

Chemical Analysis Report

WQAP-2017-04-12-02

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

Event Description: **Lake Istokpoga**
Request ID: **RQ-2017-04-03-02**
Customer: **WQAP**
Project ID: **SPPROJECTS**

Send Reports to:
FL Dept. of Environmental Protection
2295 Victoria AVE
Suite 364
Fort Myers, FL 33901
Attn: Kirby Wolfe

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 28-APR-2017 10:21



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 ISTOKPOGA ALGAE SE

Collection Date/Time: 04/11/2017 11:11

Field ID: G4SD0154

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887931	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P323267	
	SM 2120 B	Color (true)	67	A	PCU	P323261	
	SM 2540 D-97	TSS	22	I	mg/L	P323891	
1887937	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P323276	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P323376	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P323399	
	EPA 365.1 Rev. 2.0	Total-P	0.099		mg P/L	P323424	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P323469	
1887943	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P323296	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated due to sample matrix interference.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE ISTOKPOGA ALGAE CEN

Collection Date/Time: 04/11/2017 11:50

Field ID: G4SD0156

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887932	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P323267	
	SM 2120 B	Color (true)	67		PCU	P323261	
	SM 2540 D-97	TSS	24	I	mg/L	P323891	
1887938	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P323276	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P323376	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P323399	
	EPA 365.1 Rev. 2.0	Total-P	0.095		mg P/L	P323424	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P323469	
1887944	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P323296	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated due to sample matrix interference.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE ISTOKPOGA ALGAE NE

Collection Date/Time: 04/11/2017 12:00

Field ID: G4SD0151

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887933	EPA 180.1 Rev. 2.0	Turbidity	9.4	A	NTU	P323268	
	SM 2120 B	Color (true)	67		PCU	P323261	
	SM 2540 D-97	TSS	20	I	mg/L	P323892	
1887939	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P323276	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.2		mg N/L	P323376	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P323399	
	EPA 365.1 Rev. 2.0	Total-P	0.092		mg P/L	P323424	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P323469	
1887945	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P323296	

Field ID: G4SD0151

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
Ref. Method and Comment: SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated due to sample matrix interference. EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.							

Sample Location: LAKE ISTOKPOGA ALGAE NW

Collection Date/Time: 04/11/2017 12:45

Field ID: G4SD0152

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887934	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P323268	
	SM 2120 B	Color (true)	68		PCU	P323261	
	SM 2540 D-97	TSS	23	I	mg/L	P323892	
1887940	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P323276	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.0		mg N/L	P323376	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P323399	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P323425	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P323469	
1887946	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P323296	
	dissolved						
Ref. Method and Comment: SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated due to sample matrix interference. EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.							

Sample Location: LAKE ISTOKPOGA ALGAE W

Collection Date/Time: 04/11/2017 13:05

Field ID: G4SD0155

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887935	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P323268	
	SM 2120 B	Color (true)	69		PCU	P323261	
	SM 2540 D-97	TSS	22	I	mg/L	P323892	
1887941	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P323276	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P323376	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P323400	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P323425	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P323469	
1887947	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P323296	
	dissolved						
Ref. Method and Comment: SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated due to sample matrix interference. EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.							

Sample Location: LAKE ISTOKPOGA ALGAE S

Collection Date/Time: 04/11/2017 13:30

Field ID: G4SD0153

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887936	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P323268	
	SM 2120 B	Color (true)	66		PCU	P323261	
	SM 2540 D-97	TSS	21	I	mg/L	P323892	
1887942	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P323276	

Field ID: G4SD0153

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887942	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P323382	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P323400	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P323425	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P323469	
1887948	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P323296	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated due to sample matrix interference.

EPA 351.2 Rev. 2.0: 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: P323267

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P323268

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323276

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323376

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323382

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323399

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323400

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323424

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323425

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323296

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

Reference Method: SM 2120 B
Batch ID: P323261

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2540 D-97
Batch ID: P323891

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P323892

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 5310 B-00
Batch ID: P323469

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323276

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: P323376

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323376

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323382

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323399

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323400

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	96.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323424

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323425

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323296

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

Reference Method: SM 5310 B-00
Batch ID: P323469

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	105		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323276

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P323276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887909	Ammonia-N	99.0	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P323399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887867	NO2NO3-N	97.0	96.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P323400

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887941	NO2NO3-N	95.0	94.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P323424

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887937	Total-P	98.7	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P323425

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1888101	Total-P	103	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P323296

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887943	O-Phosphate-P	96.4	96.9	P/P	90 - 110

Reference Method: SM 5310 B-00
 Batch ID: P323469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887937	Organic Carbon	99.4	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P323267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887847	Turbidity	9.77	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P323268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887933	Turbidity	0.425	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887909	Ammonia-N	1.06	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323376

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887940	Kjeldahl Nitrogen	1.63	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323382

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888467	Kjeldahl Nitrogen	0.0871	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887867	NO2NO3-N	1.04	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887941	NO2NO3-N	1.06	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323424

