

Chemical Analysis Report

CEN-DIST-2018-04-04-02

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

Event Description: **Mirror + LVI / Felter**
Request ID: **RQ-2018-04-02-48**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 24-APR-2018 11:38



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: Mirror Lake @ Center of North Lobe

Collection Date/Time: 04/03/2018 10:51

Field ID: G1CE0041

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1980876	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P342788	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P342994	
		Sulfate	27		mg SO4/L	P342997	
	SM 2120 B	Color (true)	12		PCU	P342749	
	SM 2320 B-97	Total Alkalinity	14		mg CaCO3/L	P343412	
	SM 2540 C-97	TDS	110		mg/L	P343342	
	SM 2540 D-97	TSS	2	I	mg/L	P343454	
	SM 4500 F-C-97	Fluoride	0.094	I	mg F/L	P343416	
1980879	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P343312	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P342901	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P343046	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P343038	
	SM 5310 B-00	Organic Carbon	6.6		mg C/L	P343192	
1980882	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P342801	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2320 B-97: Batch relative percent difference is unavailable because of analytical difficulties.

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: Lake Felter @ Center

Collection Date/Time: 04/03/2018 11:40

Field ID: G1CE0042

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1980877	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P342788	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P342994	
		Sulfate	3.3		mg SO4/L	P342997	
	SM 2120 B	Color (true)	110		PCU	P342749	
	SM 2320 B-97	Total Alkalinity	21		mg CaCO3/L	P343412	
	SM 2540 C-97	TDS	130		mg/L	P343343	
	SM 2540 D-97	TSS	2	I	mg/L	P343455	
	SM 4500 F-C-97	Fluoride	0.078	I	mg F/L	P343416	
1980880	EPA 350.1 Rev. 2.0	Ammonia-N	0.18		mg N/L	P343312	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.3		mg N/L	P342901	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.055		mg N/L	P343046	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P343038	
	SM 5310 B-00	Organic Carbon	30		mg C/L	P343192	
1980883	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P342800	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2320 B-97: Batch relative percent difference is unavailable because of analytical difficulties.

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: Lake Lotta at Center of Southern Lobe

Collection Date/Time: 04/03/2018 12:44

Field ID: G2CE0093

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1980878	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P342788	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P342994	
		Sulfate	13		mg SO4/L	P342997	
	SM 2120 B	Color (true)	55	A	PCU	P342749	
	SM 2320 B-97	Total Alkalinity	65		mg CaCO3/L	P343412	
	SM 2540 C-97	TDS	151	A	mg/L	P343343	
	SM 2540 D-97	TSS	3	IA	mg/L	P343455	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P343416	
1980881	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P343313	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P342901	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P343046	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P343038	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P343192	
1980884	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P342800	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2320 B-97: Batch relative percent difference is unavailable because of analytical difficulties.

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: P342788

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P342994

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P342997

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P343312

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P343313

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343313

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342901

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343046

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343038

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342800

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342801

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

Reference Method: SM 2120 B
Batch ID: P342749

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P343412

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

Reference Method: SM 2540 C-97
Batch ID: P343342

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P343343

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P343454

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P343455

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P343416

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P343192

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: P342994

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342997

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343312

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343313

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343313

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342901

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343046

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343038

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342800

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342801

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

Reference Method: SM 2320 B-97
Batch ID: P343412

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P343416

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P343192

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342994

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1980920	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342997

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1980823	Sulfate	99.0		P	90 - 110
1980920	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1980824	Ammonia-N	96.7	99.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343313

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1980881	Ammonia-N	99.0	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342901

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1980924	Kjeldahl Nitrogen	90.6	88.9	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343046

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1980824	NO2NO3-N	106	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1980879	Total-P	98.4	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342800

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1980839	O-Phosphate-P	96.4	96.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342801

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1980882	O-Phosphate-P	91.7	92.7	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
 Batch ID: P343416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1980876	Fluoride	96.6	97.9	P/P	91 - 105

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P342788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980922	Turbidity	7.28	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P342994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980823	Chloride	0.236	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P342997

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980823	Sulfate	0.441	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P343312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980824	Ammonia-N	2.76	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P343313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980881	Ammonia-N	0.485	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P342901

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980924	Kjeldahl Nitrogen	1.68	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980824	NO2NO3-N	0.948	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980879	Total-P	3.89	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342800

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980839	O-Phosphate-P	0.0984	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342801

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980882	O-Phosphate-P	1.08	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P342749

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980878	Color (true)	0.170	Sample	P	0 - 20

Reference Method: SM 2540 C-97
Batch ID: P343342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980782	TDS	8.52	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P343343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980878	TDS	5.30	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P343416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980876	Fluoride	1.02	Spike	P	0 - 3.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P343192

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980556	Organic Carbon	0.449	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: A83001
Included Lab Sample IDs: 1980876, 1980877, 1980878

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	99.0	P/P	90 - 110
Sulfate	100	98.9	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A83034
Included Lab Sample IDs: 1980876, 1980877, 1980878

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.6	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A83045
Included Lab Sample IDs: 1980876, 1980877, 1980878

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A83051
Included Lab Sample IDs: 1980882, 1980883, 1980884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.6	P/P	90 - 110
O-Phosphate-P	99.9	99.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A83122
Included Lab Sample IDs: 1980879, 1980880, 1980881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A83128
Included Lab Sample IDs: 1980879, 1980880, 1980881

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: A83128

Included Lab Sample IDs: 1980879, 1980880, 1980881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.8	99.8	P/P	90 - 110
Kjeldahl Nitrogen	98.6	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A83157

