

Chemical Analysis Report

NW-DIST-2020-01-14-02

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

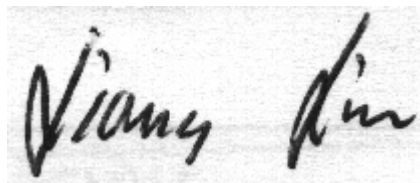
Event Description: **Bayou Chico BMAP**
Request ID: **RQ-2019-12-09-39**
Customer: **NW-DIST**
Project ID: **BMAP**

Send Reports to:
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160 Government Center
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 29-JAN-2020 15:42

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored 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 by the Florida Department of Health Environmental Laboratory Certification Program 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: 01/13/2020 10:50

Field ID: 33020J10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149219	EPA 180.1 Rev. 2.0	Turbidity	4.0	A	NTU	P377127	
2149220	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P377372	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P377426	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.052		mg N/L	P377587	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P377494	

Sample Location: Bayou Chico at Mandalay Drive

Collection Date/Time: 01/13/2020 11:15

Field ID: 33020JD4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149207	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P377126	
2149210	EPA 350.1 Rev. 2.0	Ammonia-N	0.056		mg N/L	P377372	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P377325	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P377588	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P377465	

Sample Location: Jackson Creek @ Old Corry Road

Collection Date/Time: 01/13/2020 12:25

Field ID: 33020221

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149213	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P377127	
2149216	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P377305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21		mg N/L	P377326	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.5		mg N/L	P377417	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P377541	

Sample Location: Jackson Creek at New Warrington Road

Collection Date/Time: 01/13/2020 12:45

Field ID: 33020222

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149214	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P377127	
2149217	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P377305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.19	I	mg N/L	P377326	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.1		mg N/L	P377417	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P377541	

Sample Location: Jones Creek Upstream of New Warrington Rd Collection Date/Time: 01/13/2020 13:05

Field ID: 33020117

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149215	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P377127	
2149218	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P377305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P377326	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P377417	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P377541	

Sample Location: Bayou Chico at Navy Blvd. Bridge

Collection Date/Time: 01/13/2020 13:55

Field ID: 3302JE20

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149208	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P377126	
2149211	EPA 350.1 Rev. 2.0	Ammonia-N	0.082		mg N/L	P377372	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39	I	mg N/L	P377325	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.51		mg N/L	P377588	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P377494	

Sample Location: Bayou Chico at W St. Bridge

Collection Date/Time: 01/13/2020 14:15

Field ID: 33020JF1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149209	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P377126	
2149212	EPA 350.1 Rev. 2.0	Ammonia-N	0.093		mg N/L	P377305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33		mg N/L	P377326	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.0		mg N/L	P377516	
	EPA 365.1 Rev. 2.0	Total-P	0.055		mg P/L	P377494	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377126

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377127

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377305

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377372

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377325

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377326

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377426

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377417

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377516

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377587

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377588

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377465

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377494

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377541

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: P377305

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377372

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377325

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377326

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377426

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377417

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377516

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377587

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: P377588

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377465

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: P377494

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: P377541

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377305

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149217	Ammonia-N	97.3	99.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377372

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149220	Ammonia-N	98.2	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377325

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149104	Kjeldahl Nitrogen	102	109	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149212	Kjeldahl Nitrogen	101	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149241	Kjeldahl Nitrogen	109	99.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377417

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149231	NO2NO3-N	95.1	96.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149572	NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377587

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148957	NO2NO3-N	98.6	99.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377588

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149165	NO2NO3-N	99.8	99.4	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377465

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149102	Total-P	98.6	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148957	Total-P	98.1	97.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377541

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149216	Total-P	107	106	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377126

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149160	Turbidity	7.43	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377127

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149219	Turbidity	7.96	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149217	Ammonia-N	1.34	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377372

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149220	Ammonia-N	1.75	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149104	Kjeldahl Nitrogen	5.48	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149212	Kjeldahl Nitrogen	3.98	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149241	Kjeldahl Nitrogen	8.18	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149231	NO2NO3-N	0.692	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P377516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149572	NO2NO3-N	0.649	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P377587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148957	NO2NO3-N	0.477	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P377588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149165	NO2NO3-N	0.442	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P377465

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149102	Total-P	3.27	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P377494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148957	Total-P	0.245	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P377541

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149216	Total-P	0.912	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A96881

Included Lab Sample IDs: 2149207, 2149208, 2149209, 2149213, 2149214, 2149215, 2149219

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96950

Included Lab Sample IDs: 2149212, 2149216, 2149217, 2149218

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	101	P/P	90 - 110
Ammonia-N	101	99.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96974

Included Lab Sample IDs: 2149216, 2149217, 2149218

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96977

Included Lab Sample IDs: 2149210, 2149211, 2149220

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97036

Included Lab Sample IDs: 2149212

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97052

Included Lab Sample IDs: 2149210, 2149211, 2149212, 2149216, 2149217, 2149218

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.6	P/P	90 - 110
Kjeldahl Nitrogen	104	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97068

