

Chemical Analysis Report

NW-DIST-2016-04-19-01

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-2016-03-21-16**

Customer: **NW-DIST**

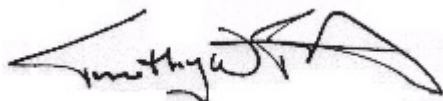
Project ID: **BMAP**

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Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 10-MAY-2016 16:32



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: Sander's Beach

Collection Date/Time: 04/18/2016 10:25

Field ID: F

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1790125	EPA 180.1 Rev. 2.0	Turbidity	5.5	A	NTU	P302553	
1790134	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P303077	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P303095	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.081		mg N/L	P303057	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P302794	

Sample Location: Mandalay Dr

Collection Date/Time: 04/18/2016 10:50

Field ID: E

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1790126	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P302553	
1790135	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P303086	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P303390	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P302865	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P303045	

Sample Location: Jones at Old Corry

Collection Date/Time: 04/18/2016 11:15

Field ID: D

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1790127	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P302553	
1790136	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P303086	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P303390	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P302865	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P303045	

Sample Location: Clean Equipment Blank

Collection Date/Time: 04/18/2016 11:30

Field ID: Equipment Blank

Matrix: W-EQPMT-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1790128	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P302553	
1790137	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P303086	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P303390	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P302865	
	EPA 365.1 Rev. 2.0	Total-P	0.002	I	mg P/L	P303072	

Ref. Method and Comment:

EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 05/04/2016.

Sample Location: Jackson at Old Corry

Collection Date/Time: 04/18/2016 11:50

Field ID: A

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1790129	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P302553	
1790138	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P303086	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.19	I	mg N/L	P303391	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.5		mg N/L	P302865	

Field ID: A

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1790138	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P303072	

Sample Location: Jackson at New Warrington

Collection Date/Time: 04/18/2016 12:10

Field ID: G

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1790130	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P302553	
1790139	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P303086	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21	J	mg N/L	P303391	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.4		mg N/L	P302865	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P303072	

Ref. Method and Comment:
 EPA 351.2 Rev. 2.0: Refer to the narrative for an explanation of QC Codes.

Sample Location: Field Dup.Jackson @ NewWarrington

Collection Date/Time: 04/18/2016 12:15

Field ID: G-Dup

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1790131	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P302553	
1790140	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P303086	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20	I	mg N/L	P303391	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.4		mg N/L	P302866	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P303068	

Sample Location: Bayou Chico @ Navy Blvd

Collection Date/Time: 04/18/2016 12:55

Field ID: C

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1790132	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P302553	
1790141	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P303087	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33		mg N/L	P303391	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.86		mg N/L	P302866	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P303068	

Sample Location: Bayou Chico @ "W" Street

Collection Date/Time: 04/18/2016 13:20

Field ID: B

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1790133	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P302553	
1790142	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P303087	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P303391	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.1		mg N/L	P302866	
	EPA 365.1 Rev. 2.0	Total-P	0.043		mg P/L	P303068	

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P302553

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303077

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303086

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303087

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303095

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303390

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303391

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302865

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302866

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P303057

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P302794

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P303045

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P303068

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P303072

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: P303077

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P303086

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: P303087

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P303095

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: P303095

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303390

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303391

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302865

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	109		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302866

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: P303057

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: P302794

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303045

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303068

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.1		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P303072

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P303077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1790134	Ammonia-N	99.8	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P303086

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1790138	Ammonia-N	99.8	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P303087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1790163	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P303095

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1790134	Kjeldahl Nitrogen	96.9	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P303390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1789940	Kjeldahl Nitrogen	114	110	F/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P303391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1790139	Kjeldahl Nitrogen	87.1	88.7	F/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P302865

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1790135	NO2NO3-N	106		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P302866

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P302866

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1790153	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P303057

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1790134	NO2NO3-N	94.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P302794

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1789447	Total-P	97.8	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P303045

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1790083	Total-P	95.4	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P303068

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1790140	Total-P	93.8	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P303072

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1790138	Total-P	99.9	101	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P302553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1790125	Turbidity	0.917	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P303077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1790134	Ammonia-N	0.702	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303086

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1790138	Ammonia-N	0.553	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1790163	Ammonia-N	0.561	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303095

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1790134	Kjeldahl Nitrogen	2.71	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789940	Kjeldahl Nitrogen	1.39	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1790139	Kjeldahl Nitrogen	1.45	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302865

