

Chemical Analysis Report

NW-DIST-2023-02-14-01

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

Event Description: **Project GreenShores Quarterly Sampling**
Request ID: **RQ-2023-02-13-02**
Customer: **NW-DIST**
Project ID: **DISTRICT**

Send Reports to:
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160 Government Center
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 09-MAR-2023 14:30



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: Range Marker East of Bayou Texar

Collection Date/Time: 02/13/2023 10:21

Field ID: 1			Matrix: W-SURF-SLT					
Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes	
2386963	DEP SOP: NU-094-1	Color (true)	12		PCU	P425786		
	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P425793		
	SM 2540 D-2015	TSS	4	I	mg/L	P426315		
2386977	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P426155		
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25	I	mg N/L	P425915		
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.064		mg N/L	P426010		
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P425931		

Sample Location: Midpoint Between Bay Bridge and Muscogee Wharf

Collection Date/Time: 02/13/2023 10:36

Field ID: 2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2386964	DEP SOP: NU-094-1	Color (true)	12		PCU	P425786	
	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P425793	
	SM 2540 D-2015	TSS	3	U	mg/L	P426315	
2386978	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P426155	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P425915	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.056		mg N/L	P426010	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P425931	

Sample Location: East End of Primary Storm drain

Collection Date/Time: 02/13/2023 12:33

Field ID: 3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2386965	DEP SOP: NU-094-1	Color (true)	11		PCU	P425786	
	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P425793	
	SM 2540 D-2015	TSS	3	U	mg/L	P426315	
2386979	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P426155	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25	I	mg N/L	P425915	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.061		mg N/L	P426010	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P425931	

Sample Location: South of Primary Storm drain

Collection Date/Time: 02/13/2023 12:25

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2386966	DEP SOP: NU-094-1	Color (true)	12		PCU	P425786	
	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P425793	
	SM 2540 D-2015	TSS	3	U	mg/L	P426315	
2386980	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P426155	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25	I	mg N/L	P425915	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.061		mg N/L	P426010	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P425931	

Sample Location: End of Chase St

Collection Date/Time: 02/13/2023 12:10

Field ID: 5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2386967	DEP SOP: NU-094-1	Color (true)	11		PCU	P425786	
	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P425793	
	SM 2540 D-2015	TSS	3	U	mg/L	P426315	
2386981	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P426155	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28	I	mg N/L	P425915	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.059		mg N/L	P426010	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P425933	

Sample Location: Midpoint between Muscogee and Hawkshaw Collection Date/Time: 02/13/2023 12:04

Field ID: 6 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2386968	DEP SOP: NU-094-1	Color (true)	11	A	PCU	P425787	
	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P425793	
	SM 2540 D-2015	TSS	5	I	mg/L	P426315	
2386982	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P426163	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24	I	mg N/L	P425915	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.062		mg N/L	P426010	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P425933	

Sample Location: Midpoint between bridge and Port Spoil Pond Collection Date/Time: 02/13/2023 10:44

Field ID: 7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2386969	DEP SOP: NU-094-1	Color (true)	11		PCU	P425787	
	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P425793	
	SM 2540 D-2015	TSS	3	U	mg/L	P426315	
2386983	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P426163	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27	I	mg N/L	P425915	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.062		mg N/L	P426011	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P425933	

Sample Location: West of Primary Storm drain

Collection Date/Time: 02/13/2023 12:17

Field ID: 8			Matrix: W-SURF-SLT					
Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes	
2386970	DEP SOP: NU-094-1	Color (true)	9.7		PCU	P425787		
	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P425793		
	SM 2540 D-2015	TSS	3	U	mg/L	P426315		
2386984	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P426163		
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P425915		
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.074		mg N/L	P426011		
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P425933		

Sample Location: West of Hawkshaw Lagoon

Collection Date/Time: 02/13/2023 11:22

Field ID: 9

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2386971	DEP SOP: NU-094-1	Color (true)	10		PCU	P425787	
	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P425793	
	SM 2540 D-2015	TSS	3	U	mg/L	P426315	
2386985	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P426163	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P425917	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.091		mg N/L	P426011	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P425933	

Sample Location: South of Bayfront Storm drain

Collection Date/Time: 02/13/2023 11:14

Field ID: 10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2386972	DEP SOP: NU-094-1	Color (true)	12		PCU	P425787	
	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P425793	
	SM 2540 D-2015	TSS	3	U	mg/L	P426315	
2386986	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P426163	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25	I	mg N/L	P425917	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.064		mg N/L	P426011	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P425933	

