	104	105	P/P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A79401

Included Lab Sample IDs: 1934012, 1934013, 1934014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	107	108	P/P	90 - 110
Sulfate	103	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79454

Included Lab Sample IDs: 1934015, 1934016, 1934017

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79457

Included Lab Sample IDs: 1934015, 1934016

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79460

Included Lab Sample IDs: 1934017

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	100	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A79462

Included Lab Sample IDs: 1934012, 1934013, 1934014

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

Reference Method: SM 2320 B-97

Run ID: A79462

Included Lab Sample IDs: 1934012, 1934013, 1934014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A79462

Included Lab Sample IDs: 1934012, 1934013, 1934014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79463

Included Lab Sample IDs: 1934016, 1934017

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.9	98.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79465

Included Lab Sample IDs: 1934015

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	94.2	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A79484

Included Lab Sample IDs: 1934015, 1934016, 1934017

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	96.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79488

Included Lab Sample IDs: 1934015, 1934016

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.1	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79523

Included Lab Sample IDs: 1934017

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	101	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					7.55	
EPA 300.0 Rev. 2.1	Chloride	103	102	103		0.831	
	Sulfate	99.0	99.2	100		0.673	
EPA 350.1 Rev. 2.0	Ammonia-N	97.3	96.5	94.5			1.23
	Ammonia-N	98.1	95.5	97.6			2.02
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.3	96.2	98.1			1.65
	Kjeldahl Nitrogen	103	91.3	99.8			5.47
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	106	105	106			0.707
EPA 365.1 Rev. 2.0	Total-P	96.6	90.7	95.8			5.14
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.7	92.5	95.6			2.76
SM 2120 B	Color (true)					1.66	
SM 2320 B-97	Total Alkalinity	102				0.311	
SM 2540 C-97	TDS					3.19	
SM 4500 F-C-97	Fluoride	96.9	97.0	97.8			0.470
SM 5310 B-00	Organic Carbon	95.5	91.6	91.6			0.0351

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1934012, 1934013, 1934014
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1934012, 1934013, 1934014
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1934012, 1934013, 1934014
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1934015, 1934016, 1934017
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1934015, 1934016, 1934017
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1934015, 1934016, 1934017
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1934015, 1934016, 1934017
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1934018, 1934019, 1934020
SM 2120 B / E31780	True Color measured at 450 nm	1934012, 1934013, 1934014
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1934012, 1934013, 1934014
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1934012, 1934013, 1934014
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1934012, 1934013, 1934014
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1934012, 1934013, 1934014
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1934015, 1934016, 1934017

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	10/04/2017			10/04/2017 16:16	DeAsia Armster	1934012, 1934013, 1934014
EPA 300.0 Rev. 2.1	10/04/2017			10/07/2017	Julia Storbeck	1934012, 1934013, 1934014
EPA 350.1 Rev. 2.0	10/04/2017			10/10/2017	Sofia Elnemr	1934015, 1934016
	10/04/2017			10/12/2017	Sofia Elnemr	1934017
EPA 351.2 Rev. 2.0	10/04/2017	10/09/2017	Adrian Shelby	10/10/2017	Virginia P. Brown	1934015, 1934016, 1934017
EPA 353.2 Rev. 2.0	10/04/2017			10/10/2017	Beverly Y. Sanders	1934015, 1934016, 1934017
EPA 365.1 Rev. 2.0	10/04/2017	10/09/2017	Sima Feizi	10/10/2017	Lipi Saha	1934015, 1934016, 1934017
EPA 365.1 Rev. 2.0 dissolved	10/04/2017			10/04/2017 15:55	Megan Treadwell	1934018
	10/04/2017			10/04/2017 15:56	Megan Treadwell	1934019
	10/04/2017			10/04/2017 16:20	Megan Treadwell	1934020
SM 2120 B	10/04/2017			10/04/2017 17:24	Tanya Welborn	1934012
	10/04/2017			10/04/2017 17:25	Tanya Welborn	1934013, 1934014
SM 2320 B-97	10/04/2017			10/10/2017	Dale L. Simmons	1934012, 1934013, 1934014
SM 2540 C-97	10/04/2017			10/06/2017	Yijie Li	1934012, 1934013, 1934014
SM 2540 D-97	10/04/2017			10/06/2017	Yijie Li	1934012, 1934013, 1934014
SM 4500 F-C-97	10/04/2017			10/10/2017	Dale L. Simmons	1934012, 1934013, 1934014
SM 5310 B-00	10/04/2017			10/10/2017	Ping Hua	1934015, 1934016, 1934017