

Chemical Analysis Report

NW-DIST-2023-11-14-01

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

Event Description: **Project Greenshores**
Request ID: **RQ-2023-11-13-47**
Customer: **NW-DIST**
Project ID: **DISTRICT**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Myranda K Butler

For additional information please contact
Colin Wright, Ph.D.
Chris Bowen, B.S.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Chris Bowen, Environmental Administrator

Date Certified: 30-NOV-2023 09:25



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: 11/13/2023 10:20

Field ID: 1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451090	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P437751	
	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P437755	
	SM 2540 D-2015	TSS	6	I	mg/L	P438204	
2451104	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P438068	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20	I	mg N/L	P437759	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.042		mg N/L	P438186	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P437863	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Midpoint between Bay Bridge and Muscogee Wharf

Collection Date/Time: 11/13/2023 10:30

Field ID: 2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451091	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P437751	
	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P437755	
	SM 2540 D-2015	TSS	5	I	mg/L	P438204	
2451105	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P438068	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22	I	mg N/L	P437759	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.061		mg N/L	P438186	
	EPA 365.1 Rev. 2.0	Total-P	0.01	I	mg P/L	P437863	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: East end of primary Stormdrain

Collection Date/Time: 11/13/2023 10:40

Field ID: 3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451092	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P437751	
	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P437755	
	SM 2540 D-2015	TSS	5	I	mg/L	P438204	
2451106	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P438068	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21	I	mg N/L	P437759	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.028		mg N/L	P438186	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P437863	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: South of primary Stormdrain

Collection Date/Time: 11/13/2023 10:47

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451093	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P437751	
	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P437755	
	SM 2540 D-2015	TSS	8	I	mg/L	P438204	
2451107	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P438239	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25	I	mg N/L	P437759	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P438186	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P437863	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: End of Chase Street

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

Field ID: 5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451094	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P437751	
	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P437755	
	SM 2540 D-2015	TSS	7	I	mg/L	P438204	
2451108	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P438239	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.17	I	mg N/L	P437759	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.030		mg N/L	P438186	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P437863	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Midpoint between Muscogee and Hawkshaw

Collection Date/Time: 11/13/2023 11:07

Field ID: 6

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451095	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P437751	
	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P437756	
	SM 2540 D-2015	TSS	6	I	mg/L	P438204	
2451109	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P438239	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28	I	mg N/L	P437759	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.052		mg N/L	P438186	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P437863	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Midpoint between Bridge and Port Spoil Pond Collection Date/Time: 11/13/2023 11:15

Field ID: 7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451096	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P437752	
	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P437756	
	SM 2540 D-2015	TSS	6	I	mg/L	P438204	
2451110	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P438239	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28	I	mg N/L	P437759	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.033		mg N/L	P438186	
	EPA 365.1 Rev. 2.0	Total-P	0.01	I	mg P/L	P437864	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of analytical difficulties.

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: West of primary Stormdrain

Collection Date/Time: 11/13/2023 10:54

Field ID: 8

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451097	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P437752	
	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P437756	
	SM 2540 D-2015	TSS	12		mg/L	P438204	
2451111	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P438239	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P437761	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P438186	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P437864	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of analytical difficulties.

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: West of Hawkshaw Lagoon

Collection Date/Time: 11/13/2023 11:46

Field ID: 9

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451098	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P437752	
	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P437756	
	SM 2540 D-2015	TSS	7	I	mg/L	P438204	
2451112	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P438240	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22	I	mg N/L	P437761	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.029		mg N/L	P438186	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P437864	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of analytical difficulties.

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: South of Bayfront Stormdrain

Collection Date/Time: 11/13/2023 11:39

Field ID: 10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451099	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P437752	
	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P437756	
	SM 2540 D-2015	TSS	5	I	mg/L	P438204	
2451113	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P438240	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20	I	mg N/L	P437761	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.040		mg N/L	P438183	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P437864	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of analytical difficulties.

