

Chemical Analysis Report

SO-DIST-2024-07-03-01

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

Event Description: **TMDL Gordon River**
Request ID: **RQ-2024-07-08-04**
Customer: **SO-DIST**
Project ID: **TMDL**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
Attn: Nicole Reistad

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Certified by: Marek Topolski, Environmental Administrator

Date Certified: 23-JUL-2024 11:26

A handwritten signature in black ink, appearing to read "Marek Topolski", with a stylized, flowing script.

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: GORDON RIVER AT ROCK CREEK

Collection Date/Time: 07/02/2024 11:30

Field ID: G1SD0131

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2499276	DEP SOP: NU-094-1	Color (true)	64		PCU	P447441	
	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P447445	
	EPA 300.0 Rev. 2.1	Chloride	71		mg Cl/L	P447831	
		Sulfate	21		mg SO4/L	P447835	
	SM 2320 B-2011	Total Alkalinity	214		mg CaCO3/L	P447730	
	SM 2540 C-2015	TDS	375		mg/L	P447897	
	SM 2540 D-2015	TSS	3	I	mg/L	P447770	
	SM 4500-F- C-2011	Fluoride	0.14		mg F/L	P447744	
2499279	EPA 350.1 Rev. 2.0	Ammonia-N	0.049		mg N/L	P447929	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P447588	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P447741	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P447815	
	SM 5310 B-2014	Organic Carbon	12		mg C/L	P447950	
2499282	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.009	I	mg P/L	P447448	

Ref. Method and Comment:
EPA 180.1 Rev. 2.0: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 4500-F- C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: GORDON RIVER AT BAKER PARK

Collection Date/Time: 07/02/2024 11:50

Field ID: G1SD0132

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2499277	DEP SOP: NU-094-1	Color (true)	67		PCU	P447441	
	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P447445	
	EPA 300.0 Rev. 2.1	Chloride	67		mg Cl/L	P447831	
		Sulfate	21		mg SO4/L	P447835	
	SM 2320 B-2011	Total Alkalinity	217		mg CaCO3/L	P447731	
	SM 2540 C-2015	TDS	338		mg/L	P447897	
	SM 2540 D-2015	TSS	4	I	mg/L	P447770	
	SM 4500-F- C-2011	Fluoride	0.15		mg F/L	P447745	RPD
2499280	EPA 350.1 Rev. 2.0	Ammonia-N	0.047		mg N/L	P447929	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P447588	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P447742	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P447815	
	SM 5310 B-2014	Organic Carbon	12		mg C/L	P447950	
2499283	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P447449	

Ref. Method and Comment:
EPA 180.1 Rev. 2.0: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: GORDON RIVER NEAR AVION PL

Collection Date/Time: 07/02/2024 12:05

Field ID: G1SD0133

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2499278	DEP SOP: NU-094-1	Color (true)	68		PCU	P447441	
	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P447445	
	EPA 300.0 Rev. 2.1	Chloride	61		mg Cl/L	P447831	
		Sulfate	20		mg SO4/L	P447835	
	SM 2320 B-2011	Total Alkalinity	215		mg CaCO3/L	P447731	
	SM 2540 C-2015	TDS	362		mg/L	P447897	
	SM 2540 D-2015	TSS	5	I	mg/L	P447770	
	SM 4500-F- C-2011	Fluoride	0.14		mg F/L	P447745	RPD
2499281	EPA 350.1 Rev. 2.0	Ammonia-N	0.046		mg N/L	P447932	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P447588	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P447742	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P447815	
	SM 5310 B-2014	Organic Carbon	12		mg C/L	P447950	
2499284	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P447449	

Ref. Method and Comment:
EPA 180.1 Rev. 2.0: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
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: P447441

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P447445

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P447831

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P447835

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P447929

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P447932

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P447588

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P447741

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P447742

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P447815

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P447448

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P447449

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: SM 2320 B-2011
Batch ID: P447730

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

Reference Method: SM 2320 B-2011
Batch ID: P447731

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

Reference Method: SM 2540 C-2015
Batch ID: P447897

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P447770

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P447744

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P447745

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 5310 B-2014
Batch ID: P447950

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: P447441

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P447445

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P447831

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P447835

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P447929

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: P447932

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P447588

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.9		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P447741

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: P447742

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P447815

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P447448

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P447449

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

Reference Method: SM 2320 B-2011
Batch ID: P447730

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	93 - 103

Reference Method: SM 2320 B-2011
Batch ID: P447731

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	93 - 103

Reference Method: SM 2540 C-2015
Batch ID: P447897

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	102		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P447770

