

Chemical Analysis Report

NW-DIST-2022-09-21-02

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Bayou Chico BMAP**
Request ID: **RQ-2022-09-19-10**
Customer: **NW-DIST**
Project ID: **BMAP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 308
Pensacola, FL 32502-5794
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Date Certified: 13-OCT-2022 11:35



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: Sanders Beach

Collection Date/Time: 09/19/2022 11:00

Field ID: 33020J10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2358020	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P419955	
2358021	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P420108	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P420128	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.010		mg N/L	P420298	
	EPA 365.1 Rev. 2.0	Total-P	0.077		mg P/L	P420228	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Equipment Blank

Collection Date/Time: 09/19/2022 11:25

Field ID: Equipment Blank

Matrix: W-EQPMT-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2358022	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P419955	
2358023	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P420309	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P420073	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P420318	MS
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P420132	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Mandalay Drive

Collection Date/Time: 09/19/2022 11:45

Field ID: 33020JD4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2358012	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P419955	
2358015	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P420108	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P420076	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P420298	
	EPA 365.1 Rev. 2.0	Total-P	0.039		mg P/L	P420133	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Jackson @ New Warrington

Collection Date/Time: 09/19/2022 13:20

Field ID: 33020222

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2358018	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P419955	
2358019	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P420310	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28		mg N/L	P420024	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.3		mg N/L	P420318	MS
	EPA 365.1 Rev. 2.0	Total-P	0.042		mg P/L	P419995	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Bayou Chico @ Navy Blvd. Bridge

Collection Date/Time: 09/19/2022 15:55

Field ID: 3302JE20

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2358013	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P419955	
2358016	EPA 350.1 Rev. 2.0	Ammonia-N	0.042		mg N/L	P420108	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P420076	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P420298	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P420133	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Bayou Chico @ "W" Street

Collection Date/Time: 09/19/2022 16:30

Field ID: 33020JF1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2358014	EPA 180.1 Rev. 2.0	Turbidity	6.4		NTU	P419955	
2358017	EPA 350.1 Rev. 2.0	Ammonia-N	0.055		mg N/L	P420108	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P420076	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.93		mg N/L	P420298	
	EPA 365.1 Rev. 2.0	Total-P	0.053		mg P/L	P420133	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419955

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420108

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420309

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420310

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420024

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420073

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420076

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420128

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420298

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: P420318

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419995

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420132

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420133

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420228

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419955

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420108

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420309

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420310

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420024

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420073

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420076

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420128

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420298

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420318

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419995

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420132

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: P420133

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: P420228

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420108

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358021	Ammonia-N	94.2	96.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420309

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357786	Ammonia-N	107	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420310

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357863	Ammonia-N	99.6	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420076

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358510	Kjeldahl Nitrogen	105	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420128

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358021	Kjeldahl Nitrogen	90.6	92.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357773	NO2NO3-N	104	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420318

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358045	NO2NO3-N	91.2	89.8	P/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419995

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358019	Total-P	109	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357994	Total-P	103	101	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420133

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358015	Total-P	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420228

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358631	Total-P	98.6	98.5	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420108

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358021	Ammonia-N	1.98	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357786	Ammonia-N	4.78	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357863	Ammonia-N	0.201	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420024

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357987	Kjeldahl Nitrogen	3.05	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357731	Kjeldahl Nitrogen	2.49	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358510	Kjeldahl Nitrogen	1.75	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358021	Kjeldahl Nitrogen	1.09	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357773	NO2NO3-N	2.36	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420318

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358045	NO2NO3-N	1.49	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419995

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358019	Total-P	2.20	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357994	Total-P	1.28	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420133

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358015	Total-P	1.18	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420228

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358631	Total-P	0.127	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: A114874

Included Lab Sample IDs: 2358012, 2358013, 2358014, 2358018, 2358020, 2358022

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114937

Included Lab Sample IDs: 2358019

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.2	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114938

Included Lab Sample IDs: 2358019

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A114942

Included Lab Sample IDs: 2358015, 2358016, 2358017, 2358021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114974

Included Lab Sample IDs: 2358023

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114995

Included Lab Sample IDs: 2358015, 2358016, 2358017, 2358023

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	99.2	P/P	90 - 110
Total-P	99.8	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A115009

Included Lab Sample IDs: 2358021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A115023

Included Lab Sample IDs: 2358015, 2358016, 2358017, 2358021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A115023

Included Lab Sample IDs: 2358015, 2358016, 2358017, 2358021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A115024

Included Lab Sample IDs: 2358021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.2	97.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A115028

Included Lab Sample IDs: 2358019, 2358023

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	98.6	P/P	90 - 110
Ammonia-N	98.6	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A115032

