

Chemical Analysis Report

NW-DIST-2017-03-14-01

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

Event Description: **Bayou Chico BMAP**
Request ID: **RQ-2017-02-20-15**
Customer: **NW-DIST**
Project ID: **BMAP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 308
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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: Colin Wright, Program Administrator

Date Certified: 06-APR-2017 11:02

A handwritten signature in black ink, appearing to read "Colin Wright", is written over a light blue rectangular background.

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: Pensacola Bay at Sanders Beach

Collection Date/Time: 03/13/2017 10:40

Field ID: A

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1879711	EPA 180.1 Rev. 2.0	Turbidity	4.1	A	NTU	P321562	
1879718	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P321553	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P321652	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P321735	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P321600	

Sample Location: Bayou Chico at Mandalay Park

Collection Date/Time: 03/13/2017 11:00

Field ID: B

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1879712	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P321562	
1879719	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P321553	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30	I	mg N/L	P321652	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P321735	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P321600	

Sample Location: Jones Creek at Old Corry Road

Collection Date/Time: 03/13/2017 11:45

Field ID: C

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1879713	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P321562	
1879720	EPA 350.1 Rev. 2.0	Ammonia-N	0.042		mg N/L	P321554	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37		mg N/L	P321653	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P321664	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P321602	

Sample Location: Jackson Creek at Old Corry Road

Collection Date/Time: 03/13/2017 12:05

Field ID: D

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1879714	EPA 180.1 Rev. 2.0	Turbidity	6.1		NTU	P321562	
1879721	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P321554	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P321653	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.3		mg N/L	P321664	
	EPA 365.1 Rev. 2.0	Total-P	0.053		mg P/L	P321603	

Sample Location: Jackson Creek at New Warrington Road

Collection Date/Time: 03/13/2017 12:30

Field ID: E

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1879715	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P321562	
1879722	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P321554	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20	I	mg N/L	P321653	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.4		mg N/L	P321664	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P321603	

Sample Location: Bayou Chico at Navy Blvd Bridge

Collection Date/Time: 03/13/2017 13:40

Field ID: F

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1879716	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P321562	
1879723	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P321553	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P321652	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.56		mg N/L	P321735	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P321601	

Sample Location: Bayou Chico at W Street

Collection Date/Time: 03/13/2017 14:00

Field ID: G

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1879717	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P321562	
1879724	EPA 350.1 Rev. 2.0	Ammonia-N	0.067		mg N/L	P321553	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P321709	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.87		mg N/L	P321735	
	EPA 365.1 Rev. 2.0	Total-P	0.049		mg P/L	P321601	

Sample Location: Field Blank

Collection Date/Time: 03/13/2017 12:10

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1879725	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P321562	
1879726	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P321553	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P321711	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P321960	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P321797	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P321562

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P321553

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P321554

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321652

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321653

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321709

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321711

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321664

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321735

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321960

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321600

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321601

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
Batch ID: P321602

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321603

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321797

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321553

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321554

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321652

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321653

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321709

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321711

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
-----------	---------	---------	-----------	----------------

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321711

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321664

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321735

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321960

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: P321600

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321601

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321602

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321603

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321797

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879718	Ammonia-N	108	107	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879720	Ammonia-N	104	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321652

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879505	Kjeldahl Nitrogen	99.0	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321653

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879721	Kjeldahl Nitrogen	95.1	95.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321709

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879849	Kjeldahl Nitrogen	96.8	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321711

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879740	Kjeldahl Nitrogen	91.8	93.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321664

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879720	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321735

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879506	NO2NO3-N	98.6	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321960

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1880012	NO2NO3-N	102	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321600

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879504	Total-P	97.9	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321601

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879746	Total-P	99.5	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321602

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879611	Total-P	99.2	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321603

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879722	Total-P	103	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321797

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1880357	Total-P	99.6	102	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P321562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879711	Turbidity	2.66	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879718	Ammonia-N	1.23	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321554

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879720	Ammonia-N	0.664	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879505	Kjeldahl Nitrogen	2.51	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321653

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879721	Kjeldahl Nitrogen	0.0498	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321709

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879849	Kjeldahl Nitrogen	3.11	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879740	Kjeldahl Nitrogen	0.679	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879720	NO2NO3-N	0.617	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321735

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879506	NO2NO3-N	0.358	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321960

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1880012	NO2NO3-N	0.985	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879504	Total-P	0.227	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321601

