

Chemical Analysis Report

NW-DIST-2023-07-25-02

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

Event Description: **Highway 20 Run**
Request ID: **RQ-2023-07-24-17**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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Date Certified: 14-AUG-2023 12:23



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: 07/24/2023 10:45

Field ID: G3NW0036

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2426375	DEP SOP: NU-094-1	Color (true)	100		PCU	P432973	
	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P433001	
	EPA 300.0 Rev. 2.1	Chloride	590		mg Cl/L	P433129	
		Sulfate	85		mg SO4/L	P433131	
	SM 2320 B-2011	Total Alkalinity	11		mg CaCO3/L	P433201	
	SM 2540 C-2015	TDS	1.09E+03		mg/L	P433342	
	SM 2540 D-2015	TSS	4	I	mg/L	P433235	
	SM 4500-F- C-2011	Fluoride	0.074	I	mg F/L	P433204	
2426378	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P433284	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P433269	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.023		mg N/L	P433021	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P433296	
	SM 5310 B-2011	Organic Carbon	10		mg C/L	P433257	

Ref. Method and Comment:

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

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

Sample Location: BASIN BAYOU NORTH END

Collection Date/Time: 07/24/2023 12:30

Field ID: G3NW0102

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2426373	DEP SOP: NU-094-1	Color (true)	74		PCU	P432973	
	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P433001	
	EPA 300.0 Rev. 2.1	Chloride	130		mg Cl/L	P433406	
		Sulfate	18		mg SO4/L	P433131	
	SM 2320 B-2011	Total Alkalinity	2.3	I	mg CaCO3/L	P433201	
	SM 2540 C-2015	TDS	231		mg/L	P433342	
	SM 2540 D-2015	TSS	10		mg/L	P433235	
	SM 4500-F- C-2011	Fluoride	0.027	I	mg F/L	P433204	
2426374	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P433178	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36		mg N/L	P433269	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P433110	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P433296	
	SM 5310 B-2011	Organic Carbon	6.8		mg C/L	P433257	

Ref. Method and Comment:

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

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

Sample Location: BOGGY BAYOU MOUTH

Collection Date/Time: 07/24/2023 13:50

Field ID: G3NW0186

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2426376	DEP SOP: NU-094-1	Color (true)	31		PCU	P432973	
	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P433001	
	EPA 300.0 Rev. 2.1	Chloride	5.8E+03		mg Cl/L	P433129	
		Sulfate	810		mg SO4/L	P433131	
	SM 2320 B-2011	Total Alkalinity	46		mg CaCO3/L	P433368	
	SM 2540 C-2015	TDS	9.85E+03		mg/L	P433343	
	SM 2540 D-2015	TSS	4	I	mg/L	P433238	
	SM 4500-F- C-2011	Fluoride	0.40		mg F/L	P433369	
2426379	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P433106	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P433266	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P433153	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P433295	
	SM 5310 B-2011	Organic Carbon	5.3		mg C/L	P433197	

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: ALAQUA BAYOU CENTER

Collection Date/Time: 07/24/2023 11:50

Field ID: G3NW0180

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2426377	DEP SOP: NU-094-1	Color (true)	82		PCU	P432973	
	EPA 180.1 Rev. 2.0	Turbidity	8.0		NTU	P433001	
	EPA 300.0 Rev. 2.1	Chloride	82		mg Cl/L	P433129	
		Sulfate	11		mg SO4/L	P433131	
	SM 2320 B-2011	Total Alkalinity	4.9		mg CaCO3/L	P433201	
	SM 2540 C-2015	TDS	165		mg/L	P433342	
	SM 2540 D-2015	TSS	5	I	mg/L	P433235	
	SM 4500-F- C-2011	Fluoride	0.033	I	mg F/L	P433204	
2426380	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P433284	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38		mg N/L	P433269	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P433021	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P433296	
	SM 5310 B-2011	Organic Carbon	6.9		mg C/L	P433257	

Ref. Method and Comment:

SM 2540 C-2015: The reported result is consistent with the conductivity measured in the laboratory, 330 umhos/cm.

