

Chemical Analysis Report

SO-DIST-2024-06-20-02

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

Event Description: **TMDL Gordon River**
Request ID: **RQ-2024-06-10-04**
Customer: **SO-DIST**
Project ID: **TMDL**

Send Reports to:
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FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
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Certified by: Colin Wright, Program Administrator

Date Certified: 11-JUL-2024 11:17



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: 06/19/2024 09:55

Field ID: G1SD0131					Matrix: W-SURF-FRH		
Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2495657	DEP SOP: NU-094-1	Color (true)	65		PCU	P446832	RPD
	EPA 180.1 Rev. 2.0	Turbidity	3.3	A	NTU	P446838	
	EPA 300.0 Rev. 2.1	Chloride	120		mg Cl/L	P447234	
		Sulfate	28		mg SO4/L	P447237	
	SM 2320 B-2011	Total Alkalinity	225		mg CaCO3/L	P447223	
	SM 2540 C-2015	TDS	516		mg/L	P447114	
	SM 2540 D-2015	TSS	3	I	mg/L	P447066	
	SM 4500-F- C-2011	Fluoride	0.16		mg F/L	P447226	
2495660	EPA 350.1 Rev. 2.0	Ammonia-N	0.077		mg N/L	P447358	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P447194	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P447047	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P447011	
	SM 5310 B-2014	Organic Carbon	12		mg C/L	P446944	
2495663	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P446822	

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

Sample Location: GORDON RIVER AT BAKER PARK

Collection Date/Time: 06/19/2024 10:15

Field ID: G1SD0132					Matrix: W-SURF-FRH		
Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2495658	DEP SOP: NU-094-1	Color (true)	63		PCU	P446832	RPD
	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P446838	
	EPA 300.0 Rev. 2.1	Chloride	100		mg Cl/L	P447234	
		Sulfate	25		mg SO4/L	P447237	
	SM 2320 B-2011	Total Alkalinity	222		mg CaCO3/L	P447224	
	SM 2540 C-2015	TDS	421		mg/L	P447114	
	SM 2540 D-2015	TSS	2	I	mg/L	P447066	
	SM 4500-F- C-2011	Fluoride	0.15		mg F/L	P447227	
2495661	EPA 350.1 Rev. 2.0	Ammonia-N	0.079		mg N/L	P447358	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.79		mg N/L	P447194	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P447047	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P447012	
	SM 5310 B-2014	Organic Carbon	12		mg C/L	P446944	
2495664	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P446822	

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

Sample Location: GORDON RIVER NEAR AVION PL

Collection Date/Time: 06/19/2024 10:30

Field ID: G1SD0133

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2495659	DEP SOP: NU-094-1	Color (true)	65		PCU	P446832	RPD
	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P446838	
	EPA 300.0 Rev. 2.1	Chloride	69		mg Cl/L	P447234	
		Sulfate	21		mg SO4/L	P447237	
	SM 2320 B-2011	Total Alkalinity	228		mg CaCO3/L	P447224	
	SM 2540 C-2015	TDS	410	A	mg/L	P447115	
	SM 2540 D-2015	TSS	3	IA	mg/L	P447067	
	SM 4500-F- C-2011	Fluoride	0.15		mg F/L	P447227	
2495662	EPA 350.1 Rev. 2.0	Ammonia-N	0.076		mg N/L	P447358	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P447194	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P447185	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P447012	
	SM 5310 B-2014	Organic Carbon	12		mg C/L	P446944	
2495665	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P446822	

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: FB

Collection Date/Time: 06/19/2024 11:05

Field ID: FB_06192024				Matrix: W-FIELD-BK			
Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2495666	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P446832	RPD
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P446838	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P447234	
		Sulfate	0.20	U	mg SO4/L	P447237	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P447224	
	SM 2540 C-2015	TDS	15	U	mg/L	P447114	
	SM 2540 D-2015	TSS	2	U	mg/L	P447066	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P447227	
2495667	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P447358	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P447194	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P447185	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P447012	
	SM 5310 B-2014	Organic Carbon	0.50	U	mg C/L	P446944	
2495668	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P446822	

