

Chemical Analysis Report

WQAP-2016-12-28-03

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-2016-12-05-05**
Customer: **WQAP**
Project ID: **SPPROJECTS**

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Date Certified: 10-JAN-2017 11:08



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 W

Collection Date/Time: 12/27/2016 09:10

Field ID: G4SD0155

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1860320	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P317504	
	SM 2120 B	Color (true)	110	A	PCU	P317509	
	SM 2540 D-97	TSS	12		mg/L	P317940	
1860326	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P317751	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P317515	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P317609	
	EPA 365.1 Rev. 2.0	Total-P	0.061		mg P/L	P317522	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P317612	
1860332	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P317507	

Ref. Method and Comment:

EPA 350.1 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: 12/27/2016 10:05

Field ID: G4SD0156

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1860321	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P317504	
	SM 2120 B	Color (true)	110		PCU	P317509	
	SM 2540 D-97	TSS	9	I	mg/L	P317940	
1860327	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P317751	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P317515	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P317610	
	EPA 365.1 Rev. 2.0	Total-P	0.055		mg P/L	P317522	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P317612	
1860333	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P317507	

Ref. Method and Comment:

EPA 350.1 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: 12/27/2016 09:30

Field ID: G4SD0153

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1860322	EPA 180.1 Rev. 2.0	Turbidity	5.8		NTU	P317504	
	SM 2120 B	Color (true)	99		PCU	P317509	
	SM 2540 D-97	TSS	12		mg/L	P317941	
1860328	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P317751	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P317516	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P317610	
	EPA 365.1 Rev. 2.0	Total-P	0.059		mg P/L	P317522	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P317612	
1860334	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P317507	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE ISTOKPOGA ALGAE SE

Collection Date/Time: 12/27/2016 09:50

Field ID: G4SD0154

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1860323	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P317504	
	SM 2120 B	Color (true)	100		PCU	P317509	
	SM 2540 D-97	TSS	13		mg/L	P317941	
1860329	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P317751	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P317516	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P317610	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P317522	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P317612	
1860335	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P317507	

Ref. Method and Comment:

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

EPA 350.1 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: 12/27/2016 10:20

Field ID: G4SD0151

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1860324	EPA 180.1 Rev. 2.0	Turbidity	4.9	A	NTU	P317505	
	SM 2120 B	Color (true)	110		PCU	P317509	
	SM 2540 D-97	TSS	8	I	mg/L	P317941	
1860330	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P317752	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P317516	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P317610	
	EPA 365.1 Rev. 2.0	Total-P	0.055		mg P/L	P317522	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P317612	
1860336	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P317507	

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: LAKE ISTOKPOGA ALGAE NW

Collection Date/Time: 12/27/2016 08:50

Field ID: G4SD0152

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1860325	EPA 180.1 Rev. 2.0	Turbidity	9.1		NTU	P317505	
	SM 2120 B	Color (true)	100		PCU	P317509	
	SM 2540 D-97	TSS	17		mg/L	P317941	
1860331	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P317752	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P317516	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P317610	
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P317522	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P317612	
1860337	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P317507	

Ref. Method and Comment:

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

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P317504

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P317505

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317751

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317752

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317515

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317516

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317609

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317610

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317522

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P317507

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

Reference Method: SM 2120 B
Batch ID: P317509

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2540 D-97
Batch ID: P317940

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P317941

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 5310 B-00
Batch ID: P317612

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: P317751

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317752

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: P317515

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317516

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: P317516

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317609

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317610

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: P317522

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	92.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P317507

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

Reference Method: SM 5310 B-00
Batch ID: P317612

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317752

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1860330	Ammonia-N	98.7	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317515

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1860217	Kjeldahl Nitrogen	105	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317516

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1860330	Kjeldahl Nitrogen	96.4	97.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317609

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858677	NO2NO3-N	106	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317610

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1860327	NO2NO3-N	100	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317522

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1860247	Total-P	94.2	91.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P317507

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1860243	O-Phosphate-P	94.5	93.8	P/P	90 - 110

Reference Method: SM 5310 B-00
Batch ID: P317612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1860198	Organic Carbon	95.7	94.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P317504

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860194	Turbidity	10.7	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P317505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860324	Turbidity	2.46	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860201	Ammonia-N	0.343	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317752

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860330	Ammonia-N	0.502	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860217	Kjeldahl Nitrogen	1.27	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860330	Kjeldahl Nitrogen	0.643	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317609

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858677	NO2NO3-N	0.862	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317610

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860327	NO2NO3-N	5.33	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317522

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860247	Total-P	3.10	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P317507

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860243	O-Phosphate-P	0.673	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P317509

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860320	Color (true)	3.49	Sample	P	0 - 20

Reference Method: SM 2540 D-97
Batch ID: P317940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860197	TSS	6.67	Sample	P	0 - 10