Sample Location: Seville Marina Inlet

Collection Date/Time: 02/13/2023 11:03

Field ID: 11			Matrix: W-SURF-SLT					
Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes	
2386973	DEP SOP: NU-094-1	Color (true)	10		PCU	P425787		
	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P425793		
	SM 2540 D-2015	TSS	3	U	mg/L	P426315		
2386987	EPA 350.1 Rev. 2.0	Ammonia-N	0.035		mg N/L	P426163		
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38	I	mg N/L	P425917		
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.092		mg N/L	P426011		
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P425933		

Sample Location: Seville Marina Inlet

Collection Date/Time: 02/13/2023 11:06

Field ID: 11

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2386991	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P425787	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P425793	
	SM 2540 D-2015	TSS	2	U	mg/L	P426314	
2386992	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P426176	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P425913	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P425944	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P425932	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of analytical difficulties.

Sample Location: East of Port Spoil Pond

Collection Date/Time: 02/13/2023 10:52

Field ID: 12

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2386974	DEP SOP: NU-094-1	Color (true)	12		PCU	P425787	
	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P425793	
	SM 2540 D-2015	TSS	3	U	mg/L	P426315	
2386988	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P426163	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24	I	mg N/L	P425917	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.058		mg N/L	P426011	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P425933	

Sample Location: Hawkshaw Lagoon at Memorial Bridge

Collection Date/Time: 02/13/2023 11:38

Field ID: 13

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2386975	DEP SOP: NU-094-1	Color (true)	7.2		PCU	P425787	
	EPA 180.1 Rev. 2.0	Turbidity	0.70	I	NTU	P425793	
	SM 2540 D-2015	TSS	2	U	mg/L	P426314	
2386989	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P426163	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29	I	mg N/L	P425917	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P426011	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P425933	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of analytical difficulties.

Sample Location: 150 ft South of Hawkshaw Lagoon East Storm drain Collection Date/Time: 02/13/2023 11:53

Field ID: 14 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2386976	DEP SOP: NU-094-1	Color (true)	9.3		PCU	P425787	
	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P425793	
	SM 2540 D-2015	TSS	3	U	mg/L	P426315	
2386990	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P426163	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P425917	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.096		mg N/L	P426011	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P425933	

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P425786

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P425787

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P425793

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426155

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426163

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426176

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425913

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425915

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425917

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425944

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426010

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426011

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425931

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425932

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425933

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

Reference Method: SM 2540 D-2015
Batch ID: P426314

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P426315

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P425786

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	104		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P425787

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P425793

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426155

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426163

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426176

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425913

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: P425915

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425917

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425944

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: P426010

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: P426011

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425931

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: P425932

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: P425933

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

Reference Method: SM 2540 D-2015
Batch ID: P426314

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	90.7		P	85 - 106

Reference Method: SM 2540 D-2015
Batch ID: P426315

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	102		P	85 - 106

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426155

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386977	Ammonia-N	99.0	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426163

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386982	Ammonia-N	103	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426176

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386838	Ammonia-N	97.8	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425913

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386921	Kjeldahl Nitrogen	92.3	114	P/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425915

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386984	Kjeldahl Nitrogen	98.1	97.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425917

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386990	Kjeldahl Nitrogen	96.6	95.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425944

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386921	NO2NO3-N	94.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426010

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386745	NO2NO3-N	98.0	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426011

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386983	NO2NO3-N	103	104	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425931

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386977	Total-P	97.8	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425932

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2387087	Total-P	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425933

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386986	Total-P	102	101	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P425786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386878	Color (true)	4.64	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P425787

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386968	Color (true)	2.71	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P425793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386877	Turbidity	2.80	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426155

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386977	Ammonia-N	2.08	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426163

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386982	Ammonia-N	1.25	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426176

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386838	Ammonia-N	0.821	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425913

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386921	Kjeldahl Nitrogen	12.6	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386984	Kjeldahl Nitrogen	0.736	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425917

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386990	Kjeldahl Nitrogen	0.771	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386921	NO2NO3-N	0.380	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386745	NO2NO3-N	5.19	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386983	NO2NO3-N	0.372	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425931

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386977	Total-P	2.37	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425932

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2387087	Total-P	0.0462	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425933

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386986	Total-P	0.691	Spike	P	0 - 20

Reference Method: SM 2540 D-2015
Batch ID: P426315

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386900	TSS	4.44	Sample	P	0 - 10