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Seville Marina Inlet

Collection Date/Time: 11/13/2023 11:32

Field ID: 11

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451100	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P437752	
	EPA 180.1 Rev. 2.0	Turbidity	0.90	I	NTU	P437756	
	SM 2540 D-2015	TSS	5	I	mg/L	P438204	
2451114	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P438240	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P437761	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.32		mg N/L	P438183	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P437864	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of analytical difficulties.

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: East of Port Spoil Pond

Collection Date/Time: 11/13/2023 11:25

Field ID: 12

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451101	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P437752	
	EPA 180.1 Rev. 2.0	Turbidity	0.90	I	NTU	P437756	
	SM 2540 D-2015	TSS	6	I	mg/L	P438204	
2451115	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P438240	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.19	I	mg N/L	P437761	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P438183	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P437864	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of analytical difficulties.

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Hawkshaw Lagoon at Memorial Bridge

Collection Date/Time: 11/13/2023 12:03

Field ID: 13

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451102	DEP SOP: NU-094-1	Color (true)	7.1		PCU	P437752	
	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P437756	
	SM 2540 D-2015	TSS	4	I	mg/L	P438204	
2451116	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P438240	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P437761	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P438183	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P437864	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of analytical difficulties.

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

**Sample Location: 150ft South of Hawkshaw Lagoon East
Stormdrain**

Collection Date/Time: 11/13/2023 12:16

Field ID: 14

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451103	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P437752	
	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P437754	
	SM 2540 D-2015	TSS	8	I	mg/L	P438204	
2451117	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P438240	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20	I	mg N/L	P437761	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P438183	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P437864	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of analytical difficulties.

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P437751

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P437752

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437754

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437755

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437756

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438068

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438239

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438240

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437759

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437761

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438183

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438186

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437863

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437864

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

Reference Method: SM 2540 D-2015
Batch ID: P438204

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: P437751

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P437752

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437754

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437755

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437756

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438068

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438239

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438240

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	93.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437759

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437761

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: P438183

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: P438186

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: P437863

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437864

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

Reference Method: SM 2540 D-2015
Batch ID: P438204

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	111		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438068

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450903	Ammonia-N	96.6	97.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438239

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450242	Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2451112	Ammonia-N	101	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437759

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450890	Kjeldahl Nitrogen	91.7	93.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437761

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2451116	Kjeldahl Nitrogen	99.9	97.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438183

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2451113	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438186

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2451104	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437863

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2451104	Total-P	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437864

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2451112	Total-P	99.6	99.5	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P437751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450967	Color (true)	4.17	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450735	Turbidity	4.57	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437755

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450884	Turbidity	11.6	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437756

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2451141	Turbidity	5.12	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438068

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450903	Ammonia-N	0.493	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438239

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450242	Ammonia-N	1.50	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2451112	Ammonia-N	1.71	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437759

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450890	Kjeldahl Nitrogen	1.43	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437761

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2451116	Kjeldahl Nitrogen	2.69	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438183

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2451113	NO2NO3-N	0.826	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438186

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2451104	NO2NO3-N	1.63	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437863

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2451104	Total-P	0.664	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437864

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2451112	Total-P	0.126	Spike	P	0 - 20

* 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: A122707

Included Lab Sample IDs: 2451090, 2451091, 2451092, 2451093, 2451094, 2451095, 2451096, 2451097, 2451098, 2451099, 2451100, 2451101, 2451102, 2451103

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 110
Color (true)	103	104	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A122708

Included Lab Sample IDs: 2451090, 2451091, 2451092, 2451093, 2451094, 2451095, 2451096, 2451097, 2451098, 2451099, 2451100, 2451101, 2451102, 2451103

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122765

Included Lab Sample IDs: 2451104, 2451105, 2451106, 2451107, 2451108, 2451109, 2451110

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.5	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122776

Included Lab Sample IDs: 2451111, 2451112, 2451113, 2451114, 2451115, 2451116, 2451117

