

Chemical Analysis Report

NW-DIST-2023-03-28-01

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

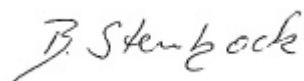
Event Description: **Highway 20 Run**
Request ID: **RQ-2023-03-27-12**
Customer: **NW-DIST**
Project ID: **SMP**

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

Date Certified: 13-APR-2023 14:48



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: LAGRANGE BAYOU MIDDLE

Collection Date/Time: 03/27/2023 13:35

Field ID: G3NW0036

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2396528	DEP SOP: NU-094-1	Color (true)	13		PCU	P427767	
	EPA 180.1 Rev. 2.0	Turbidity	6.3		NTU	P427772	
	EPA 300.0 Rev. 2.1	Chloride	5.8E+03		mg Cl/L	P427893	
		Sulfate	810		mg SO4/L	P427895	
	SM 2320 B-2011	Total Alkalinity	48	A	mg CaCO3/L	P427944	
	SM 2540 C-2015	TDS	9.58E+03		mg/L	P428328	
	SM 2540 D-2015	TSS	5	I	mg/L	P428171	
	SM 4500-F- C-2011	Fluoride	0.38		mg F/L	P427954	
	2396531	EPA 350.1 Rev. 2.0	Ammonia-N	0.020	mg N/L	P427874	
		EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34	I	mg N/L	P427790
		EPA 353.2 Rev. 2.0	NO2NO3-N	0.017	mg N/L	P428113	
		EPA 365.1 Rev. 2.0	Total-P	0.025	mg P/L	P427854	
		SM 5310 B-2011	Organic Carbon	3.5	mg C/L	P428061	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: ALAQUA BAYOU CENTER

Collection Date/Time: 03/27/2023 12:40

Field ID: G3NW0180

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2396529	DEP SOP: NU-094-1	Color (true)	17		PCU	P427767	
	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P427772	
	EPA 300.0 Rev. 2.1	Chloride	2.3E+03		mg Cl/L	P427938	
		Sulfate	320		mg SO4/L	P427940	
	SM 2320 B-2011	Total Alkalinity	23		mg CaCO3/L	P427943	
	SM 2540 C-2015	TDS	4.20E+03		mg/L	P428328	
	SM 2540 D-2015	TSS	2	I	mg/L	P428170	
	SM 4500-F- C-2011	Fluoride	0.17		mg F/L	P427950	
2396532	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P428062	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P427929	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.019		mg N/L	P428113	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P427854	
	SM 5310 B-2011	Organic Carbon	3.1		mg C/L	P427937	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: BOGGY BAYOU MOUTH

Collection Date/Time: 03/27/2023 10:15

Field ID: G3NW0186

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2396530	DEP SOP: NU-094-1	Color (true)	4.1	I	PCU	P427768	
	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P427773	
	EPA 300.0 Rev. 2.1	Chloride	8.9E+03		mg Cl/L	P427938	
		Sulfate	1.3E+03		mg SO4/L	P427940	
	SM 2320 B-2011	Total Alkalinity	65		mg CaCO3/L	P427944	
	SM 2540 C-2015	TDS	1.54E+04		mg/L	P428328	
	SM 2540 D-2015	TSS	4	IA	mg/L	P428171	
	SM 4500-F- C-2011	Fluoride	0.58		mg F/L	P427954	
2396533	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P427998	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27	I	mg N/L	P427929	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.010		mg N/L	P428113	
	EPA 365.1 Rev. 2.0	Total-P	0.01	I	mg P/L	P427854	
	SM 5310 B-2011	Organic Carbon	3.2		mg C/L	P428061	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: BASIN BAYOU NORTH END

Collection Date/Time: 03/27/2023 11:40

Field ID: G3NW0102

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2396526	DEP SOP: NU-094-1	Color (true)	33		PCU	P427767	
	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P427772	
	EPA 300.0 Rev. 2.1	Chloride	630		mg Cl/L	P427893	
		Sulfate	90		mg SO4/L	P427895	
	SM 2320 B-2011	Total Alkalinity	6.2		mg CaCO3/L	P427943	
	SM 2540 C-2015	TDS	1.07E+03		mg/L	P428327	
	SM 2540 D-2015	TSS	2	I	mg/L	P428169	
	SM 4500-F- C-2011	Fluoride	0.057	I	mg F/L	P427950	
2396527	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P427876	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22		mg N/L	P427848	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P427993	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P427854	
	SM 5310 B-2011	Organic Carbon	3.5		mg C/L	P427936	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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: P427767