Quality Assurance Report Precision

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

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A117435

Included Lab Sample IDs: 2386963, 2386964, 2386965, 2386966, 2386967, 2386968, 2386969, 2386970, 2386971, 2386972, 2386973, 2386974, 2386975, 2386976, 2386991

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	101	P/P	90 - 110
Color (true)	99.4	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A117437

Included Lab Sample IDs: 2386963, 2386964, 2386965, 2386966, 2386967, 2386968, 2386969, 2386970, 2386971, 2386972, 2386973, 2386974, 2386975, 2386976, 2386991

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	101	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A117480

Included Lab Sample IDs: 2386992

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A117514

Included Lab Sample IDs: 2386977, 2386978, 2386979, 2386980, 2386981, 2386982, 2386983, 2386984, 2386985, 2386986, 2386987, 2386988, 2386989, 2386990

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: A117566

Included Lab Sample IDs: 2386977, 2386978, 2386979, 2386980, 2386981, 2386992

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.2	96.8	P/P	90 - 110
Ammonia-N	98.6	98.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117568

Included Lab Sample IDs: 2386982, 2386983, 2386984, 2386985, 2386986, 2386987, 2386988, 2386989, 2386990

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117570

Included Lab Sample IDs: 2386977, 2386978, 2386979, 2386980, 2386981, 2386982, 2386983, 2386984, 2386985, 2386986, 2386987, 2386988, 2386989, 2386990, 2386992

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	102	P/P	90 - 110
Total-P	102	103	P/P	90 - 110
Total-P	103	102	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117625

Included Lab Sample IDs: 2386977, 2386978, 2386979, 2386980, 2386981, 2386982, 2386983, 2386984, 2386985, 2386986, 2386987, 2386988, 2386989, 2386990, 2386992

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	103	P/P	90 - 110
Kjeldahl Nitrogen	103	97.6	P/P	90 - 110
Kjeldahl Nitrogen	106	101	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	MS
DEP SOP: NU-094-1	Color (true)	104			4.64	
	Color (true)	100			2.71	
EPA 180.1 Rev. 2.0	Turbidity	102			2.80	
EPA 350.1 Rev. 2.0	Ammonia-N	95.2	99.0	102		2.08
	Ammonia-N	101	103	104		1.25
	Ammonia-N	97.0	97.8	97.0		0.821
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	92.3	114		12.6
	Kjeldahl Nitrogen	101	98.1	97.3		0.736
	Kjeldahl Nitrogen	95.2	96.6	95.7		0.771
EPA 353.2 Rev. 2.0	NO2NO3-N	102	94.2			0.380
	NO2NO3-N	102	98.0	104		5.19
	NO2NO3-N	103	103	104		0.372
EPA 365.1 Rev. 2.0	Total-P	102	97.8	100		2.37
	Total-P	104	103	103		0.0462
	Total-P	100	102	101		0.691
SM 2540 D-2015	TSS	90.7				
	TSS	102			4.44	

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2386963, 2386964, 2386965, 2386966, 2386967, 2386968, 2386969, 2386970, 2386971, 2386972, 2386973, 2386974, 2386975, 2386976, 2386991
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2386963, 2386964, 2386965, 2386966, 2386967, 2386968, 2386969, 2386970, 2386971, 2386972, 2386973, 2386974, 2386975, 2386976, 2386991
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2386977, 2386978, 2386979, 2386980, 2386981, 2386982, 2386983, 2386984, 2386985, 2386986, 2386987, 2386988, 2386989, 2386990, 2386992
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2386977, 2386978, 2386979, 2386980, 2386981, 2386982, 2386983, 2386984, 2386985, 2386986, 2386987, 2386988, 2386989, 2386990, 2386992
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2386977, 2386978, 2386979, 2386980, 2386981, 2386982, 2386983, 2386984, 2386985, 2386986, 2386987, 2386988, 2386989, 2386990, 2386992
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2386977, 2386978, 2386979, 2386980, 2386981, 2386982, 2386983, 2386984, 2386985, 2386986, 2386987, 2386988, 2386989, 2386990, 2386992
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2386963, 2386964, 2386965, 2386966, 2386967, 2386968, 2386969, 2386970, 2386971, 2386972, 2386973, 2386974, 2386975, 2386976, 2386991