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

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P446832

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P446838

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P447234

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P447237

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P447358

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P447194

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P447047

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P447185

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P447011

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P447012

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P446822

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

Reference Method: SM 2320 B-2011
Batch ID: P447223

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

Reference Method: SM 2320 B-2011
Batch ID: P447224

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

Reference Method: SM 2540 C-2015
Batch ID: P447114

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2015
Batch ID: P447115

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P447066

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P447067

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P447226

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P447227

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2014
Batch ID: P446944

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: P446832

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P446838

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P447234

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P447237

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: P447358

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P447194

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.4		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P447047

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	95.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P447185

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P447011

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P447012

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P446822

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

Reference Method: SM 2320 B-2011
Batch ID: P447223

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.5		P	93 - 103

Reference Method: SM 2320 B-2011
Batch ID: P447224

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.2		P	93 - 103

Reference Method: SM 2540 C-2015
Batch ID: P447114

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	96.4		P	85 - 115

Reference Method: SM 2540 C-2015
Batch ID: P447115

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	96.4		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P447066

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	110		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P447067

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.8		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P447226

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P447227

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.8		P	95 - 106

Reference Method: SM 5310 B-2014
Batch ID: P446944

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P447234

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2495633	Chloride	105		P	90 - 110
2495761	Chloride	95.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P447237

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2495633	Sulfate	104		P	90 - 110
2495761	Sulfate	96.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P447358

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2495629	Ammonia-N	99.2	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P447194

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2495661	Kjeldahl Nitrogen	103	91.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P447047

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2495340	NO2NO3-N	96.5	97.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P447185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2495662	NO2NO3-N	97.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P447011

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2495636	Total-P	95.0	94.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P447012

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2495762	Total-P	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P446822

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2495630	O-Phosphate-P	97.6	97.2	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P447226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2496632	Fluoride	102	101	P/P	95 - 107

Reference Method: SM 4500-F- C-2011
Batch ID: P447227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2496134	Fluoride	99.9	102	P/P	95 - 107

Reference Method: SM 5310 B-2014
Batch ID: P446944

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2495536	Organic Carbon	99.4	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P446832

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2495633	Color (true)	24.6	Sample	F	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P446838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2495657	Turbidity	2.11	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P447234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2495633	Chloride	0.107	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P447237

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2495633	Sulfate	0.631	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P447358

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2495629	Ammonia-N	0.807	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P447194

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2495661	Kjeldahl Nitrogen	7.76	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P447047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2495340	NO2NO3-N	0.565	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P447185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2495662	NO2NO3-N	0.578	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P447011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2495636	Total-P	0.226	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P447012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2495762	Total-P	1.81	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P446822

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2495630	O-Phosphate-P	0.375	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P447223

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2496632	Total Alkalinity	0.850	Sample	P	0 - 4.1

Reference Method: SM 2320 B-2011
Batch ID: P447224

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2496134	Total Alkalinity	0.579	Sample	P	0 - 4.1

Reference Method: SM 2540 C-2015
Batch ID: P447115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2495659	TDS	2.19	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P447226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2496632	Fluoride	0.473	Spike	P	0 - 1.7

Reference Method: SM 4500-F- C-2011
Batch ID: P447227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2496134	Fluoride	1.46	Spike	P	0 - 1.7

Quality Assurance Report
Precision

Reference Method: SM 5310 B-2014
Batch ID: P446944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2495536	Organic Carbon	2.01	Spike	P	0 - 15

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A126270

Included Lab Sample IDs: 2495663, 2495664, 2495665, 2495668

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	97.6	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A126275

Included Lab Sample IDs: 2495657, 2495658, 2495659, 2495666

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.6	97.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A126278