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	106	P/P	90 - 110
Kjeldahl Nitrogen	106	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122797

Included Lab Sample IDs: 2451104, 2451105, 2451106, 2451107, 2451108, 2451109, 2451110, 2451111, 2451112, 2451113, 2451114, 2451115, 2451116, 2451117

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	100	P/P	90 - 110
Total-P	101	101	P/P	90 - 110
Total-P	99.2	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122831

Included Lab Sample IDs: 2451104, 2451105, 2451106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.1	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122891

Included Lab Sample IDs: 2451104, 2451105, 2451106, 2451107, 2451108, 2451109, 2451110, 2451111, 2451112, 2451113, 2451114, 2451115, 2451116, 2451117

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

Quality Assurance Report

Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122891

Included Lab Sample IDs: 2451104, 2451105, 2451106, 2451107, 2451108, 2451109, 2451110, 2451111, 2451112, 2451113, 2451114, 2451115, 2451116, 2451117

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122914

Included Lab Sample IDs: 2451107, 2451108, 2451109, 2451110, 2451111, 2451112, 2451113, 2451114, 2451115, 2451116, 2451117

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.8	P/P	90 - 110
Ammonia-N	100	100	P/P	90 - 110
Ammonia-N	100	100	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)	102			4.17	
	Color (true)	102				
EPA 180.1 Rev. 2.0	Turbidity	104			4.57	
	Turbidity	105			11.6	
	Turbidity	104			5.12	
EPA 350.1 Rev. 2.0	Ammonia-N	96.6	96.6	97.2		0.493
	Ammonia-N	95.0	100	102		1.50
	Ammonia-N	93.0	101	103		1.71
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	91.7	93.2		1.43
	Kjeldahl Nitrogen	101	99.9	97.0		2.69
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	101		0.826
	NO2NO3-N	101	100	102		1.63
EPA 365.1 Rev. 2.0	Total-P	106	101	102		0.664
	Total-P	104	99.6	99.5		0.126
SM 2540 D-2015	TSS	111				

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2451090, 2451091, 2451092, 2451093, 2451094, 2451095, 2451096, 2451097, 2451098, 2451099, 2451100, 2451101, 2451102, 2451103
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2451090, 2451091, 2451092, 2451093, 2451094, 2451095, 2451096, 2451097, 2451098, 2451099, 2451100, 2451101, 2451102, 2451103
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2451104, 2451105, 2451106, 2451107, 2451108, 2451109, 2451110, 2451111, 2451112, 2451113, 2451114, 2451115, 2451116, 2451117
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2451104, 2451105, 2451106, 2451107, 2451108, 2451109, 2451110, 2451111, 2451112, 2451113, 2451114, 2451115, 2451116, 2451117
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2451104, 2451105, 2451106, 2451107, 2451108, 2451109, 2451110, 2451111, 2451112, 2451113, 2451114, 2451115, 2451116, 2451117
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2451104, 2451105, 2451106, 2451107, 2451108, 2451109, 2451110, 2451111, 2451112, 2451113, 2451114, 2451115, 2451116, 2451117
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2451090, 2451091, 2451092, 2451093, 2451094, 2451095, 2451096, 2451097, 2451098, 2451099, 2451100, 2451101, 2451102, 2451103

