

Chemical Analysis Report

CEN-DIST-2018-04-19-02

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

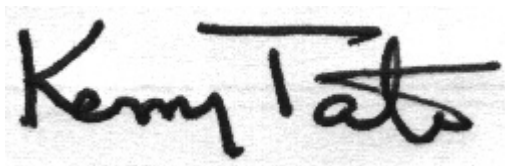
Event Description: **Minnie + D&B / Noname / Yvonne**
Request ID: **RQ-2018-04-16-39**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 09-MAY-2018 11:57

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: LAKE MINNIE @ CENTER

Collection Date/Time: 04/18/2018 10:50

Field ID: G2CE0108

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985994	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P343765	
	EPA 300.0 Rev. 2.1	Chloride	47		mg Cl/L	P343856	
		Sulfate	4.6		mg SO4/L	P343858	
	SM 2120 B	Color (true)	310		PCU	P343755	
	SM 2320 B-97	Total Alkalinity	47		mg CaCO3/L	P344451	
	SM 2540 C-97	TDS	190		mg/L	P344142	
	SM 2540 D-97	TSS	2	U	mg/L	P343915	
	SM 4500 F-C-97	Fluoride	0.067	I	mg F/L	P344455	
1985996	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P344168	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P343885	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.058		mg N/L	P343942	
	EPA 365.1 Rev. 2.0	Total-P	0.085		mg P/L	P343978	
	SM 5310 B-00	Organic Carbon	30		mg C/L	P344203	
1985998	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.038		mg P/L	P343761	

Ref. Method and Comment:

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

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

Sample Location: LAKE MINNIE @ CENTER

Collection Date/Time: 04/18/2018 10:55

Field ID: G2CE0108_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1986000	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P343765	
	EPA 300.0 Rev. 2.1	Chloride	47		mg Cl/L	P343856	
		Sulfate	4.5		mg SO4/L	P343858	
	SM 2120 B	Color (true)	310		PCU	P343755	
	SM 2320 B-97	Total Alkalinity	47		mg CaCO3/L	P344451	
	SM 2540 C-97	TDS	193		mg/L	P344142	
	SM 2540 D-97	TSS	2	U	mg/L	P343915	
	SM 4500 F-C-97	Fluoride	0.066	I	mg F/L	P344455	
1986001	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P344168	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P343885	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.058		mg N/L	P343942	
	EPA 365.1 Rev. 2.0	Total-P	0.087		mg P/L	P343978	
	SM 5310 B-00	Organic Carbon	30		mg C/L	P344203	
1986002	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.038		mg P/L	P343761	

Ref. Method and Comment:

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

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

Sample Location: LAKE LOTUS @ CENTER

Collection Date/Time: 04/18/2018 12:05

Field ID: G2CE0015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985995	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P343765	

Field ID: G2CE0015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985995	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P343856	
		Sulfate	11		mg SO4/L	P343858	
	SM 2120 B	Color (true)	45		PCU	P343755	
	SM 2320 B-97	Total Alkalinity	64		mg CaCO3/L	P344451	
	SM 2540 C-97	TDS	127		mg/L	P344142	
	SM 2540 D-97	TSS	5	I	mg/L	P343915	
	SM 4500 F-C-97	Fluoride	0.099	I	mg F/L	P344455	
1985997	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P344168	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.86		mg N/L	P343885	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P343942	
	EPA 365.1 Rev. 2.0	Total-P	0.082		mg P/L	P343978	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P344203	
1985999	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.01	I	mg P/L	P343761	

Ref. Method and Comment:

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

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

Sample Location: DI SOURCE WASHROOM

Collection Date/Time: 04/18/2018 11:10

Field ID: blank_040182018

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1986003	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P343765	
	EPA 300.0 Rev. 2.1	Chloride	0.24	I	mg Cl/L	P343856	
		Sulfate	0.20	U	mg SO4/L	P343858	
	SM 2120 B	Color (true)	2.5	U	PCU	P343755	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P344451	
	SM 2540 C-97	TDS	15	U	mg/L	P344142	
	SM 2540 D-97	TSS	2	U	mg/L	P343915	
1986004	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P344455	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P344168	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P343885	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P343942	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P343978	
1986005	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P344203	
		O-Phosphate-P	0.004	U	mg P/L	P343761	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample. The result was confirmed on 4/23/2018.