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P427768

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P427772

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P427773

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427893

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427895

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427938

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427940

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427874

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427876

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427998

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428062

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427790

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427848

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427929

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427993

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428113

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427854

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P427943

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2320 B-2011
Batch ID: P427944

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2015
Batch ID: P428327

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2015
Batch ID: P428328

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P428169

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P428170

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P428171

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P427950

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P427954

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P427936

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-2011
Batch ID: P427937

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-2011
Batch ID: P428061

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P427767

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

Reference Method: DEP SOP: NU-094-1
Batch ID: P427768

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P427772

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	99.6		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P427773

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427893

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427895

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427938

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427940

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427874

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.4		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427876

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: P427998

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428062

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427790

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427848

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427929

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427993

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428113

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427854

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.2		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P427943

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.3		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P427944

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	94.5		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P428327

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

Reference Method: SM 2540 C-2015
Batch ID: P428328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	96.8		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P428169

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	92.7		P	85 - 106

Reference Method: SM 2540 D-2015
Batch ID: P428170

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	93.3		P	85 - 106

Reference Method: SM 2540 D-2015
Batch ID: P428171

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	87.0		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P427950

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P427954

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	96 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P427936

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.0		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P427937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.8		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P428061

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427893

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396464	Chloride	101		P	90 - 110
2396515	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427895

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396464	Sulfate	98.5		P	90 - 110
2396515	Sulfate	97.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396562	Chloride	99.2		P	90 - 110
2396602	Chloride	98.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396562	Sulfate	98.0		P	90 - 110
2396602	Sulfate	96.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427874

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396531	Ammonia-N	99.0	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427876

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396482	Ammonia-N	97.4	96.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427998

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396533	Ammonia-N	97.6	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428062

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2397534	Ammonia-N	104	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427790

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427790

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2394310	Kjeldahl Nitrogen	97.2	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427848

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396627	Kjeldahl Nitrogen	97.0	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427929

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396713	Kjeldahl Nitrogen	93.7	91.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427993

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396535	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428113

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396531	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396533	Total-P	97.3	96.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P427950

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396626	Fluoride	102	101	P/P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P427954

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396528	Fluoride	102	102	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P427936

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396527	Organic Carbon	97.0	95.9	P/P	85 - 115

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P427937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396532	Organic Carbon	89.5	89.9	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P428061

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396533	Organic Carbon	89.6	89.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P427768

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396534	Color (true)	2.71	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P427772

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396476	Turbidity	6.94	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P427773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396534	Turbidity	5.59	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427893

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396464	Chloride	0.926	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396464	Sulfate	1.90	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396562	Chloride	0.326	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427874

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396531	Ammonia-N	1.15	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427876

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396482	Ammonia-N	0.679	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427998

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396533	Ammonia-N	0.979	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428062

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2397534	Ammonia-N	1.48	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427790

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2394310	Kjeldahl Nitrogen	1.96	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427848

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396627	Kjeldahl Nitrogen	6.44	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427929

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396713	Kjeldahl Nitrogen	2.37	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427993

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396535	NO2NO3-N	0.266	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428113

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396531	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396533	Total-P	0.438	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P427943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396626	Total Alkalinity	0.697	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P427944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396528	Total Alkalinity	0.281	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P428327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396188	TDS	1.50	Sample	P	0 - 10

Reference Method: SM 2540 C-2015
Batch ID: P428328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396609	TDS	3.12	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P427950

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396626	Fluoride	0.476	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P427954

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396528	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P427936

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396527	Organic Carbon	0.921	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P427937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396532	Organic Carbon	0.332	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P428061

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396533	Organic Carbon	0.205	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: A118237

Included Lab Sample IDs: 2396526, 2396528, 2396529, 2396530

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 110
Color (true)	102	103	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A118239