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	11/14/2023			11/14/2023 15:22	Chandler E Cox	2451090
	11/14/2023			11/14/2023 15:23	Chandler E Cox	2451091
	11/14/2023			11/14/2023 15:24	Chandler E Cox	2451092
	11/14/2023			11/14/2023 15:25	Chandler E Cox	2451093, 2451094
	11/14/2023			11/14/2023 15:26	Chandler E Cox	2451095
	11/14/2023			11/14/2023 15:30	Chandler E Cox	2451096
	11/14/2023			11/14/2023 15:31	Chandler E Cox	2451097, 2451098
	11/14/2023			11/14/2023 15:32	Chandler E Cox	2451099
	11/14/2023			11/14/2023 15:33	Chandler E Cox	2451100, 2451101
	11/14/2023			11/14/2023 15:34	Chandler E Cox	2451102
	11/14/2023			11/14/2023 15:35	Chandler E Cox	2451103
EPA 180.1 Rev. 2.0	11/14/2023			11/14/2023 13:24	Samantha L Bates	2451103
	11/14/2023			11/14/2023 14:20	Samantha L Bates	2451090
	11/14/2023			11/14/2023 14:22	Samantha L Bates	2451091
	11/14/2023			11/14/2023 14:23	Samantha L Bates	2451092
	11/14/2023			11/14/2023 14:24	Samantha L Bates	2451093
	11/14/2023			11/14/2023 14:26	Samantha L Bates	2451094
	11/14/2023			11/14/2023 14:41	Samantha L Bates	2451095
	11/14/2023			11/14/2023 14:43	Samantha L Bates	2451096, 2451097
	11/14/2023			11/14/2023 14:45	Samantha L Bates	2451098
	11/14/2023			11/14/2023 14:46	Samantha L Bates	2451099
	11/14/2023			11/14/2023 14:47	Samantha L Bates	2451100
	11/14/2023			11/14/2023 14:48	Samantha L Bates	2451101
	11/14/2023			11/14/2023 14:49	Samantha L Bates	2451102
	11/14/2023			11/20/2023 12:33	Khloe J Berg	2451104
EPA 350.1 Rev. 2.0	11/14/2023			11/20/2023 12:34	Khloe J Berg	2451105
	11/14/2023			11/20/2023 12:35	Khloe J Berg	2451106
	11/14/2023			11/28/2023 12:19	Khloe J Berg	2451108
	11/14/2023			11/28/2023 12:21	Khloe J Berg	2451109
	11/14/2023			11/28/2023 12:22	Khloe J Berg	2451110
	11/14/2023			11/28/2023 12:23	Khloe J Berg	2451111
	11/14/2023			11/28/2023 12:35	Khloe J Berg	2451112
	11/14/2023			11/28/2023 12:39	Khloe J Berg	2451113
	11/14/2023			11/28/2023 12:41	Khloe J Berg	2451114
	11/14/2023			11/28/2023 12:42	Khloe J Berg	2451115
	11/14/2023			11/28/2023 12:43	Khloe J Berg	2451116
	11/14/2023			11/28/2023 12:45	Khloe J Berg	2451117
	11/14/2023			11/28/2023 14:25	Khloe J Berg	2451107
	11/14/2023			11/16/2023 11:22	Samantha L Bates	2451104
EPA 351.2 Rev. 2.0	11/14/2023	11/15/2023 11:48	Simonne.V. Calhoun	11/16/2023 11:23	Samantha L Bates	2451105
	11/14/2023	11/15/2023 11:48	Simonne.V. Calhoun	11/16/2023 11:23	Samantha L Bates	2451105