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: P343765

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report

Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343856

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343858

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344168

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343885

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343942

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343978

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343761

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

Reference Method: SM 2120 B
Batch ID: P343755

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P344451

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P344142

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P343915

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P344455

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P344203

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: P343856

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343858

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344168

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343885

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343942

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343942

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343978

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343761

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

Reference Method: SM 2320 B-97
Batch ID: P344451

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P344455

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P344203

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343858

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985900	Sulfate	91.3		P	90 - 110
1985994	Sulfate	92.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985968	Ammonia-N	102	103	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343885

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985908	Kjeldahl Nitrogen	101	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343942

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985970	NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343978

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985968	Total-P	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343761

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985972	O-Phosphate-P	98.1	98.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P344455

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1986212	Fluoride	96.2	95.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P344203

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985459	Organic Carbon	95.6	95.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P343765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985912	Turbidity	3.90	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343856

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985900	Chloride	0.0125	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P343858

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985900	Sulfate	0.126	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P344168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985968	Ammonia-N	0.746	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P343885

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985908	Kjeldahl Nitrogen	0.250	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P343942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985970	NO2NO3-N	1.93	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P343978

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985968	Total-P	0.479	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P343761

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985972	O-Phosphate-P	0.812	Spike	P	0 - 20

Reference Method: SM 2120 B
 Batch ID: P343755

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985905	Color (true)	2.96	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P344451

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986212	Total Alkalinity	0.229	Sample	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P344142

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985912	TDS	3.46	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P344455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986212	Fluoride	0.476	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P344203

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985459	Organic Carbon	0.274	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: A83267
Included Lab Sample IDs: 1985994, 1985995, 1986000, 1986003

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	98.8	P/P	90 - 110
Chloride	98.4	100	P/P	90 - 110
Sulfate	100	99.2	P/P	90 - 110
Sulfate	98.9	100	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A83349
Included Lab Sample IDs: 1985994, 1985995, 1986000, 1986003

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115
Color (true)	102	103	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A83350
Included Lab Sample IDs: 1985998, 1985999, 1986002, 1986005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	98.9	P/P	90 - 110
O-Phosphate-P	98.9	98.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A83351

Included Lab Sample IDs: 1985994, 1985995, 1986000, 1986003

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.5	P/P	95 - 105
Turbidity	99.5	98.5	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A83419

Included Lab Sample IDs: 1985996, 1985997, 1986001, 1986004

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A83447

Included Lab Sample IDs: 1985996, 1985997, 1986001

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A83473

Included Lab Sample IDs: 1986004

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A83490

Included Lab Sample IDs: 1985996, 1985997, 1986001, 1986004

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.0	97.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A83491

Included Lab Sample IDs: 1985996, 1985997, 1986001, 1986004

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

Reference Method: SM 5310 B-00

Run ID: A83500

Included Lab Sample IDs: 1985996, 1985997, 1986001, 1986004

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	98.8	P/P	90 - 110
Organic Carbon	98.8	98.6	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A83593

Included Lab Sample IDs: 1985994, 1985995, 1986000, 1986003

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: A83593

Included Lab Sample IDs: 1985994, 1985995, 1986000, 1986003

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	98.8	P/P	90 - 110
Total Alkalinity	98.4	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A83593

Included Lab Sample IDs: 1985994, 1985995, 1986000, 1986003

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	98.5	P/P	90 - 110
Fluoride	99.0	98.1	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					3.90	
EPA 300.0 Rev. 2.1	Chloride	96.2				0.0125	
	Sulfate	95.6	91.3	92.6		0.126	
EPA 350.1 Rev. 2.0	Ammonia-N	103	102	103			0.746
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	101	102			0.250
EPA 353.2 Rev. 2.0	NO2NO3-N	100	102	104			1.93
EPA 365.1 Rev. 2.0	Total-P	102	101	100			0.479
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.4	98.1	98.9			0.812
SM 2120 B	Color (true)					2.96	
SM 2320 B-97	Total Alkalinity	102				0.229	
SM 2540 C-97	TDS					3.46	
SM 4500 F-C-97	Fluoride	95.2	96.2	95.6			0.476
SM 5310 B-00	Organic Carbon	95.4	95.6	95.0			0.274

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1985994, 1985995, 1986000, 1986003
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1985994, 1985995, 1986000, 1986003
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1985994, 1985995, 1986000, 1986003
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1985996, 1985997, 1986001, 1986004
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1985996, 1985997, 1986001, 1986004
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1985996, 1985997, 1986001, 1986004
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1985996, 1985997, 1986001, 1986004