Included Lab Sample IDs: 1980879, 1980880, 1980881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	102	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A83162

Included Lab Sample IDs: 1980879, 1980880, 1980881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.4	95.0	P/P	90 - 110
Organic Carbon	95.0	94.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A83204

Included Lab Sample IDs: 1980879, 1980880, 1980881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	104	P/P	90 - 110
Ammonia-N	104	103	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A83241

Included Lab Sample IDs: 1980876, 1980877, 1980878

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.7	P/P	90 - 110
Total Alkalinity	99.0	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A83241

Included Lab Sample IDs: 1980876, 1980877, 1980878

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	100	P/P	90 - 110
Fluoride	99.5	100	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					7.28	
EPA 300.0 Rev. 2.1	Chloride	99.5	100			0.236	
	Sulfate	98.6	99.0	101		0.441	
EPA 350.1 Rev. 2.0	Ammonia-N	100	96.7	99.8			2.76
	Ammonia-N	99.7	99.0	99.6			0.485
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.3	90.6	88.9			1.68
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	106	106	105			0.948
EPA 365.1 Rev. 2.0	Total-P	103	98.4	102			3.89
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	96.4	96.3			0.0984
	O-Phosphate-P	99.3	91.7	92.7			1.08
SM 2120 B	Color (true)					0.170	
SM 2320 B-97	Total Alkalinity	101					
SM 2540 C-97	TDS					8.52	
	TDS					5.30	
SM 4500 F-C-97	Fluoride	96.9	96.6	97.9			1.02
SM 5310 B-00	Organic Carbon	95.2					0.449

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1980876, 1980877, 1980878
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1980876, 1980877, 1980878
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1980876, 1980877, 1980878
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1980879, 1980880, 1980881
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1980879, 1980880, 1980881
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1980879, 1980880, 1980881
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1980879, 1980880, 1980881
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1980882, 1980883, 1980884
SM 2120 B / E31780	True Color measured at 450 nm	1980876, 1980877, 1980878
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1980876, 1980877, 1980878
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1980876, 1980877, 1980878
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1980876, 1980877, 1980878
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1980876, 1980877, 1980878
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1980879, 1980880, 1980881

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	04/04/2018			04/04/2018 17:53	William L. Brown IV	1980876, 1980877, 1980878
EPA 300.0 Rev. 2.1	04/04/2018			04/06/2018 05:13	Lipi Saha	1980876
	04/04/2018			04/06/2018 05:25	Lipi Saha	1980877
	04/04/2018			04/06/2018 05:37	Lipi Saha	1980878
EPA 350.1 Rev. 2.0	04/04/2018			04/12/2018 12:46	Ping Hua	1980879
	04/04/2018			04/12/2018 12:48	Ping Hua	1980880
	04/04/2018			04/12/2018 13:01	Ping Hua	1980881
EPA 351.2 Rev. 2.0	04/04/2018	04/06/2018 10:50	Adrian Shelby	04/09/2018 13:53	Joseph Suarez	1980879
	04/04/2018	04/06/2018 10:50	Adrian Shelby	04/09/2018 13:58	Joseph Suarez	1980880
	04/04/2018	04/06/2018 10:50	Adrian Shelby	04/09/2018 14:00	Joseph Suarez	1980881
EPA 353.2 Rev. 2.0	04/04/2018			04/09/2018 12:50	Lauren Bottorf	1980879
	04/04/2018			04/09/2018 12:51	Lauren Bottorf	1980880
	04/04/2018			04/09/2018 12:52	Lauren Bottorf	1980881
EPA 365.1 Rev. 2.0	04/04/2018	04/09/2018 13:30	Sima Feizi	04/11/2018 09:46	Beverly Y. Sanders	1980879
	04/04/2018	04/09/2018 13:30	Sima Feizi	04/11/2018 09:47	Beverly Y. Sanders	1980880
	04/04/2018	04/09/2018 13:30	Sima Feizi	04/11/2018 09:48	Beverly Y. Sanders	1980881
EPA 365.1 Rev. 2.0 dissolved	04/04/2018			04/04/2018 15:40	Megan Treadwell	1980882
	04/04/2018			04/04/2018 16:39	Megan Treadwell	1980883
	04/04/2018			04/04/2018 16:40	Megan Treadwell	1980884
SM 2120 B	04/04/2018			04/04/2018 16:05	Tanya Welborn	1980876
	04/04/2018			04/04/2018 16:06	Tanya Welborn	1980877
	04/04/2018			04/04/2018 16:07	Tanya Welborn	1980878
SM 2320 B-97	04/04/2018			04/14/2018 02:47	Dale L. Simmons	1980876
	04/04/2018			04/14/2018 04:53	Dale L. Simmons	1980877
	04/04/2018			04/14/2018 05:26	Dale L. Simmons	1980878
SM 2540 C-97	04/04/2018			04/06/2018 16:01	Yijie Li	1980876, 1980877, 1980878
SM 2540 D-97	04/04/2018			04/06/2018 16:01	Yijie Li	1980876, 1980877, 1980878
SM 4500 F-C-97	04/04/2018			04/14/2018 02:47	Dale L. Simmons	1980876
	04/04/2018			04/14/2018 04:53	Dale L. Simmons	1980877
	04/04/2018			04/14/2018 05:26	Dale L. Simmons	1980878
SM 5310 B-00	04/04/2018			04/11/2018 03:45	Julia Storbeck	1980881
	04/04/2018			04/11/2018 04:30	Julia Storbeck	1980879
	04/04/2018			04/11/2018 05:14	Julia Storbeck	1980880