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	02/14/2023			02/14/2023 14:36	Alexis Price	2386968
	02/14/2023			02/14/2023 14:37	Alexis Price	2386969
	02/14/2023			02/14/2023 14:38	Alexis Price	2386970
	02/14/2023			02/14/2023 14:39	Alexis Price	2386971, 2386972
	02/14/2023			02/14/2023 14:40	Alexis Price	2386973
	02/14/2023			02/14/2023 14:41	Alexis Price	2386974
	02/14/2023			02/14/2023 14:42	Alexis Price	2386975, 2386976
	02/14/2023			02/14/2023 14:43	Alexis Price	2386991
	02/14/2023			02/14/2023 15:21	Alexis Price	2386963
	02/14/2023			02/14/2023 15:22	Alexis Price	2386964
	02/14/2023			02/14/2023 15:23	Alexis Price	2386965
	02/14/2023			02/14/2023 15:24	Alexis Price	2386966, 2386967
	02/14/2023			02/14/2023 14:41	Anna M. Plaviak	2386963
EPA 180.1 Rev. 2.0	02/14/2023			02/14/2023 14:42	Anna M. Plaviak	2386964, 2386965
	02/14/2023			02/14/2023 14:43	Anna M. Plaviak	2386966, 2386967
	02/14/2023			02/14/2023 14:44	Anna M. Plaviak	2386968
	02/14/2023			02/14/2023 14:45	Anna M. Plaviak	2386969
	02/14/2023			02/14/2023 14:46	Anna M. Plaviak	2386970, 2386971, 2386972
	02/14/2023			02/14/2023 14:47	Anna M. Plaviak	2386973, 2386974
	02/14/2023			02/14/2023 14:48	Anna M. Plaviak	2386975, 2386976
	02/14/2023			02/14/2023 14:49	Anna M. Plaviak	2386991
EPA 350.1 Rev. 2.0	02/14/2023			02/21/2023 10:15	Ping Hua	2386977
	02/14/2023			02/21/2023 10:26	Khloe J Berg	2386982
	02/14/2023			02/21/2023 10:26	Ping Hua	2386978
	02/14/2023			02/21/2023 10:27	Ping Hua	2386979
	02/14/2023			02/21/2023 10:28	Ping Hua	2386980
	02/14/2023			02/21/2023 10:30	Khloe J Berg	2386983
	02/14/2023			02/21/2023 10:30	Ping Hua	2386981
	02/14/2023			02/21/2023 10:31	Khloe J Berg	2386984
	02/14/2023			02/21/2023 10:32	Khloe J Berg	2386985
	02/14/2023			02/21/2023 10:34	Khloe J Berg	2386986
	02/14/2023			02/21/2023 10:35	Khloe J Berg	2386987
	02/14/2023			02/21/2023 10:36	Khloe J Berg	2386988
	02/14/2023			02/21/2023 10:38	Khloe J Berg	2386989
	02/14/2023			02/21/2023 10:39	Khloe J Berg	2386990
	02/14/2023			02/21/2023 12:51	Ping Hua	2386992
EPA 351.2 Rev. 2.0	02/14/2023	02/16/2023 11:00	Simonne.V. Calhoun	02/23/2023 12:12	Judith K. Clark	2386977
	02/14/2023	02/16/2023 11:00	Simonne.V. Calhoun	02/23/2023 12:14	Judith K. Clark	2386978
	02/14/2023	02/16/2023 11:00	Simonne.V. Calhoun	02/23/2023 12:15	Judith K. Clark	2386979
	02/14/2023	02/16/2023 11:00	Simonne.V. Calhoun	02/23/2023 12:17	Judith K. Clark	2386980