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887937	Total-P	4.99	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888101	Total-P	2.05	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887943	O-Phosphate-P	0.517	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P323261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887931	Color (true)	0.913	Sample	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P323469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887937	Organic Carbon	0.838	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: SM 2120 B
Run ID: A75747
Included Lab Sample IDs: 1887931, 1887932, 1887933, 1887934, 1887935, 1887936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A75748
Included Lab Sample IDs: 1887931, 1887932, 1887933, 1887934, 1887935, 1887936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	99.0	100	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A75750
Included Lab Sample IDs: 1887937, 1887938, 1887939, 1887940, 1887941, 1887942

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A75755
Included Lab Sample IDs: 1887943, 1887944, 1887945, 1887946, 1887947, 1887948

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A75755

Included Lab Sample IDs: 1887943, 1887944, 1887945, 1887946, 1887947, 1887948

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.9	97.6	P/P	90 - 110
O-Phosphate-P	97.6	97.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75786

Included Lab Sample IDs: 1887937, 1887938, 1887939, 1887940, 1887941, 1887942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	94.0	92.5	P/P	90 - 110
NO2NO3-N	95.5	94.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75791

Included Lab Sample IDs: 1887937, 1887938, 1887939, 1887940, 1887941

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	104	P/P	90 - 110
Kjeldahl Nitrogen	105	106	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A75802

Included Lab Sample IDs: 1887937, 1887938, 1887939, 1887940, 1887941, 1887942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75815

Included Lab Sample IDs: 1887937, 1887938, 1887939, 1887940, 1887941, 1887942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	104	P/P	90 - 110
Total-P	103	105	P/P	90 - 110
Total-P	104	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75819

Included Lab Sample IDs: 1887942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.9	92.7	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					9.77	
	Turbidity					0.425	
EPA 350.1 Rev. 2.0	Ammonia-N	103	99.0	100			1.06
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.9					1.63
	Kjeldahl Nitrogen	96.2					0.0871
EPA 353.2 Rev. 2.0	NO2NO3-N	97.0	97.0	96.0			1.04
	NO2NO3-N	96.0	95.0	94.0			1.06
EPA 365.1 Rev. 2.0	Total-P	101	98.7	105			4.99
	Total-P	98.8	103	100			2.05
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.6	96.4	96.9			0.517
SM 2120 B	Color (true)					0.913	
SM 5310 B-00	Organic Carbon	105	99.4	101			0.838

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1887931, 1887932, 1887933, 1887934, 1887935, 1887936
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1887937, 1887938, 1887939, 1887940, 1887941, 1887942
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1887937, 1887938, 1887939, 1887940, 1887941, 1887942
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1887937, 1887938, 1887939, 1887940, 1887941, 1887942
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1887937, 1887938, 1887939, 1887940, 1887941, 1887942
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1887943, 1887944, 1887945, 1887946, 1887947, 1887948
SM 2120 B / E31780	True Color measured at 450 nm	1887931, 1887932, 1887933, 1887934, 1887935, 1887936
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1887931, 1887932, 1887933, 1887934, 1887935, 1887936
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1887937, 1887938, 1887939, 1887940, 1887941, 1887942

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	04/12/2017			04/12/2017 15:06	Sima Feizi	1887931, 1887932, 1887933, 1887934, 1887935, 1887936
EPA 350.1 Rev. 2.0	04/12/2017			04/12/2017	Julie Michelle Frank	1887937, 1887938, 1887939, 1887940, 1887941, 1887942
EPA 351.2 Rev. 2.0	04/12/2017	04/14/2017	Adrian Shelby	04/14/2017	Joseph Suarez	1887937, 1887938, 1887939, 1887940, 1887941
	04/12/2017	04/14/2017	Adrian Shelby	04/17/2017	Joseph Suarez	1887942
EPA 353.2 Rev. 2.0	04/12/2017			04/14/2017	Beverly Y. Sanders	1887937, 1887938, 1887939, 1887940, 1887941, 1887942
EPA 365.1 Rev. 2.0	04/12/2017	04/14/2017	Vijayalakshmi Reddy	04/17/2017	Lipi Saha	1887937, 1887938, 1887939, 1887940, 1887941, 1887942
EPA 365.1 Rev. 2.0 dissolved	04/12/2017			04/12/2017 15:01	Anthony C. Onicha	1887943
	04/12/2017			04/12/2017 15:14	Anthony C. Onicha	1887944
	04/12/2017			04/12/2017 15:15	Anthony C. Onicha	1887945, 1887946
	04/12/2017			04/12/2017 15:16	Anthony C. Onicha	1887947
	04/12/2017			04/12/2017 15:17	Anthony C. Onicha	1887948
SM 2120 B	04/12/2017			04/12/2017 15:17	Julia Storbeck	1887931
	04/12/2017			04/12/2017 15:18	Julia Storbeck	1887932
	04/12/2017			04/12/2017 15:19	Julia Storbeck	1887933
	04/12/2017			04/12/2017 15:20	Julia Storbeck	1887934, 1887935
	04/12/2017			04/12/2017 15:21	Julia Storbeck	1887936
SM 2540 D-97	04/12/2017			04/14/2017	Yijie Li	1887931, 1887932, 1887933, 1887934, 1887935, 1887936
SM 5310 B-00	04/12/2017			04/13/2017	Julie Michelle Frank	1887937, 1887938, 1887939, 1887940, 1887941
	04/12/2017			04/14/2017	Julie Michelle Frank	1887942