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

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

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P432973

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P433001

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P433129

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P433131

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P433406

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P433106

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P433178

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P433284

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433266

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: P433269

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P433021

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P433110

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P433153

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433295

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433296

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

Reference Method: SM 2320 B-2011
Batch ID: P433201

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2320 B-2011
Batch ID: P433368

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-2015
Batch ID: P433342

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-2015
Batch ID: P433343

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P433235

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P433238

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P433204

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P433369

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P433197

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

Reference Method: SM 5310 B-2011
Batch ID: P433257

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: P432973

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.3		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P433001

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P433129

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P433131

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P433406

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P433106

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P433178

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P433284

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433266

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.3		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P433021

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P433110

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: P433153

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433295

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433296

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

Reference Method: SM 2320 B-2011
Batch ID: P433201

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.0		P	92 - 105

Reference Method: SM 2320 B-2011
Batch ID: P433368

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	93.9		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P433342

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P433343

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

Reference Method: SM 2540 D-2015
Batch ID: P433235

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	95.8		P	85 - 106

Reference Method: SM 2540 D-2015
Batch ID: P433238

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	94.9		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P433204

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.1		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P433369

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.0		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P433197

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.5		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P433257

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P433129

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2426217	Chloride	101		P	90 - 110
2426377	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P433131

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2426217	Sulfate	100		P	90 - 110
2426377	Sulfate	95.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P433406

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2427181	Chloride	101		P	90 - 110
2427210	Chloride	99.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P433106

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2426248	Ammonia-N	98.0	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P433178

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2426207	Ammonia-N	99.0	97.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P433284

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2426423	Ammonia-N	95.2	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2426250	Kjeldahl Nitrogen	108	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P433021

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2426287	NO2NO3-N	97.4	96.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P433110

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2426536	NO2NO3-N	100	98.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P433153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2426248	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433295

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2427121	Total-P	108	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433296

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2426380	Total-P	109	105	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P433204

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2426550	Fluoride	98.2	98.8	P/P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P433369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2427118	Fluoride	101	101	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P433197

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2425000	Organic Carbon	93.6	93.6	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P433257

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2426218	Organic Carbon	97.2	97.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P432973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2426286	Color (true)	9.33	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P433001

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2426286	Turbidity	5.98	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P433129

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2426217	Chloride	0.763	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P433131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2426217	Sulfate	0.373	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P433406

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2427181	Chloride	0.573	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P433106

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2426248	Ammonia-N	2.50	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P433178

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2426207	Ammonia-N	1.76	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P433284

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2426423	Ammonia-N	3.33	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2426250	Kjeldahl Nitrogen	3.27	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2427487	Kjeldahl Nitrogen	10.3	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P433021

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2426287	NO2NO3-N	0.391	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P433110

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2426536	NO2NO3-N	1.51	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P433153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2426248	NO2NO3-N	0.442	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433295

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2427121	Total-P	1.54	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2426380	Total-P	3.12	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P433201

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2426550	Total Alkalinity	1.04	Sample	P	0 - 3.9

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P433368

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2427118	Total Alkalinity	1.69	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P433342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2426224	TDS	0.797	Sample	P	0 - 10

Reference Method: SM 2540 C-2015
Batch ID: P433343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2426737	TDS	2.99	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P433204

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2426550	Fluoride	0.483	Spike	P	0 - 1.9

Reference Method: SM 4500-F- C-2011
Batch ID: P433369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2427118	Fluoride	0.0	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P433197

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2425000	Organic Carbon	0.0768	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P433257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2426218	Organic Carbon	0.564	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: A120616

Included Lab Sample IDs: 2426373, 2426375, 2426376, 2426377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.5	99.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A120628

Included Lab Sample IDs: 2426373, 2426375, 2426376, 2426377

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A120643

Included Lab Sample IDs: 2426378, 2426380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A120681