Included Lab Sample IDs: 2149210, 2149211, 2149220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	100	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97079

Included Lab Sample IDs: 2149220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97094

Included Lab Sample IDs: 2149210

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	108	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97098

Included Lab Sample IDs: 2149211, 2149212, 2149216, 2149217, 2149218, 2149220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	109	109	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					7.43	
	Turbidity					7.96	
EPA 350.1 Rev. 2.0	Ammonia-N	99.9	97.3	99.3			1.34
	Ammonia-N	99.8	98.2	100			1.75
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	102	109			5.48
	Kjeldahl Nitrogen	100	101	106			3.98
	Kjeldahl Nitrogen	101	109	99.3			8.18
EPA 353.2 Rev. 2.0	NO2NO3-N	95.5	95.1	96.1			0.692
	NO2NO3-N	102	102	104			0.649
	NO2NO3-N	100	98.6	99.1			0.477
	NO2NO3-N	100	99.8	99.4			0.442
EPA 365.1 Rev. 2.0	Total-P	103	98.6	102			3.27
	Total-P	101	98.1	97.9			0.245
	Total-P	104	107	106			0.912

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2149207, 2149208, 2149209, 2149213, 2149214, 2149215, 2149219
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2149210, 2149211, 2149212, 2149216, 2149217, 2149218, 2149220
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2149210, 2149211, 2149212, 2149216, 2149217, 2149218, 2149220
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2149210, 2149211, 2149212, 2149216, 2149217, 2149218, 2149220
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2149210, 2149211, 2149212, 2149216, 2149217, 2149218, 2149220

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	01/14/2020			01/14/2020 16:34	Yen Ta	2149207, 2149208, 2149209, 2149213, 2149214, 2149215, 2149219
EPA 350.1 Rev. 2.0	01/14/2020			01/16/2020 14:42	Ping Hua	2149217
	01/14/2020			01/16/2020 14:55	Ping Hua	2149212
	01/16/2020			01/16/2020 14:57	Ping Hua	2149216
	01/14/2020			01/16/2020 14:58	Ping Hua	2149218
	01/14/2020			01/17/2020 11:27	Ping Hua	2149220
	01/14/2020			01/17/2020 11:41	Ping Hua	2149210
	01/14/2020			01/17/2020 11:42	Ping Hua	2149211
EPA 351.2 Rev. 2.0	01/14/2020	01/17/2020 09:05	Jhamieka S. Greenwood	01/22/2020 16:01	Jhamieka S. Greenwood	2149210
	01/14/2020	01/17/2020 09:05	Jhamieka S. Greenwood	01/22/2020 16:02	Jhamieka S. Greenwood	2149211
	01/14/2020	01/17/2020 09:05	Jhamieka S. Greenwood	01/22/2020 16:10	Jhamieka S. Greenwood	2149212
	01/14/2020	01/17/2020 09:05	Jhamieka S. Greenwood	01/22/2020 16:17	Jhamieka S. Greenwood	2149216
	01/14/2020	01/17/2020 09:05	Jhamieka S. Greenwood	01/22/2020 16:18	Jhamieka S. Greenwood	2149217
	01/14/2020	01/17/2020 09:05	Jhamieka S. Greenwood	01/22/2020 16:20	Jhamieka S. Greenwood	2149218
	01/14/2020	01/21/2020 12:05	Jhamieka S. Greenwood	01/23/2020 12:16	Virginia P. Brown	2149220
EPA 353.2 Rev. 2.0	01/14/2020			01/17/2020 13:00	Beverly Y. Sanders	2149216
	01/14/2020			01/17/2020 13:02	Beverly Y. Sanders	2149217
	01/14/2020			01/17/2020 13:03	Beverly Y. Sanders	2149218
	01/14/2020			01/22/2020 11:36	Beverly Y. Sanders	2149212
	01/14/2020			01/23/2020 10:34	Beverly Y. Sanders	2149210
	01/14/2020			01/23/2020 10:35	Beverly Y. Sanders	2149211
	01/14/2020			01/23/2020 11:27	Beverly Y. Sanders	2149220
EPA 365.1 Rev. 2.0	01/14/2020	01/21/2020 14:26	Yen Ta	01/23/2020 13:45	Benjamin T. Nordmann	2149210
	01/14/2020	01/22/2020 14:24	Yen Ta	01/24/2020 13:34	Benjamin T. Nordmann	2149220
	01/14/2020	01/22/2020 14:24	Yen Ta	01/24/2020 13:37	Benjamin T. Nordmann	2149211
	01/14/2020	01/22/2020 14:24	Yen Ta	01/24/2020 13:38	Benjamin T. Nordmann	2149212
	01/14/2020	01/22/2020 14:24	Yen Ta	01/24/2020 13:51	Benjamin T. Nordmann	2149216
	01/14/2020	01/22/2020 14:24	Yen Ta	01/24/2020 13:52	Benjamin T. Nordmann	2149217
	01/14/2020	01/22/2020 14:24	Yen Ta	01/24/2020 13:53	Benjamin T. Nordmann	2149218