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1790135	NO2NO3-N	0.197	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302866

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1790153	NO2NO3-N	0.466	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1790134	NO2NO3-N	2.93	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789447	Total-P	6.55	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303045

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1790083	Total-P	0.676	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303068

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1790140	Total-P	4.64	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1790138	Total-P	1.08	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: A68973
Included Lab Sample IDs: 1790125, 1790126, 1790127, 1790128, 1790129, 1790130, 1790131, 1790132, 1790133

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A69066
Included Lab Sample IDs: 1790135, 1790136, 1790137, 1790138, 1790139, 1790140, 1790141, 1790142

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A69085
Included Lab Sample IDs: 1790134

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69129

Included Lab Sample IDs: 1790134

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69134

Included Lab Sample IDs: 1790134, 1790135, 1790136, 1790137, 1790138, 1790139, 1790140, 1790141, 1790142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	100	P/P	90 - 110
Ammonia-N	101	102	P/P	90 - 110
Ammonia-N	102	102	P/P	90 - 110
Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69203

Included Lab Sample IDs: 1790135, 1790136, 1790137, 1790138, 1790139, 1790140, 1790141, 1790142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	98.0	P/P	90 - 110
Total-P	98.5	97.5	P/P	90 - 110
Total-P	98.8	97.8	P/P	90 - 110
Total-P	99.2	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69223

Included Lab Sample IDs: 1790134

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.8	96.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69302

Included Lab Sample IDs: 1790135, 1790136, 1790137, 1790138, 1790139, 1790140, 1790141, 1790142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	101	P/P	90 - 110
Kjeldahl Nitrogen	99.6	98.7	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				0.917	
EPA 350.1 Rev. 2.0	Ammonia-N	98.8	99.8	101		0.702
	Ammonia-N	102	99.8	101		0.553
	Ammonia-N	102	100	101		0.561

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.5	96.9	100		2.71
	Kjeldahl Nitrogen	99.3	114	110		1.39
	Kjeldahl Nitrogen	102	87.1	88.7		1.45
EPA 353.2 Rev. 2.0	NO2NO3-N	109	106			0.197
	NO2NO3-N	106	103	103		0.466
	NO2NO3-N	104	94.0	98.0		2.93
EPA 365.1 Rev. 2.0	Total-P	104	97.8	105		6.55
	Total-P	98.6	95.4	96.2		0.676
	Total-P	97.1	93.8	98.6		4.64
	Total-P	96.2	99.9	101		1.08

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1790125, 1790126, 1790127, 1790128, 1790129, 1790130, 1790131, 1790132, 1790133
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1790134, 1790135, 1790136, 1790137, 1790138, 1790139, 1790140, 1790141, 1790142
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1790134, 1790135, 1790136, 1790137, 1790138, 1790139, 1790140, 1790141, 1790142
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1790134, 1790135, 1790136, 1790137, 1790138, 1790139, 1790140, 1790141, 1790142
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1790134, 1790135, 1790136, 1790137, 1790138, 1790139, 1790140, 1790141, 1790142

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	04/19/2016			04/19/2016 14:16	Blanca Fach	1790125, 1790126, 1790127, 1790128, 1790129, 1790130, 1790131, 1790132, 1790133
EPA 350.1 Rev. 2.0	04/19/2016			04/27/2016	Diana M. Turner	1790134, 1790135, 1790136, 1790137, 1790138, 1790139, 1790140, 1790141, 1790142
EPA 351.2 Rev. 2.0	04/19/2016	04/27/2016	Sofia Elnemr	05/02/2016	Christopher Armour	1790134
	04/19/2016	05/03/2016	Sofia Elnemr	05/04/2016	Christopher Armour	1790135, 1790136, 1790137, 1790138, 1790139, 1790140, 1790141, 1790142
EPA 353.2 Rev. 2.0	04/19/2016			04/22/2016	Peter D. Kaus	1790135, 1790136, 1790137, 1790138, 1790139, 1790140, 1790141, 1790142
	04/19/2016			04/27/2016	Peter D. Kaus	1790134
EPA 365.1 Rev. 2.0	04/19/2016	04/22/2016	Lipi Saha	04/25/2016	Lipi Saha	1790134
	04/19/2016	04/27/2016	Lipi Saha	04/28/2016	Lipi Saha	1790135, 1790136, 1790137, 1790138, 1790139, 1790140, 1790141, 1790142