

Chemical Analysis Report

SO-DIST-2023-05-12-01

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

Event Description: **Caloosa Creeks**
Request ID: **RQ-2023-05-08-03**
Customer: **SO-DIST**
Project ID: **BMAP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
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Date Certified: 05-JUN-2023 11:21



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: Orange River at Boat Ramp

Collection Date/Time: 05/11/2023 08:38

Field ID: G3SD0128

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409231	DEP SOP: NU-094-1	Color (true)	52	A	PCU	P429836	
	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P429840	
	EPA 300.0 Rev. 2.1	Chloride	79		mg Cl/L	P430018	
		Sulfate	25		mg SO4/L	P430022	
	SM 2320 B-2011	Total Alkalinity	150		mg CaCO3/L	P430154	
	SM 2540 C-2015	TDS	364		mg/L	P430415	
	SM 2540 D-2015	TSS	8	I	mg/L	P430220	
	SM 4500-F- C-2011	Fluoride	0.22		mg F/L	P430159	
2409235	SM 5310 B-2011 dissolved	Organic Carbon	14		mg C/L	P429963	
2409239	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P430078	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P429852	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P430057	
	EPA 365.1 Rev. 2.0	Total-P	0.086		mg P/L	P429862	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P429963	
2409243	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.034		mg P/L	P429830	

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: Roberts Canal at SR 80

Collection Date/Time: 05/11/2023 09:25

Field ID: G3SD0146

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409232	DEP SOP: NU-094-1	Color (true)	47	A	PCU	P429838	
	EPA 180.1 Rev. 2.0	Turbidity	30		NTU	P429840	
	EPA 300.0 Rev. 2.1	Chloride	40		mg Cl/L	P430019	
		Sulfate	43		mg SO4/L	P430023	
	SM 2320 B-2011	Total Alkalinity	232		mg CaCO3/L	P430154	
	SM 2540 C-2015	TDS	390		mg/L	P430415	
	SM 2540 D-2015	TSS	51		mg/L	P430220	
	SM 4500-F- C-2011	Fluoride	0.46		mg F/L	P430159	
2409236	SM 5310 B-2011 dissolved	Organic Carbon	14		mg C/L	P429963	
2409240	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P430078	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P429852	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P430279	
	EPA 365.1 Rev. 2.0	Total-P	0.25		mg P/L	P430024	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P429963	
2409244	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P429830	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of analytical difficulties.

Sample Location: Nine Mile Canal at SR 80

Collection Date/Time: 05/11/2023 10:10

Field ID: G3SD0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409233	DEP SOP: NU-094-1	Color (true)	62		PCU	P429836	
	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P429840	
	EPA 300.0 Rev. 2.1	Chloride	55		mg Cl/L	P430019	
		Sulfate	23		mg SO4/L	P430023	
	SM 2320 B-2011	Total Alkalinity	113		mg CaCO3/L	P430154	
	SM 2540 C-2015	TDS	277		mg/L	P430415	
	SM 2540 D-2015	TSS	12		mg/L	P430220	
	SM 4500-F- C-2011	Fluoride	0.19		mg F/L	P430159	
2409237	SM 5310 B-2011 dissolved	Organic Carbon	15		mg C/L	P429963	
2409241	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P429971	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P429852	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.017		mg N/L	P430279	
	EPA 365.1 Rev. 2.0	Total-P	0.082		mg P/L	P429862	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P429963	
2409245	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P429830	

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: Telegraph Creek Sonde at USGS Sonde Station Collection Date/Time: 05/11/2023 11:35

Field ID: G3SD0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409234	DEP SOP: NU-094-1	Color (true)	62		PCU	P429836	
	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P429840	
	EPA 300.0 Rev. 2.1	Chloride	58		mg Cl/L	P430019	
		Sulfate	22		mg SO4/L	P430023	
	SM 2320 B-2011	Total Alkalinity	176		mg CaCO3/L	P430154	
	SM 2540 C-2015	TDS	356		mg/L	P430415	
	SM 2540 D-2015	TSS	4	I	mg/L	P430220	
	SM 4500-F- C-2011	Fluoride	0.22		mg F/L	P430159	
2409238	SM 5310 B-2011 dissolved	Organic Carbon	17		mg C/L	P429963	
2409242	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P429971	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P429852	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.041		mg N/L	P430279	
	EPA 365.1 Rev. 2.0	Total-P	0.098		mg P/L	P429862	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P429963	
2409246	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.053		mg P/L	P429830	

Ref. Method and Comment:

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: P429836

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P429838

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429840

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430018

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430019

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430022

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430023

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429971

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430078

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429852

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430057

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430279

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429862

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P430024

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P429830

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

Reference Method: SM 2320 B-2011
Batch ID: P430154

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

Reference Method: SM 2540 C-2015
Batch ID: P430415

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P430220

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P430159

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P429963

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

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P429963

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: P429836

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

Reference Method: DEP SOP: NU-094-1
Batch ID: P429838

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429840

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	97.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430018