Included Lab Sample IDs: 2396526, 2396528, 2396529, 2396530

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A118247

Included Lab Sample IDs: 2396526, 2396528, 2396529, 2396530

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.8	98.1	P/P	90 - 110
Chloride	99.3	99.9	P/P	90 - 110
Sulfate	95.7	97.0	P/P	90 - 110
Sulfate	98.1	98.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A118293

Included Lab Sample IDs: 2396527, 2396531

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.1	98.4	P/P	90 - 110
Ammonia-N	98.8	99.3	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A118328

Included Lab Sample IDs: 2396527, 2396532

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	100	P/P	90 - 110
Organic Carbon	99.0	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A118331

Included Lab Sample IDs: 2396526, 2396528, 2396529, 2396530

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	93.0	95.3	P/P	90 - 110
Total Alkalinity	95.3	94.3	P/P	90 - 110
Total Alkalinity	96.7	93.0	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A118331

Included Lab Sample IDs: 2396526, 2396528, 2396529, 2396530

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A118331

Included Lab Sample IDs: 2396526, 2396528, 2396529, 2396530

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A118343

Included Lab Sample IDs: 2396527, 2396531

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	106	P/P	90 - 110
Kjeldahl Nitrogen	99.5	110	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A118346

Included Lab Sample IDs: 2396527, 2396531, 2396532, 2396533

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A118361

Included Lab Sample IDs: 2396527

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A118362

Included Lab Sample IDs: 2396533

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	99.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A118374

Included Lab Sample IDs: 2396532, 2396533

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.7	97.7	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A118386

Included Lab Sample IDs: 2396531, 2396533

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.0	98.0	P/P	90 - 110
Organic Carbon	98.8	94.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A118387

Included Lab Sample IDs: 2396532

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.4	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A118389

Included Lab Sample IDs: 2396531, 2396532, 2396533

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	108	106	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	MS
DEP SOP: NU-094-1	Color (true)	100					
	Color (true)	101				2.71	
EPA 180.1 Rev. 2.0	Turbidity	99.6				6.94	
	Turbidity	100				5.59	
EPA 300.0 Rev. 2.1	Chloride	103	101	101		0.926	
	Chloride	102	99.2	98.1		0.326	
	Sulfate	100	98.5	97.8		1.90	
	Sulfate	98.4	98.0	96.0			
EPA 350.1 Rev. 2.0	Ammonia-N	95.4	99.0	101			1.15
	Ammonia-N	98.4	97.4	96.6			0.679
	Ammonia-N	95.6	97.6	98.6			0.979
	Ammonia-N	95.0	104	102			1.48
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.3	97.2	99.5			1.96
	Kjeldahl Nitrogen	99.4	97.0	108			6.44
	Kjeldahl Nitrogen	95.0	93.7	91.4			2.37
EPA 353.2 Rev. 2.0	NO2NO3-N	104	102	102			0.266
	NO2NO3-N	106	104	104			0.0
EPA 365.1 Rev. 2.0	Total-P	98.2	97.3	96.9			0.438
SM 2320 B-2011	Total Alkalinity	96.3				0.697	
	Total Alkalinity	94.5				0.281	
SM 2540 C-2015	TDS	105				1.50	
	TDS	96.8				3.12	
SM 2540 D-2015	TSS	92.7					
	TSS	93.3					
	TSS	87.0					
SM 4500-F- C-2011	Fluoride	101	102	101			0.476
	Fluoride	101	102	102			0.0
SM 5310 B-2011	Organic Carbon	98.0	97.0	95.9			0.921
	Organic Carbon	99.8	89.5	89.9			0.332
	Organic Carbon	96.1	89.6	89.8			0.205

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2396526, 2396528, 2396529, 2396530
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2396526, 2396528, 2396529, 2396530
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2396526, 2396528, 2396529, 2396530
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2396526, 2396528, 2396529, 2396530
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2396527, 2396531, 2396532, 2396533
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2396527, 2396531, 2396532, 2396533
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2396527, 2396531, 2396532, 2396533
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2396527, 2396531, 2396532, 2396533
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2396526, 2396528, 2396529, 2396530
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2396526, 2396528, 2396529, 2396530
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2396526, 2396528, 2396529, 2396530
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2396526, 2396528, 2396529, 2396530
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2396527, 2396531, 2396532, 2396533