Included Lab Sample IDs: 2426379

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A120682

Included Lab Sample IDs: 2426374

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	99.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A120686

Included Lab Sample IDs: 2426375, 2426376, 2426377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.7	101	P/P	90 - 110
Sulfate	99.6	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A120696

Included Lab Sample IDs: 2426379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A120706

Included Lab Sample IDs: 2426374

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A120706

Included Lab Sample IDs: 2426374

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	99.2	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A120724

Included Lab Sample IDs: 2426379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	91.3	93.6	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A120725

Included Lab Sample IDs: 2426373, 2426375, 2426377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	92.8	96.5	P/P	90 - 110
Total Alkalinity	93.6	95.7	P/P	90 - 110
Total Alkalinity	96.5	93.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A120725

Included Lab Sample IDs: 2426373, 2426375, 2426377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.5	P/P	90 - 110
Fluoride	101	99.5	P/P	90 - 110
Fluoride	99.5	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A120752

Included Lab Sample IDs: 2426374, 2426378, 2426380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	95.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A120763

Included Lab Sample IDs: 2426373

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A120767

Included Lab Sample IDs: 2426378, 2426380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	96.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A120795

Included Lab Sample IDs: 2426379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.1	96.5	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A120807

Included Lab Sample IDs: 2426376

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.5	90.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A120807

Included Lab Sample IDs: 2426376

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A120822

Included Lab Sample IDs: 2426374, 2426378, 2426380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.0	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A120829

Included Lab Sample IDs: 2426374, 2426378, 2426379, 2426380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.8	P/P	90 - 110
Total-P	101	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)	98.3			9.33	
EPA 180.1 Rev. 2.0	Turbidity	99.3			5.98	
EPA 300.0 Rev. 2.1	Chloride	101	101	104	0.763	
	Chloride	99.7	101	99.6	0.573	
	Sulfate	100	100	95.8	0.373	
EPA 350.1 Rev. 2.0	Ammonia-N	98.2	98.0	101		2.50
	Ammonia-N	100	99.0	97.0		1.76
	Ammonia-N	95.2	95.2	99.0		3.33
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	108	103		3.27
	Kjeldahl Nitrogen	96.3				10.3
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	97.4	96.9		0.391
	NO2NO3-N	102	100	98.5		1.51
	NO2NO3-N	102	103	103		0.442
EPA 365.1 Rev. 2.0	Total-P	107	108	105		1.54
	Total-P	103	109	105		3.12
SM 2320 B-2011	Total Alkalinity	95.0			1.04	
	Total Alkalinity	93.9			1.69	
SM 2540 C-2015	TDS	97.4			0.797	
	TDS	104			2.99	
SM 2540 D-2015	TSS	95.8				
	TSS	94.9				
SM 4500-F- C-2011	Fluoride	98.1	98.2	98.8		0.483
	Fluoride	99.0	101	101		0.0
SM 5310 B-2011	Organic Carbon	98.5	93.6	93.6		0.0768
	Organic Carbon	96.2	97.2	97.8		0.564

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2426373, 2426375, 2426376, 2426377
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2426373, 2426375, 2426376, 2426377
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2426373, 2426375, 2426376, 2426377
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2426373, 2426375, 2426376, 2426377
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2426374, 2426378, 2426379, 2426380
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2426374, 2426378, 2426379, 2426380
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2426374, 2426378, 2426379, 2426380
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2426374, 2426378, 2426379, 2426380
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2426373, 2426375, 2426376, 2426377
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2426373, 2426375, 2426376, 2426377
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2426373, 2426375, 2426376, 2426377
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2426373, 2426375, 2426376, 2426377
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2426374, 2426378, 2426379, 2426380