Included Lab Sample IDs: 2495657, 2495658, 2495659, 2495666

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	98.0	P/P	95 - 105

Reference Method: SM 5310 B-2014

Run ID: A126306

Included Lab Sample IDs: 2495660, 2495661, 2495662, 2495667

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	97.1	P/P	85 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A126347

Included Lab Sample IDs: 2495660, 2495661

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.0	95.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A126370

Included Lab Sample IDs: 2495660, 2495661, 2495662, 2495667

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A126379

Included Lab Sample IDs: 2495657, 2495658, 2495659, 2495666

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.3	95.5	P/P	90 - 110
Sulfate	97.3	96.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A126404

Included Lab Sample IDs: 2495662, 2495667

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A126404

Included Lab Sample IDs: 2495662, 2495667

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	95.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A126412

Included Lab Sample IDs: 2495657, 2495658, 2495659, 2495666

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	98.2	P/P	90 - 110
Total Alkalinity	99.7	97.8	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A126412

Included Lab Sample IDs: 2495657, 2495658, 2495659, 2495666

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A126460

Included Lab Sample IDs: 2495660, 2495661, 2495662, 2495667

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.2	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A126475

Included Lab Sample IDs: 2495660, 2495661, 2495662, 2495667

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.7	94.7	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)	100			24.6	
EPA 180.1 Rev. 2.0	Turbidity	101			2.11	
EPA 300.0 Rev. 2.1	Chloride	96.5	105	95.4	0.107	
	Sulfate	98.4	104	96.8	0.631	
EPA 350.1 Rev. 2.0	Ammonia-N	95.6	99.2	102		0.807
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.4	103	91.8		7.76
EPA 353.2 Rev. 2.0	NO2NO3-N	95.5	96.5	97.5		0.565
	NO2NO3-N	100	97.0	98.0		0.578
EPA 365.1 Rev. 2.0	Total-P	95.2	95.0	94.8		0.226
	Total-P	99.4	102	104		1.81
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	97.6	97.2		0.375
SM 2320 B-2011	Total Alkalinity	98.5			0.850	
	Total Alkalinity	98.2			0.579	
SM 2540 C-2015	TDS	96.4				
	TDS	96.4			2.19	
SM 2540 D-2015	TSS	110				
	TSS	96.8				
SM 4500-F- C-2011	Fluoride	101	102	101		0.473
	Fluoride	99.8	99.9	102		1.46
SM 5310 B-2014	Organic Carbon	99.0	99.4	102		2.01

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2495657, 2495658, 2495659, 2495666
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2495657, 2495658, 2495659, 2495666
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2495657, 2495658, 2495659, 2495666
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2495657, 2495658, 2495659, 2495666
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2495660, 2495661, 2495662, 2495667
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2495660, 2495661, 2495662, 2495667
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2495660, 2495661, 2495662, 2495667
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2495660, 2495661, 2495662, 2495667
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2495663, 2495664, 2495665, 2495668
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2495657, 2495658, 2495659, 2495666
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2495657, 2495658, 2495659, 2495666
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2495657, 2495658, 2495659, 2495666
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2495657, 2495658, 2495659, 2495666
SM 5310 B-2014	Nonpurgeable Organic Carbon in aqueous matrices	2495660, 2495661, 2495662, 2495667