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	03/28/2023			03/28/2023 14:32	Alexis Price	2396526, 2396528
	03/28/2023			03/28/2023 14:33	Alexis Price	2396529
	03/28/2023			03/28/2023 14:37	Alexis Price	2396530
EPA 180.1 Rev. 2.0	03/28/2023			03/28/2023 14:04	Chandler E Cox	2396526
	03/28/2023			03/28/2023 14:05	Chandler E Cox	2396528, 2396529
	03/28/2023			03/28/2023 14:09	Chandler E Cox	2396530
EPA 300.0 Rev. 2.1	03/28/2023			03/30/2023 23:50	James L Waggeberby	2396526
	03/28/2023			03/31/2023 00:05	James L Waggeberby	2396528
	03/28/2023			03/31/2023 13:20	James L Waggeberby	2396529
EPA 350.1 Rev. 2.0	03/28/2023			03/31/2023 13:35	James L Waggeberby	2396530
	03/28/2023			03/30/2023 11:17	Khloe J Berg	2396531
	03/28/2023			03/30/2023 12:25	Khloe J Berg	2396527
EPA 351.2 Rev. 2.0	03/28/2023			04/04/2023 13:12	Khloe J Berg	2396533
	03/28/2023			04/05/2023 11:24	Ping Hua	2396532
	03/28/2023	03/29/2023 15:39	Simonne.V. Calhoun	04/03/2023 10:52	Samantha L Bates	2396531
EPA 353.2 Rev. 2.0	03/28/2023	03/30/2023 12:29	Samantha L Bates	04/03/2023 11:31	Samantha L Bates	2396527
	03/28/2023	03/31/2023 12:30	Samantha L Bates	04/04/2023 14:26	Samantha L Bates	2396532
	03/28/2023	03/31/2023 12:30	Samantha L Bates	04/04/2023 14:27	Samantha L Bates	2396533
EPA 365.1 Rev. 2.0	03/28/2023			04/04/2023 09:56	Beverly Y. Sanders	2396527
	03/28/2023			04/05/2023 11:38	Beverly Y. Sanders	2396531
	03/28/2023			04/05/2023 11:47	Beverly Y. Sanders	2396532
SM 2320 B-2011	03/28/2023			04/05/2023 11:48	Beverly Y. Sanders	2396533
	03/28/2023	03/30/2023 14:30	Alexis Price	04/03/2023 13:27	James L Waggeberby	2396533
	03/28/2023	03/30/2023 14:30	Alexis Price	04/03/2023 13:28	James L Waggeberby	2396527
SM 2540 C-2015	03/28/2023	03/30/2023 14:30	Alexis Price	04/03/2023 13:29	James L Waggeberby	2396531
	03/28/2023	03/30/2023 14:30	Alexis Price	04/03/2023 13:30	James L Waggeberby	2396532
	03/28/2023			03/31/2023 21:48	Dale L. Simmons	2396526
SM 2540 D-2015	03/28/2023			03/31/2023 23:07	Dale L. Simmons	2396529
	03/28/2023			04/01/2023 02:24	Dale L. Simmons	2396528
	03/28/2023			04/01/2023 02:36	Dale L. Simmons	2396530
SM 4500-F- C-2011	03/28/2023			03/29/2023 16:02	Yijie Li	2396526, 2396528, 2396529, 2396530
	03/28/2023			03/29/2023 16:02	Yijie Li	2396526, 2396528, 2396529, 2396530
	03/28/2023			03/31/2023 21:48	Dale L. Simmons	2396526
SM 5310 B-2011	03/28/2023			03/31/2023 23:07	Dale L. Simmons	2396529
	03/28/2023			03/31/2023 23:57	Dale L. Simmons	2396528
	03/28/2023			04/01/2023 00:11	Dale L. Simmons	2396530
	03/28/2023			03/31/2023 19:33	Khloe J Berg	2396527
	03/28/2023			04/01/2023 03:30	Khloe J Berg	2396532
	03/28/2023			04/04/2023 19:34	Elise M. Gillis	2396533
	03/28/2023			04/04/2023 22:31	Elise M. Gillis	2396531