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 351.2 Rev. 2.0	02/14/2023	02/16/2023 11:00	Simonne.V. Calhoun	02/23/2023 12:19	Judith K. Clark	2386981
	02/14/2023	02/16/2023 11:00	Simonne.V. Calhoun	02/23/2023 12:20	Judith K. Clark	2386982
	02/14/2023	02/16/2023 11:00	Simonne.V. Calhoun	02/23/2023 12:22	Judith K. Clark	2386983
	02/14/2023	02/16/2023 11:00	Simonne.V. Calhoun	02/23/2023 12:23	Judith K. Clark	2386984
	02/14/2023	02/16/2023 11:00	Simonne.V. Calhoun	02/23/2023 12:35	Judith K. Clark	2386985
	02/14/2023	02/16/2023 11:00	Simonne.V. Calhoun	02/23/2023 12:36	Judith K. Clark	2386986
	02/14/2023	02/16/2023 11:00	Simonne.V. Calhoun	02/23/2023 12:38	Judith K. Clark	2386987
	02/14/2023	02/16/2023 11:00	Simonne.V. Calhoun	02/23/2023 12:40	Judith K. Clark	2386988
	02/14/2023	02/16/2023 11:00	Simonne.V. Calhoun	02/23/2023 12:41	Judith K. Clark	2386989
	02/14/2023	02/16/2023 11:00	Simonne.V. Calhoun	02/23/2023 12:43	Judith K. Clark	2386990
EPA 353.2 Rev. 2.0	02/14/2023	02/16/2023 11:30	Simonne.V. Calhoun	02/23/2023 11:53	Judith K. Clark	2386992
	02/14/2023			02/16/2023 10:40	Beverly Y. Sanders	2386992
	02/14/2023			02/17/2023 10:14	Beverly Y. Sanders	2386977
	02/14/2023			02/17/2023 10:16	Beverly Y. Sanders	2386978
	02/14/2023			02/17/2023 10:17	Beverly Y. Sanders	2386979
	02/14/2023			02/17/2023 10:18	Beverly Y. Sanders	2386980
	02/14/2023			02/17/2023 10:19	Beverly Y. Sanders	2386981
	02/14/2023			02/17/2023 10:20	Beverly Y. Sanders	2386982
	02/14/2023			02/17/2023 10:27	Beverly Y. Sanders	2386983
	02/14/2023			02/17/2023 10:33	Beverly Y. Sanders	2386984
	02/14/2023			02/17/2023 10:35	Beverly Y. Sanders	2386985
	02/14/2023			02/17/2023 10:36	Beverly Y. Sanders	2386986
	02/14/2023			02/17/2023 10:37	Beverly Y. Sanders	2386987
	02/14/2023			02/17/2023 10:38	Beverly Y. Sanders	2386988
EPA 365.1 Rev. 2.0	02/14/2023			02/17/2023 10:39	Beverly Y. Sanders	2386989
	02/14/2023			02/17/2023 10:40	Beverly Y. Sanders	2386990
	02/14/2023	02/16/2023 16:29	Adam P Silver	02/21/2023 11:55	Simonne.V. Calhoun	2386977
	02/14/2023	02/16/2023 16:29	Adam P Silver	02/21/2023 12:00	Simonne.V. Calhoun	2386978
	02/14/2023	02/16/2023 16:29	Adam P Silver	02/21/2023 12:01	Simonne.V. Calhoun	2386979
	02/14/2023	02/16/2023 16:29	Adam P Silver	02/21/2023 12:02	Simonne.V. Calhoun	2386980
	02/14/2023	02/16/2023 16:29	Adam P Silver	02/21/2023 12:13	Simonne.V. Calhoun	2386992
	02/14/2023	02/16/2023 16:29	Adam P Silver	02/21/2023 12:17	Simonne.V. Calhoun	2386986
	02/14/2023	02/16/2023 16:29	Adam P Silver	02/21/2023 12:18	Simonne.V. Calhoun	2386981
	02/14/2023	02/16/2023 16:29	Adam P Silver	02/21/2023 12:26	Simonne.V. Calhoun	2386982
	02/14/2023	02/16/2023 16:29	Adam P Silver	02/21/2023 12:27	Simonne.V. Calhoun	2386983
	02/14/2023	02/16/2023 16:29	Adam P Silver	02/21/2023 12:28	Simonne.V. Calhoun	2386984
	02/14/2023	02/16/2023 16:29	Adam P Silver	02/21/2023 12:29	Simonne.V. Calhoun	2386985
	02/14/2023	02/16/2023 16:29	Adam P Silver	02/21/2023 12:30	Simonne.V. Calhoun	2386987
	02/14/2023	02/16/2023 16:29	Adam P Silver	02/21/2023 12:31	Simonne.V. Calhoun	2386988
	02/14/2023	02/16/2023 16:29	Adam P Silver	02/21/2023 12:32	Simonne.V. Calhoun	2386989

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0	02/14/2023	02/16/2023 16:29	Adam P Silver	02/21/2023 12:33	Simonne.V. Calhoun	2386990
SM 2540 D-2015	02/14/2023			02/17/2023 15:46	Yijie Li	2386963, 2386964, 2386965, 2386966, 2386967, 2386968, 2386969, 2386970, 2386971, 2386972, 2386973, 2386974, 2386975, 2386976, 2386991