Included Lab Sample IDs: 2358019, 2358023

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	94.0	94.0	P/P	90 - 110
NO2NO3-N	98.0	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A115082

Included Lab Sample IDs: 2358015, 2358016, 2358017

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	104	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		Precision	
					LCS	SMP
EPA 180.1 Rev. 2.0	Turbidity	101				
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	94.2	96.8		1.98
	Ammonia-N	97.8	107	98.0		4.78
	Ammonia-N	97.8	99.6	99.4		0.201
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104				3.05
	Kjeldahl Nitrogen	102				2.49
	Kjeldahl Nitrogen	97.4	105	107		1.75
	Kjeldahl Nitrogen	107	90.6	92.1		1.09
EPA 353.2 Rev. 2.0	NO2NO3-N	103	104	101		2.36
	NO2NO3-N	101	91.2	89.8		1.49
EPA 365.1 Rev. 2.0	Total-P	105	109	107		2.20
	Total-P	102	103	101		1.28
	Total-P	103	100	102		1.18
	Total-P	105	98.6	98.5		0.127

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2358012, 2358013, 2358014, 2358018, 2358020, 2358022
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2358015, 2358016, 2358017, 2358019, 2358021, 2358023
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2358015, 2358016, 2358017, 2358019, 2358021, 2358023
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2358015, 2358016, 2358017, 2358019, 2358021, 2358023
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2358015, 2358016, 2358017, 2358019, 2358021, 2358023

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	09/21/2022			09/21/2022 10:04	Chandler E Cox	2358020
	09/21/2022			09/21/2022 10:07	Chandler E Cox	2358022
	09/21/2022			09/21/2022 10:08	Chandler E Cox	2358012
	09/21/2022			09/21/2022 10:09	Chandler E Cox	2358018
	09/21/2022			09/21/2022 10:10	Chandler E Cox	2358013
	09/21/2022			09/21/2022 10:11	Chandler E Cox	2358014
EPA 350.1 Rev. 2.0	09/21/2022			09/26/2022 11:33	Judith K. Clark	2358021
	09/21/2022			09/26/2022 11:45	Judith K. Clark	2358015
	09/21/2022			09/26/2022 11:46	Judith K. Clark	2358016
	09/21/2022			09/26/2022 11:48	Judith K. Clark	2358017
	09/21/2022			09/29/2022 12:52	Ping Hua	2358023
EPA 351.2 Rev. 2.0	09/21/2022			09/29/2022 13:18	Ping Hua	2358019
	09/21/2022	09/23/2022 11:15	Simonne.V. Calhoun	09/26/2022 12:30	Samantha L Bates	2358019
	09/21/2022	09/26/2022 10:38	Alexandra J Mattheus	09/27/2022 11:07	Alexandra J Mattheus	2358023
	09/21/2022	09/26/2022 13:48	Alexandra J Mattheus	10/03/2022 10:03	Samantha L Bates	2358015
	09/21/2022	09/26/2022 13:48	Alexandra J Mattheus	10/03/2022 10:08	Samantha L Bates	2358016
	09/21/2022	09/26/2022 13:48	Alexandra J Mattheus	10/03/2022 10:09	Samantha L Bates	2358017
EPA 353.2 Rev. 2.0	09/21/2022	09/27/2022 14:11	Samantha L Bates	09/28/2022 15:03	Samantha L Bates	2358021
	09/21/2022			09/28/2022 17:00	Touraj Touran	2358015
	09/21/2022			09/28/2022 17:01	Touraj Touran	2358016
	09/21/2022			09/28/2022 17:55	Touraj Touran	2358017
	09/21/2022			09/28/2022 17:56	Touraj Touran	2358021
	09/21/2022			09/29/2022 13:48	Judith K. Clark	2358023
EPA 365.1 Rev. 2.0	09/21/2022			09/29/2022 16:24	Judith K. Clark	2358019
	09/21/2022	09/23/2022 12:15	Adam P Silver	09/26/2022 09:43	Simonne.V. Calhoun	2358019
	09/21/2022	09/27/2022 14:20	Simonne.V. Calhoun	09/28/2022 12:43	James L Waggeberby	2358023
	09/21/2022	09/27/2022 14:20	Simonne.V. Calhoun	09/28/2022 12:58	James L Waggeberby	2358015
	09/21/2022	09/27/2022 14:20	Simonne.V. Calhoun	09/28/2022 12:59	James L Waggeberby	2358016
	09/21/2022	09/27/2022 14:20	Simonne.V. Calhoun	09/28/2022 13:00	James L Waggeberby	2358017
	09/21/2022	09/28/2022 14:15	Simonne.V. Calhoun	09/29/2022 11:47	James L Waggeberby	2358021