

Chemical Analysis Report

TLH-ROC-2018-04-17-01

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

Event Description: **kit A w/ bacteria**
Request ID: **RQ-2018-04-09-52**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 03-MAY-2018 15:00



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: CHIPOLA RIVER

Collection Date/Time: 04/17/2018 10:35

Field ID: G2TLHR0011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985235	EPA 180.1 Rev. 2.0	Turbidity	9.4		NTU	P343612	
	EPA 300.0 Rev. 2.1	Chloride	4.2		mg Cl/L	P343705	
		Sulfate	1.5		mg SO4/L	P343707	
	SM 2120 B	Color (true)	48	A	PCU	P343588	
	SM 2320 B-97	Total Alkalinity	82		mg CaCO3/L	P344071	
	SM 2540 C-97	TDS	108	A	mg/L	P344112	
	SM 2540 D-97	TSS	8	IA	mg/L	P344056	
	SM 4500 F-C-97	Fluoride	0.048	I	mg F/L	P344073	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P344160	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P343725	MS
1985238	EPA 353.2 Rev. 2.0	NO2NO3-N	0.89		mg N/L	P343748	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P343830	
	SM 5310 B-00	Organic Carbon	5.0		mg C/L	P343984	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.009	I	mg P/L	P343674	
	dissolved						

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: G2TLHR0012

Collection Date/Time: 04/17/2018 12:40

Field ID: G2TLHR0012

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985236	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P343612	
	EPA 300.0 Rev. 2.1	Chloride	5.6		mg Cl/L	P343705	
		Sulfate	0.84		mg SO4/L	P343707	
	SM 2120 B	Color (true)	130		PCU	P343588	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P344071	
	SM 2540 C-97	TDS	51		mg/L	P344112	
	SM 2540 D-97	TSS	4	I	mg/L	P344056	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P344073	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P344160	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P343725	MS
1985239	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P343749	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P343830	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P343984	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P343674	
	dissolved						

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: BROTHERS RIVER @ MOUTH

Collection Date/Time: 04/17/2018 14:10

Field ID: G2TLHR0013

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985237	EPA 180.1 Rev. 2.0	Turbidity	8.5		NTU	P343612	
	EPA 300.0 Rev. 2.1	Chloride	7.0		mg Cl/L	P343705	
		Sulfate	7.5		mg SO4/L	P343707	

Field ID: G2TLHR0013

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985237	SM 2120 B	Color (true)	34		PCU	P343588	
	SM 2320 B-97	Total Alkalinity	45		mg CaCO3/L	P344071	
	SM 2540 C-97	TDS	65		mg/L	P344112	
	SM 2540 D-97	TSS	5	I	mg/L	P344056	
	SM 4500 F-C-97	Fluoride	0.074	I	mg F/L	P344073	
1985240	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P344160	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29	J	mg N/L	P343725	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.51		mg N/L	P343749	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P343830	
	SM 5310 B-00	Organic Carbon	3.7		mg C/L	P343984	
1985243	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P343674	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P343612

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343705

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343707

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344160

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343725

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343748

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343749

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343830

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343674

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

Reference Method: SM 2120 B
Batch ID: P343588

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P344071

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

Reference Method: SM 2540 C-97
Batch ID: P344112

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P344056

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P344073

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P343984

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: P343705

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	93.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P343707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P344160

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P343725

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: P343748

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P343749

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P343830

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: P343674

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

Reference Method: SM 2320 B-97
 Batch ID: P344071

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P344073

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.8		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P343984

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343705

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985032	Chloride	98.0		P	90 - 110
1985083	Chloride	98.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985032	Sulfate	92.8		P	90 - 110
1985083	Sulfate	96.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344160

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985238	Ammonia-N	102	99.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343725

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985240	Kjeldahl Nitrogen	104	112	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985085	NO2NO3-N	104		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343749

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985239	NO2NO3-N	102	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343830

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985238	Total-P	106	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343674

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985241	O-Phosphate-P	97.6	97.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P344073

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1984926	Fluoride	94.9	96.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P343984

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985171	Organic Carbon	103		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P343612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985170	Turbidity	2.68	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343705

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985032	Chloride	0.246	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985032	Sulfate	0.742	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344160

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985238	Ammonia-N	1.52	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343725

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985240	Kjeldahl Nitrogen	5.71	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985085	NO2NO3-N	0.605	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343749

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985239	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985238	Total-P	0.462	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343674

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985241	O-Phosphate-P	0.188	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P343588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985235	Color (true)	1.42	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P344071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1984926	Total Alkalinity	0.0685	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P344112

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985235	TDS	4.65	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P344073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1984926	Fluoride	0.986	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P343984

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985171	Organic Carbon	0.0	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: 1985235, 1985236, 1985237

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	97.3	P/P	90 - 110
Sulfate	99.6	97.9	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A83292
Included Lab Sample IDs: 1985235, 1985236, 1985237

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	99.7	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A83304
Included Lab Sample IDs: 1985235, 1985236, 1985237

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A83323
Included Lab Sample IDs: 1985241, 1985242, 1985243

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	102	P/P	90 - 110
O-Phosphate-P	99.4	99.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A83348
Included Lab Sample IDs: 1985238, 1985239, 1985240

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A83348

Included Lab Sample IDs: 1985238, 1985239, 1985240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	103	P/P	90 - 110
NO2NO3-N	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A83386

Included Lab Sample IDs: 1985238, 1985239, 1985240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A83416