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	07/25/2023			07/25/2023 13:47	Chandler E Cox	2426373
	07/25/2023			07/25/2023 13:48	Chandler E Cox	2426375
	07/25/2023			07/25/2023 13:49	Chandler E Cox	2426376, 2426377
EPA 180.1 Rev. 2.0	07/25/2023			07/25/2023 14:31	Khloe J Berg	2426373
	07/25/2023			07/25/2023 14:33	Khloe J Berg	2426375
	07/25/2023			07/25/2023 14:34	Khloe J Berg	2426376
EPA 300.0 Rev. 2.1	07/25/2023			07/25/2023 14:36	Khloe J Berg	2426377
	07/25/2023			07/27/2023 00:06	James L Waggeberby	2426377
	07/25/2023			07/27/2023 01:36	James L Waggeberby	2426373
EPA 300.0 Rev. 2.1	07/25/2023			07/27/2023 01:51	James L Waggeberby	2426375
	07/25/2023			07/27/2023 02:06	James L Waggeberby	2426376
	07/25/2023			08/02/2023 13:54	James L Waggeberby	2426373
EPA 350.1 Rev. 2.0	07/25/2023			07/27/2023 12:28	Ping Hua	2426379
	07/25/2023			07/28/2023 13:24	Ping Hua	2426374
	07/25/2023			08/01/2023 12:59	Ping Hua	2426378
EPA 351.2 Rev. 2.0	07/25/2023			08/01/2023 13:00	Ping Hua	2426380
	07/25/2023	08/01/2023 10:22	Dana G. Hughes	08/02/2023 12:33	Samantha L Bates	2426379
	07/25/2023	08/01/2023 10:22	Dana G. Hughes	08/03/2023 09:58	Samantha L Bates	2426374
EPA 353.2 Rev. 2.0	07/25/2023	08/01/2023 10:22	Dana G. Hughes	08/03/2023 09:59	Samantha L Bates	2426378
	07/25/2023	08/01/2023 10:22	Dana G. Hughes	08/03/2023 10:01	Samantha L Bates	2426380
	07/25/2023			07/26/2023 10:46	Beverly Y. Sanders	2426378
EPA 353.2 Rev. 2.0	07/25/2023			07/26/2023 10:47	Beverly Y. Sanders	2426380
	07/25/2023			07/27/2023 10:56	Beverly Y. Sanders	2426374
	07/25/2023			07/27/2023 15:26	Judith K. Clark	2426379
EPA 365.1 Rev. 2.0	07/25/2023	08/02/2023 14:24	Alexis Price	08/03/2023 15:39	James L Waggeberby	2426379
	07/25/2023	08/02/2023 14:24	Alexis Price	08/03/2023 15:51	James L Waggeberby	2426380
	07/25/2023	08/02/2023 14:24	Alexis Price	08/03/2023 15:54	James L Waggeberby	2426374
SM 2320 B-2011	07/25/2023	08/02/2023 14:24	Alexis Price	08/03/2023 15:55	James L Waggeberby	2426378
	07/25/2023			07/28/2023 01:05	Dale L. Simmons	2426373
	07/25/2023			07/28/2023 01:50	Dale L. Simmons	2426377
SM 2540 C-2015	07/25/2023			07/28/2023 05:37	Dale L. Simmons	2426375
	07/25/2023			08/02/2023 21:44	Dale L. Simmons	2426376
	07/25/2023			07/27/2023 16:02	Yijie Li	2426373, 2426375, 2426376, 2426377
SM 2540 D-2015	07/25/2023			07/27/2023 16:02	Yijie Li	2426373, 2426375, 2426376, 2426377
SM 4500-F- C-2011	07/25/2023			07/28/2023 01:05	Dale L. Simmons	2426373
	07/25/2023			07/28/2023 01:50	Dale L. Simmons	2426377
	07/25/2023			07/28/2023 05:37	Dale L. Simmons	2426375
SM 5310 B-2011	07/25/2023			08/02/2023 19:33	Dale L. Simmons	2426376
	07/25/2023			07/29/2023 06:00	Judith K. Clark	2426379
	07/25/2023			07/31/2023 17:06	Elise M. Gillis	2426374

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	07/25/2023			07/31/2023 17:21	Elise M. Gillis	2426378
	07/25/2023			07/31/2023 17:35	Elise M. Gillis	2426380