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	11/14/2023	11/15/2023 11:48	Simonne.V. Calhoun	11/16/2023 11:25	Samantha L Bates	2451106
	11/14/2023	11/15/2023 11:48	Simonne.V. Calhoun	11/16/2023 11:26	Samantha L Bates	2451107
	11/14/2023	11/15/2023 11:48	Simonne.V. Calhoun	11/16/2023 11:28	Samantha L Bates	2451108
	11/14/2023	11/15/2023 11:48	Simonne.V. Calhoun	11/16/2023 11:30	Samantha L Bates	2451109
	11/14/2023	11/15/2023 11:48	Simonne.V. Calhoun	11/16/2023 11:31	Samantha L Bates	2451110
	11/14/2023	11/15/2023 16:54	Simonne.V. Calhoun	11/16/2023 13:27	Samantha L Bates	2451111
	11/14/2023	11/15/2023 16:54	Simonne.V. Calhoun	11/16/2023 13:29	Samantha L Bates	2451112
	11/14/2023	11/15/2023 16:54	Simonne.V. Calhoun	11/16/2023 13:33	Samantha L Bates	2451113
	11/14/2023	11/15/2023 16:54	Simonne.V. Calhoun	11/16/2023 13:35	Samantha L Bates	2451114
	11/14/2023	11/15/2023 16:54	Simonne.V. Calhoun	11/16/2023 13:37	Samantha L Bates	2451115
	11/14/2023	11/15/2023 16:54	Simonne.V. Calhoun	11/16/2023 13:38	Samantha L Bates	2451116
	11/14/2023	11/15/2023 16:54	Simonne.V. Calhoun	11/16/2023 13:43	Samantha L Bates	2451117
	11/14/2023			11/27/2023 12:45	Fadila Guebre	2451113
EPA 353.2 Rev. 2.0	11/14/2023			11/27/2023 12:51	Fadila Guebre	2451114
	11/14/2023			11/27/2023 12:52	Fadila Guebre	2451115
	11/14/2023			11/27/2023 12:53	Fadila Guebre	2451116
	11/14/2023			11/27/2023 12:54	Fadila Guebre	2451117
	11/14/2023			11/27/2023 13:52	Fadila Guebre	2451104
	11/14/2023			11/27/2023 13:59	Fadila Guebre	2451105
	11/14/2023			11/27/2023 14:01	Fadila Guebre	2451106
	11/14/2023			11/27/2023 14:02	Fadila Guebre	2451107
	11/14/2023			11/27/2023 14:03	Fadila Guebre	2451108
	11/14/2023			11/27/2023 14:04	Fadila Guebre	2451109
	11/14/2023			11/27/2023 14:05	Fadila Guebre	2451110
	11/14/2023			11/27/2023 14:06	Fadila Guebre	2451111
	11/14/2023			11/27/2023 14:08	Fadila Guebre	2451112
EPA 365.1 Rev. 2.0	11/14/2023	11/16/2023 12:40	Adam P Silver	11/17/2023 12:21	Chandler E Cox	2451104
	11/14/2023	11/16/2023 12:40	Adam P Silver	11/17/2023 12:24	Chandler E Cox	2451105
	11/14/2023	11/16/2023 12:40	Adam P Silver	11/17/2023 12:25	Chandler E Cox	2451106
	11/14/2023	11/16/2023 12:40	Adam P Silver	11/17/2023 12:26	Chandler E Cox	2451107
	11/14/2023	11/16/2023 12:40	Adam P Silver	11/17/2023 12:27	Chandler E Cox	2451108
	11/14/2023	11/16/2023 12:40	Adam P Silver	11/17/2023 12:28	Chandler E Cox	2451109
	11/14/2023	11/16/2023 12:40	Adam P Silver	11/17/2023 12:37	Chandler E Cox	2451112
	11/14/2023	11/16/2023 12:40	Adam P Silver	11/17/2023 12:40	Chandler E Cox	2451110
	11/14/2023	11/16/2023 12:40	Adam P Silver	11/17/2023 12:41	Chandler E Cox	2451111
	11/14/2023	11/16/2023 12:40	Adam P Silver	11/17/2023 12:42	Chandler E Cox	2451113
	11/14/2023	11/16/2023 12:40	Adam P Silver	11/17/2023 12:43	Chandler E Cox	2451114
	11/14/2023	11/16/2023 12:40	Adam P Silver	11/17/2023 12:44	Chandler E Cox	2451115
	11/14/2023	11/16/2023 12:40	Adam P Silver	11/17/2023 12:45	Chandler E Cox	2451116
	11/14/2023	11/16/2023 12:40	Adam P Silver	11/17/2023 12:52	Chandler E Cox	2451117

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 D-2015	11/14/2023			11/16/2023 15:42	Yijie Li	2451090, 2451091, 2451092, 2451093, 2451094, 2451095, 2451096, 2451097, 2451098, 2451099, 2451100, 2451101, 2451102, 2451103