Included Lab Sample IDs: 1985238, 1985239, 1985240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.2	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A83431

Included Lab Sample IDs: 1985238, 1985239, 1985240

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

Reference Method: SM 2320 B-97

Run ID: A83462

Included Lab Sample IDs: 1985235, 1985236, 1985237

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.2	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A83462

Included Lab Sample IDs: 1985235, 1985236, 1985237

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A83491

Included Lab Sample IDs: 1985238, 1985239, 1985240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	95.9	P/P	90 - 110
Ammonia-N	95.9	102	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					2.68	
EPA 300.0 Rev. 2.1	Chloride	93.9	98.0	98.2		0.246	
	Sulfate	95.7	92.8	96.3		0.742	
EPA 350.1 Rev. 2.0	Ammonia-N	101	102	99.7			1.52
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	104	112			5.71
EPA 353.2 Rev. 2.0	NO2NO3-N	102	104				0.605
	NO2NO3-N	104	102	102			0.0
EPA 365.1 Rev. 2.0	Total-P	102	106	105			0.462
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9	97.6	97.4			0.188
SM 2120 B	Color (true)					1.42	
SM 2320 B-97	Total Alkalinity	102				0.0685	
SM 2540 C-97	TDS					4.65	
SM 4500 F-C-97	Fluoride	95.8	94.9	96.6			0.986
SM 5310 B-00	Organic Carbon	98.5	103				0.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1985235, 1985236, 1985237
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1985235, 1985236, 1985237
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1985235, 1985236, 1985237
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1985238, 1985239, 1985240
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1985238, 1985239, 1985240
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1985238, 1985239, 1985240
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1985238, 1985239, 1985240
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1985241, 1985242, 1985243
SM 2120 B / E31780	True Color measured at 450 nm	1985235, 1985236, 1985237
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1985235, 1985236, 1985237
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1985235, 1985236, 1985237
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1985235, 1985236, 1985237
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1985235, 1985236, 1985237
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1985238, 1985239, 1985240

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	04/17/2018			04/17/2018 17:41	William L. Brown IV	1985235, 1985236, 1985237
EPA 300.0 Rev. 2.1	04/17/2018			04/19/2018 00:22	Lipi Saha	1985235
	04/17/2018			04/19/2018 00:34	Lipi Saha	1985236
	04/17/2018			04/19/2018 00:46	Lipi Saha	1985237
EPA 350.1 Rev. 2.0	04/17/2018			04/24/2018 09:18	Ping Hua	1985238
	04/17/2018			04/24/2018 09:33	Ping Hua	1985239
	04/17/2018			04/24/2018 09:35	Ping Hua	1985240
EPA 351.2 Rev. 2.0	04/17/2018	04/19/2018 11:30	Adrian Shelby	04/20/2018 13:22	Joseph Suarez	1985238
	04/17/2018	04/19/2018 11:30	Adrian Shelby	04/20/2018 13:24	Joseph Suarez	1985239
	04/17/2018	04/19/2018 11:30	Adrian Shelby	04/20/2018 13:26	Joseph Suarez	1985240
EPA 353.2 Rev. 2.0	04/17/2018			04/19/2018 12:50	Lauren Bottorf	1985239
	04/17/2018			04/19/2018 12:59	Lauren Bottorf	1985240
	04/17/2018			04/19/2018 14:02	Lauren Bottorf	1985238
EPA 365.1 Rev. 2.0	04/17/2018	04/20/2018 12:57	Sima Feizi	04/24/2018 11:34	Beverly Y. Sanders	1985238
	04/17/2018	04/20/2018 12:57	Sima Feizi	04/24/2018 11:35	Beverly Y. Sanders	1985239
	04/17/2018	04/20/2018 12:57	Sima Feizi	04/24/2018 11:36	Beverly Y. Sanders	1985240
EPA 365.1 Rev. 2.0 dissolved	04/17/2018			04/18/2018 15:14	Megan Treadwell	1985241
	04/17/2018			04/18/2018 15:38	Megan Treadwell	1985242
	04/17/2018			04/18/2018 15:39	Megan Treadwell	1985243
SM 2120 B	04/17/2018			04/17/2018 18:34	Tanya Welborn	1985235
	04/17/2018			04/17/2018 18:35	Tanya Welborn	1985236
	04/17/2018			04/17/2018 18:36	Tanya Welborn	1985237
SM 2320 B-97	04/17/2018			04/26/2018 01:58	Dale L. Simmons	1985235
	04/17/2018			04/26/2018 02:10	Dale L. Simmons	1985236
	04/17/2018			04/26/2018 02:20	Dale L. Simmons	1985237
SM 2540 C-97	04/17/2018			04/21/2018 23:36	Yijie Li	1985235, 1985236, 1985237
SM 2540 D-97	04/17/2018			04/21/2018 23:06	Yijie Li	1985235, 1985236, 1985237
SM 4500 F-C-97	04/17/2018			04/26/2018 01:58	Dale L. Simmons	1985235
	04/17/2018			04/26/2018 02:10	Dale L. Simmons	1985236
	04/17/2018			04/26/2018 02:20	Dale L. Simmons	1985237
SM 5310 B-00	04/17/2018			04/23/2018 23:00	Megan Treadwell	1985238
	04/17/2018			04/23/2018 23:14	Megan Treadwell	1985239
	04/17/2018			04/23/2018 23:26	Megan Treadwell	1985240