Reference Method: SM 5310 B-00
Batch ID: P317612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860198	Organic Carbon	0.473	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 180.1 Rev. 2.0
Run ID: A73621
Included Lab Sample IDs: 1860320, 1860321, 1860322, 1860323, 1860324, 1860325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105
Turbidity	99.5	99.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A73622
Included Lab Sample IDs: 1860332, 1860333, 1860334, 1860335, 1860336, 1860337

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.7	98.9	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A73623
Included Lab Sample IDs: 1860320, 1860321, 1860322, 1860323, 1860324, 1860325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.2	100	P/P	85 - 115

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A73662
Included Lab Sample IDs: 1860326, 1860327

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A73663

Included Lab Sample IDs: 1860328, 1860329, 1860330, 1860331

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.2	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A73666

Included Lab Sample IDs: 1860326, 1860327, 1860328, 1860329, 1860330, 1860331

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	102	P/P	90 - 110
Total-P	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A73672

Included Lab Sample IDs: 1860326, 1860327, 1860328, 1860329, 1860330, 1860331

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

Reference Method: SM 5310 B-00

Run ID: A73673

Included Lab Sample IDs: 1860326, 1860327, 1860328, 1860329, 1860330, 1860331

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.0	96.0	P/P	90 - 110
Organic Carbon	96.0	95.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A73745

Included Lab Sample IDs: 1860326, 1860327, 1860328, 1860329, 1860330, 1860331

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.7	P/P	90 - 110
Ammonia-N	99.7	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				10.7	
	Turbidity				2.46	
EPA 350.1 Rev. 2.0	Ammonia-N	102				0.343
	Ammonia-N	101	98.7	98.2		0.502
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	105	104		1.27
	Kjeldahl Nitrogen	105	96.4	97.7		0.643
EPA 353.2 Rev. 2.0	NO2NO3-N	106	106	105		0.862
	NO2NO3-N	106	100	106		5.33

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 365.1 Rev. 2.0	Total-P	92.4	94.2	91.0		3.10
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	94.5	93.8		0.673
SM 2120 B	Color (true)				3.49	
SM 2540 D-97	TSS				6.67	
SM 5310 B-00	Organic Carbon	101	95.7	94.8		0.473

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1860320, 1860321, 1860322, 1860323, 1860324, 1860325
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1860326, 1860327, 1860328, 1860329, 1860330, 1860331
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1860326, 1860327, 1860328, 1860329, 1860330, 1860331
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1860326, 1860327, 1860328, 1860329, 1860330, 1860331
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1860326, 1860327, 1860328, 1860329, 1860330, 1860331
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1860332, 1860333, 1860334, 1860335, 1860336, 1860337
SM 2120 B / E31780	True Color measured at 450 nm	1860320, 1860321, 1860322, 1860323, 1860324, 1860325
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1860320, 1860321, 1860322, 1860323, 1860324, 1860325
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1860326, 1860327, 1860328, 1860329, 1860330, 1860331

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	12/28/2016			12/28/2016 14:58	Sima Feizi	1860320, 1860321, 1860322, 1860323, 1860324, 1860325
EPA 350.1 Rev. 2.0	12/28/2016			01/04/2017	Sofia Elnemr	1860326, 1860327, 1860328, 1860329, 1860330, 1860331
EPA 351.2 Rev. 2.0	12/28/2016	12/29/2016	Adrian Shelby	12/30/2016	Joseph Suarez	1860326, 1860327, 1860328, 1860329, 1860330, 1860331
EPA 353.2 Rev. 2.0	12/28/2016			12/30/2016	Beverly Y. Sanders	1860326, 1860327, 1860328, 1860329, 1860330, 1860331
EPA 365.1 Rev. 2.0	12/28/2016	12/29/2016	Adrian Shelby	12/30/2016	Beverly Y. Sanders	1860326, 1860327, 1860328, 1860329, 1860330, 1860331
EPA 365.1 Rev. 2.0 dissolved	12/28/2016			12/28/2016 15:33	Lipi Saha	1860332
	12/28/2016			12/28/2016 15:34	Lipi Saha	1860333
	12/28/2016			12/28/2016 15:35	Lipi Saha	1860334
	12/28/2016			12/28/2016 15:36	Lipi Saha	1860335
	12/28/2016			12/28/2016 15:37	Lipi Saha	1860336
	12/28/2016			12/28/2016 15:38	Lipi Saha	1860337
SM 2120 B	12/28/2016			12/28/2016 15:29	Julie Michelle Frank	1860320
	12/28/2016			12/28/2016 15:30	Julie Michelle Frank	1860321, 1860322
	12/28/2016			12/28/2016 15:31	Julie Michelle Frank	1860323
	12/28/2016			12/28/2016 15:32	Julie Michelle Frank	1860324
	12/28/2016			12/28/2016 15:33	Julie Michelle Frank	1860325
SM 2540 D-97	12/28/2016			12/30/2016	Yijie Li	1860320, 1860321, 1860322, 1860323, 1860324, 1860325
SM 5310 B-00	12/28/2016			12/29/2016	Julie Michelle Frank	1860326, 1860327, 1860328, 1860329, 1860330, 1860331