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	93.6		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P447744

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.5		P	95 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P447745

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	95 - 106

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2014
Batch ID: P447950

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P447831

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2499228	Chloride	104		P	90 - 110
2499519	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P447835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2499228	Sulfate	104		P	90 - 110
2499519	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P447929

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2499279	Ammonia-N	95.4	96.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P447932

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2499281	Ammonia-N	96.2	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P447588

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2499279	Kjeldahl Nitrogen	97.9	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P447741

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2497420	NO2NO3-N	98.4	98.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P447742

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2499280	NO2NO3-N	99.5	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P447815

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2499366	Total-P	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P447448

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2499235	O-Phosphate-P	94.6	92.3	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P447449

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2499521	O-Phosphate-P	96.6	96.3	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P447745

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2499603	Fluoride	97.3	99.4	P/P	95 - 107

Reference Method: SM 5310 B-2014
Batch ID: P447950

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2499231	Organic Carbon	99.5	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P447441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2499263	Color (true)	7.69	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P447831

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2499228	Chloride	2.36	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P447835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2499228	Sulfate	3.40	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P447929

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2499279	Ammonia-N	0.724	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P447932

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2499281	Ammonia-N	0.744	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P447588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2499279	Kjeldahl Nitrogen	1.93	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P447741

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2497420	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P447742

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2499280	NO2NO3-N	0.803	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P447815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2499366	Total-P	0.323	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P447448

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2499235	O-Phosphate-P	1.65	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P447449

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2499521	O-Phosphate-P	0.275	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P447730

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2499560	Total Alkalinity	0.575	Sample	P	0 - 4.1

Reference Method: SM 2320 B-2011
Batch ID: P447731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2499603	Total Alkalinity	0.499	Sample	P	0 - 4.1

Reference Method: SM 2540 C-2015
Batch ID: P447897

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2499229	TDS	0.797	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P447744

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2499560	Fluoride	0.0	Spike	P	0 - 1.7

Reference Method: SM 4500-F- C-2011
Batch ID: P447745

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2499603	Fluoride	1.99	Spike	F	0 - 1.7

Quality Assurance Report
Precision

Reference Method: SM 5310 B-2014
Batch ID: P447950

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2499231	Organic Carbon	1.91	Spike	P	0 - 15

* 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: A126494
Included Lab Sample IDs: 2499276, 2499277, 2499278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	97.2	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A126495
Included Lab Sample IDs: 2499276, 2499277, 2499278

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A126496
Included Lab Sample IDs: 2499282, 2499283, 2499284

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	99.1	P/P	90 - 110
O-Phosphate-P	99.1	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A126557
Included Lab Sample IDs: 2499276, 2499277, 2499278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	100	P/P	90 - 110
Sulfate	102	101	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A126620
Included Lab Sample IDs: 2499276, 2499277, 2499278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.0	98.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A126620
Included Lab Sample IDs: 2499276, 2499277, 2499278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	103	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A126621
Included Lab Sample IDs: 2499279, 2499280, 2499281

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	100	P/P	90 - 110
NO2NO3-N	99.0	99.0	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A126629
Included Lab Sample IDs: 2499279, 2499280, 2499281

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	96.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A126689
Included Lab Sample IDs: 2499279, 2499280, 2499281

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A126694
Included Lab Sample IDs: 2499279, 2499280, 2499281

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	98.9	P/P	90 - 110
Ammonia-N	99.1	98.7	P/P	90 - 110

Reference Method: SM 5310 B-2014
Run ID: A126709
Included Lab Sample IDs: 2499279, 2499280, 2499281

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.5	106	P/P	85 - 115

* 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)	96.5			7.69	
EPA 180.1 Rev. 2.0	Turbidity	101				
EPA 300.0 Rev. 2.1	Chloride	102	104	101	2.36	
	Sulfate	102	104	102	3.40	
EPA 350.1 Rev. 2.0	Ammonia-N	96.6	95.4	96.8		0.724
	Ammonia-N	96.2	96.2	97.6		0.744
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.9	97.9	101		1.93
EPA 353.2 Rev. 2.0	NO2NO3-N	102	98.4	98.4		0.0
	NO2NO3-N	103	99.5	101		0.803
EPA 365.1 Rev. 2.0	Total-P	99.2	101	101		0.323
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.1	94.6	92.3		1.65
	O-Phosphate-P	100	96.6	96.3		0.275
SM 2320 B-2011	Total Alkalinity	99.5			0.575	
	Total Alkalinity	102			0.499	
SM 2540 C-2015	TDS	102			0.797	
SM 2540 D-2015	TSS	93.6				
SM 4500-F- C-2011	Fluoride	99.5				0.0
	Fluoride	101	97.3	99.4		1.99
SM 5310 B-2014	Organic Carbon	98.8	99.5	101		1.91