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879746	Total-P	0.246	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321602

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879611	Total-P	2.61	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321603

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879722	Total-P	4.07	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321797

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1880357	Total-P	2.34	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 350.1 Rev. 2.0
Run ID: A75099
Included Lab Sample IDs: 1879718, 1879719, 1879720, 1879721, 1879722, 1879723, 1879724, 1879726

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A75104
Included Lab Sample IDs: 1879711, 1879712, 1879713, 1879714, 1879715, 1879716, 1879717, 1879725

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A75140
Included Lab Sample IDs: 1879720, 1879721, 1879722

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
-----------	---------	---------	------------	----------------

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75140

Included Lab Sample IDs: 1879720, 1879721, 1879722

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75166

Included Lab Sample IDs: 1879718, 1879719, 1879723, 1879724

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.0	98.0	P/P	90 - 110
NO2NO3-N	98.0	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75167

Included Lab Sample IDs: 1879721

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75175

Included Lab Sample IDs: 1879718, 1879719, 1879720, 1879722, 1879723, 1879724

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.5	97.2	P/P	90 - 110
Total-P	98.0	96.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75196

Included Lab Sample IDs: 1879718, 1879719, 1879720, 1879721, 1879722, 1879723

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.4	97.6	P/P	90 - 110
Kjeldahl Nitrogen	97.6	92.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75212

Included Lab Sample IDs: 1879726

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75215

Included Lab Sample IDs: 1879724

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.8	98.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75234

Included Lab Sample IDs: 1879726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75257

Included Lab Sample IDs: 1879726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	97.5	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				2.66	
EPA 350.1 Rev. 2.0	Ammonia-N	104	108 107			1.23
	Ammonia-N	104	104 103			0.664
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.7	99.0 102			2.51
	Kjeldahl Nitrogen	103	95.1 95.2			0.0498
	Kjeldahl Nitrogen	103	96.8 101			3.11
	Kjeldahl Nitrogen	104	91.8 93.0			0.679
EPA 353.2 Rev. 2.0	NO2NO3-N	100	102 102			0.617
	NO2NO3-N	99.5	98.6 99.0			0.358
	NO2NO3-N	100	102 101			0.985
EPA 365.1 Rev. 2.0	Total-P	103	97.9 97.7			0.227
	Total-P	102	99.5 99.8			0.246
	Total-P	103	99.2 102			2.61
	Total-P	106	103 107			4.07
	Total-P	106	99.6 102			2.34

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1879711, 1879712, 1879713, 1879714, 1879715, 1879716, 1879717, 1879725
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1879718, 1879719, 1879720, 1879721, 1879722, 1879723, 1879724, 1879726
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1879718, 1879719, 1879720, 1879721, 1879722, 1879723, 1879724, 1879726
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1879718, 1879719, 1879720, 1879721, 1879722, 1879723, 1879724, 1879726
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1879718, 1879719, 1879720, 1879721, 1879722, 1879723, 1879724, 1879726

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	03/14/2017			03/14/2017 16:51	Blanca Fach	1879711, 1879712, 1879713, 1879714, 1879715, 1879716, 1879717, 1879725
EPA 350.1 Rev. 2.0	03/14/2017			03/14/2017	Sofia Elnemr	1879718, 1879719, 1879720, 1879721, 1879722, 1879723, 1879724, 1879726
EPA 351.2 Rev. 2.0	03/14/2017	03/16/2017	Adrian Shelby	03/20/2017	Joseph Suarez	1879718, 1879719, 1879720, 1879721, 1879722, 1879723
	03/14/2017	03/17/2017	Adrian Shelby	03/20/2017	Joseph Suarez	1879726
	03/14/2017	03/17/2017	Adrian Shelby	03/21/2017	Joseph Suarez	1879724
EPA 353.2 Rev. 2.0	03/14/2017			03/16/2017	Beverly Y. Sanders	1879720, 1879721, 1879722
	03/14/2017			03/17/2017	Beverly Y. Sanders	1879718, 1879719, 1879723, 1879724
	03/14/2017			03/21/2017	Beverly Y. Sanders	1879726
EPA 365.1 Rev. 2.0	03/14/2017	03/15/2017	Vijayalakshmi Reddy	03/17/2017	Lipi Saha	1879718, 1879719, 1879720, 1879721, 1879722, 1879723, 1879724
	03/14/2017	03/20/2017	Vijayalakshmi Reddy	03/21/2017	Lipi Saha	1879726