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1985998, 1985999, 1986002, 1986005
SM 2120 B / E31780	True Color measured at 450 nm	1985994, 1985995, 1986000, 1986003
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1985994, 1985995, 1986000, 1986003
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1985994, 1985995, 1986000, 1986003
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1985994, 1985995, 1986000, 1986003
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1985994, 1985995, 1986000, 1986003
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1985996, 1985997, 1986001, 1986004

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	04/19/2018			04/19/2018 16:36	William L. Brown IV	1985994, 1985995, 1986000, 1986003
EPA 300.0 Rev. 2.1	04/19/2018			04/20/2018 20:37	Lipi Saha	1985994
	04/19/2018			04/20/2018 23:13	Lipi Saha	1985995
	04/19/2018			04/20/2018 23:25	Lipi Saha	1986000
	04/19/2018			04/20/2018 23:36	Lipi Saha	1986003
EPA 350.1 Rev. 2.0	04/19/2018			04/24/2018 13:47	Ping Hua	1985996
	04/19/2018			04/24/2018 13:49	Ping Hua	1985997
	04/19/2018			04/24/2018 13:50	Ping Hua	1986001
	04/19/2018			04/24/2018 13:52	Ping Hua	1986004
EPA 351.2 Rev. 2.0	04/19/2018	04/23/2018 16:00	Adrian Shelby	04/25/2018 08:56	Joseph Suarez	1985996
	04/19/2018	04/23/2018 16:00	Adrian Shelby	04/25/2018 08:58	Joseph Suarez	1985997
	04/19/2018	04/23/2018 16:00	Adrian Shelby	04/25/2018 08:59	Joseph Suarez	1986001
	04/19/2018	04/23/2018 16:00	Adrian Shelby	04/25/2018 09:01	Joseph Suarez	1986004
EPA 353.2 Rev. 2.0	04/19/2018			04/24/2018 11:13	Lauren Bottorf	1986004
	04/19/2018			04/24/2018 11:14	Lauren Bottorf	1985996
	04/19/2018			04/24/2018 11:16	Lauren Bottorf	1986001
	04/19/2018			04/24/2018 11:17	Lauren Bottorf	1985997
EPA 365.1 Rev. 2.0	04/19/2018	04/24/2018 15:27	Sima Feizi	04/25/2018 10:39	Beverly Y. Sanders	1985996
	04/19/2018	04/24/2018 15:27	Sima Feizi	04/25/2018 10:40	Beverly Y. Sanders	1985997
	04/19/2018	04/24/2018 15:27	Sima Feizi	04/25/2018 10:41	Beverly Y. Sanders	1986001
	04/19/2018	04/24/2018 15:27	Sima Feizi	04/25/2018 13:29	Beverly Y. Sanders	1986004
EPA 365.1 Rev. 2.0 dissolved	04/19/2018			04/19/2018 15:50	Megan Treadwell	1985998
	04/19/2018			04/19/2018 15:56	Megan Treadwell	1985999, 1986002
	04/19/2018			04/19/2018 15:57	Megan Treadwell	1986005
SM 2120 B	04/19/2018			04/19/2018 14:42	Tanya Welborn	1985995
	04/19/2018			04/19/2018 14:43	Tanya Welborn	1986003
	04/19/2018			04/19/2018 14:59	Tanya Welborn	1985994, 1986000
SM 2320 B-97	04/19/2018			05/01/2018 21:12	Dale L. Simmons	1985994
	04/19/2018			05/01/2018 21:22	Dale L. Simmons	1985995
	04/19/2018			05/01/2018 21:33	Dale L. Simmons	1986000
	04/19/2018			05/01/2018 22:10	Dale L. Simmons	1986003
SM 2540 C-97	04/19/2018			04/20/2018 18:00	William L. Brown IV	1985994, 1985995, 1986000, 1986003
SM 2540 D-97	04/19/2018			04/20/2018 18:00	William L. Brown IV	1985994, 1985995, 1986000, 1986003
SM 4500 F-C-97	04/19/2018			05/01/2018 21:12	Dale L. Simmons	1985994
	04/19/2018			05/01/2018 21:22	Dale L. Simmons	1985995
	04/19/2018			05/01/2018 21:33	Dale L. Simmons	1986000
	04/19/2018			05/01/2018 22:10	Dale L. Simmons	1986003
SM 5310 B-00	04/19/2018			04/25/2018 17:59	Megan Treadwell	1985996
	04/19/2018			04/25/2018 18:15	Megan Treadwell	1985997
	04/19/2018			04/25/2018 18:30	Megan Treadwell	1986001

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	04/19/2018			04/25/2018 19:17	Megan Treadwell	1986004