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2499276, 2499277, 2499278
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2499276, 2499277, 2499278
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2499276, 2499277, 2499278
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2499276, 2499277, 2499278
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2499279, 2499280, 2499281
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2499279, 2499280, 2499281
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2499279, 2499280, 2499281
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2499279, 2499280, 2499281
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2499282, 2499283, 2499284
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2499276, 2499277, 2499278
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2499276, 2499277, 2499278
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2499276, 2499277, 2499278
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2499276, 2499277, 2499278
SM 5310 B-2014	Nonpurgeable Organic Carbon in aqueous matrices	2499279, 2499280, 2499281

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	07/03/2024			07/03/2024 14:27	Anna M. Plaviak	2499276
	07/03/2024			07/03/2024 14:28	Anna M. Plaviak	2499277, 2499278
	07/03/2024			07/03/2024 13:49	Samantha L Bates	2499276
EPA 180.1 Rev. 2.0	07/03/2024			07/03/2024 13:50	Samantha L Bates	2499277
	07/03/2024			07/03/2024 13:51	Samantha L Bates	2499278
	07/03/2024			07/12/2024 16:26	James L Waggeberby	2499276
EPA 300.0 Rev. 2.1	07/03/2024			07/12/2024 16:41	James L Waggeberby	2499277
	07/03/2024			07/12/2024 16:56	James L Waggeberby	2499278
	07/03/2024			07/16/2024 12:29	Khloe J Berg	2499279
EPA 350.1 Rev. 2.0	07/03/2024			07/16/2024 12:36	Khloe J Berg	2499280
	07/03/2024			07/16/2024 13:49	Khloe J Berg	2499281
	07/03/2024			07/11/2024 14:31	Robyn Blevins	2499279
EPA 351.2 Rev. 2.0	07/03/2024	07/10/2024 13:26	Robyn Blevins	07/11/2024 14:36	Robyn Blevins	2499280
	07/03/2024	07/10/2024 13:26	Robyn Blevins	07/11/2024 14:38	Robyn Blevins	2499281
	07/03/2024	07/10/2024 13:26	Robyn Blevins	07/11/2024 14:32	Fadila Guebre	2499279
EPA 353.2 Rev. 2.0	07/03/2024			07/11/2024 14:39	Fadila Guebre	2499280
	07/03/2024			07/11/2024 14:45	Fadila Guebre	2499281
	07/03/2024			07/16/2024 12:01	Elise M. Gillis	2499279
EPA 365.1 Rev. 2.0	07/03/2024	07/12/2024 18:47	Adam P Silver	07/16/2024 12:02	Elise M. Gillis	2499280
	07/03/2024	07/12/2024 18:47	Adam P Silver	07/16/2024 12:03	Elise M. Gillis	2499281
	07/03/2024	07/12/2024 18:47	Adam P Silver	07/03/2024 14:49	Elise M. Gillis	2499282
EPA 365.1 Rev. 2.0 dissolved	07/03/2024			07/03/2024 15:02	Elise M. Gillis	2499283
	07/03/2024			07/03/2024 15:03	Elise M. Gillis	2499284
	07/03/2024			07/11/2024 04:32	Dale L. Simmons	2499276
SM 2320 B-2011	07/03/2024			07/11/2024 05:54	Dale L. Simmons	2499277
	07/03/2024			07/11/2024 06:09	Dale L. Simmons	2499278
	07/03/2024			07/08/2024 16:07	Yijie Li	2499276, 2499277, 2499278
SM 2540 C-2015	07/03/2024			07/08/2024 16:07	Yijie Li	2499276, 2499277, 2499278
SM 2540 D-2015	07/03/2024			07/11/2024 04:32	Dale L. Simmons	2499276
	07/03/2024			07/11/2024 05:54	Dale L. Simmons	2499277
	07/03/2024			07/11/2024 06:09	Dale L. Simmons	2499278
SM 4500-F- C-2011	07/03/2024			07/16/2024 06:57	Jessica K Wilks	2499279
	07/03/2024			07/16/2024 07:12	Jessica K Wilks	2499280
	07/03/2024			07/16/2024 07:34	Jessica K Wilks	2499281
SM 5310 B-2014						