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	06/20/2024			06/20/2024 14:24	Chandler E Cox	2495657, 2495658
	06/20/2024			06/20/2024 14:25	Chandler E Cox	2495659, 2495666
EPA 180.1 Rev. 2.0	06/20/2024			06/20/2024 13:45	Jessica K Wilks	2495657
	06/20/2024			06/20/2024 13:47	Jessica K Wilks	2495658
	06/20/2024			06/20/2024 13:48	Jessica K Wilks	2495659
	06/20/2024			06/20/2024 13:49	Jessica K Wilks	2495666
EPA 300.0 Rev. 2.1	06/20/2024			06/28/2024 02:39	James L Waggeberby	2495657
	06/20/2024			06/28/2024 02:55	James L Waggeberby	2495658
	06/20/2024			06/28/2024 03:10	James L Waggeberby	2495659
	06/20/2024			06/28/2024 03:25	James L Waggeberby	2495666
EPA 350.1 Rev. 2.0	06/20/2024			07/02/2024 12:27	Robyn Blevins	2495660
	06/20/2024			07/02/2024 12:28	Robyn Blevins	2495661
	06/20/2024			07/02/2024 12:30	Robyn Blevins	2495662
	06/20/2024			07/02/2024 12:31	Robyn Blevins	2495667
EPA 351.2 Rev. 2.0	06/20/2024	06/28/2024 07:53	Simonne.V. Calhoun	07/02/2024 14:27	Samantha L Bates	2495660
	06/20/2024	06/28/2024 07:53	Simonne.V. Calhoun	07/02/2024 14:29	Samantha L Bates	2495661
	06/20/2024	06/28/2024 07:53	Simonne.V. Calhoun	07/02/2024 14:34	Samantha L Bates	2495662
	06/20/2024	06/28/2024 07:53	Simonne.V. Calhoun	07/02/2024 14:35	Samantha L Bates	2495667
EPA 353.2 Rev. 2.0	06/20/2024			06/25/2024 15:08	Fadila Guebre	2495660
	06/20/2024			06/25/2024 15:09	Fadila Guebre	2495661
	06/20/2024			06/27/2024 13:21	Fadila Guebre	2495662
	06/20/2024			06/27/2024 13:27	Fadila Guebre	2495667
EPA 365.1 Rev. 2.0	06/20/2024	06/25/2024 13:47	Adam P Silver	06/26/2024 13:50	Elise M. Gillis	2495660
	06/20/2024	06/25/2024 13:47	Adam P Silver	06/26/2024 13:52	Elise M. Gillis	2495667
	06/20/2024	06/25/2024 13:47	Adam P Silver	06/26/2024 13:56	Elise M. Gillis	2495661
	06/20/2024	06/25/2024 13:47	Adam P Silver	06/26/2024 14:04	Elise M. Gillis	2495662
EPA 365.1 Rev. 2.0 dissolved	06/20/2024			06/20/2024 13:09	Elise M. Gillis	2495663
	06/20/2024			06/20/2024 13:10	Elise M. Gillis	2495664
	06/20/2024			06/20/2024 13:11	Elise M. Gillis	2495665, 2495668
	06/20/2024			06/28/2024 04:09	Chandler E Cox	2495657
SM 2320 B-2011	06/20/2024			06/28/2024 09:23	Chandler E Cox	2495658
	06/20/2024			06/28/2024 09:38	Chandler E Cox	2495659
	06/20/2024			06/28/2024 09:48	Chandler E Cox	2495666
	06/20/2024			06/21/2024 15:04	Yijie Li	2495657, 2495658, 2495659, 2495666
SM 2540 C-2015	06/20/2024			06/21/2024 15:04	Yijie Li	2495657, 2495658, 2495659, 2495666
SM 2540 D-2015	06/20/2024			06/28/2024 04:09	Chandler E Cox	2495657
SM 4500-F- C-2011	06/20/2024			06/28/2024 09:23	Chandler E Cox	2495658
	06/20/2024			06/28/2024 09:38	Chandler E Cox	2495659
	06/20/2024			06/28/2024 09:48	Chandler E Cox	2495666
	06/20/2024			06/21/2024 20:49	Jessica K Wilks	2495660
SM 5310 B-2014	06/20/2024					

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2014	06/20/2024			06/21/2024 21:04	Jessica K Wilks	2495661
	06/20/2024			06/21/2024 21:19	Jessica K Wilks	2495662
	06/20/2024			06/21/2024 21:33	Jessica K Wilks	2495667