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430019

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430022

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430023

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429971

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430078

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429852

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430057

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: P430279

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429862

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P430024

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P429830

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

Reference Method: SM 2320 B-2011
Batch ID: P430154

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.8		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P430415

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

Reference Method: SM 2540 D-2015
Batch ID: P430220

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.4		P	85 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P430159

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P429963

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

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P429963

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430018

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408931	Chloride	104		P	90 - 110
2409193	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430019

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409274	Chloride	99.5		P	90 - 110
2409324	Chloride	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430022

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408931	Sulfate	103		P	90 - 110
2409193	Sulfate	97.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430023

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409274	Sulfate	93.6		P	90 - 110
2409324	Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429971

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409263	Ammonia-N	96.4	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430078

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409208	Ammonia-N	97.8	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409239	Kjeldahl Nitrogen	106	96.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430057

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409208	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430279

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430279

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409240	NO2NO3-N	99.2	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429862

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409263	Total-P	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P429830

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409243	O-Phosphate-P	99.7	99.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P430159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409306	Fluoride	104	103	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P429963

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409277	Organic Carbon	96.0	96.8	P/P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P429963

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409277	Organic Carbon	96.0	96.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P429836

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409231	Color (true)	1.22	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P429838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409232	Color (true)	2.04	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429840

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409133	Turbidity	13.5	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430018

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408931	Chloride	1.89	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409274	Chloride	0.0348	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430022

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408931	Sulfate	2.12	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430023

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409274	Sulfate	0.498	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409263	Ammonia-N	2.43	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409208	Ammonia-N	0.312	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409239	Kjeldahl Nitrogen	5.83	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409208	NO2NO3-N	1.41	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430279

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409240	NO2NO3-N	1.46	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409263	Total-P	2.24	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P430024

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409949	Total-P	0.586	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P429830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409243	O-Phosphate-P	0.0749	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P430154

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409306	Total Alkalinity	1.10	Sample	P	0 - 3.9

Quality Assurance Report Precision

Reference Method: SM 2540 C-2015
Batch ID: P430415

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409207	TDS	3.25	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P430159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409306	Fluoride	0.480	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P429963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409277	Organic Carbon	0.610	Spike	P	0 - 20

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P429963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409277	Organic Carbon	0.610	Spike	P	0 - 20

* 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: A119142

Included Lab Sample IDs: 2409243, 2409244, 2409245, 2409246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	100	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A119145

Included Lab Sample IDs: 2409231, 2409232, 2409233, 2409234

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A119146

Included Lab Sample IDs: 2409231, 2409232, 2409233, 2409234

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	97.5	98.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A119188

Included Lab Sample IDs: 2409239, 2409241, 2409242

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A119211

Included Lab Sample IDs: 2409231, 2409232, 2409233, 2409234

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

Reference Method: SM 5310 B-2011

Run ID: A119213

Included Lab Sample IDs: 2409239, 2409240, 2409241, 2409242

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

Reference Method: SM 5310 B-2011 dissolved

Run ID: A119213

Included Lab Sample IDs: 2409235, 2409236, 2409237, 2409238

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A119214

Included Lab Sample IDs: 2409241, 2409242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A119226

Included Lab Sample IDs: 2409239, 2409240, 2409241, 2409242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.3	P/P	90 - 110
Kjeldahl Nitrogen	99.3	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A119252

Included Lab Sample IDs: 2409239

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A119259

Included Lab Sample IDs: 2409239, 2409240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	97.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A119274

Included Lab Sample IDs: 2409240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	104	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A119302

Included Lab Sample IDs: 2409231, 2409232, 2409233, 2409234

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.1	98.3	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A119302

Included Lab Sample IDs: 2409231, 2409232, 2409233, 2409234

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	103	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A119360

Included Lab Sample IDs: 2409240, 2409241, 2409242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	102	P/P	90 - 110

Quality Assurance Report

Calibration Verification

* 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)	101			1.22	
	Color (true)	103			2.04	
EPA 180.1 Rev. 2.0	Turbidity	97.5			13.5	
EPA 300.0 Rev. 2.1	Chloride	103	104	103	1.89	
	Chloride	104	99.5	107	0.0348	
	Sulfate	103	103	97.8	2.12	
	Sulfate	103	93.6	104	0.498	
EPA 350.1 Rev. 2.0	Ammonia-N	99.2	96.4	99.2		2.43
	Ammonia-N	97.2	97.8	97.4		0.312
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	106	96.4		5.83
EPA 353.2 Rev. 2.0	NO2NO3-N	102	103	102		1.41
	NO2NO3-N	103	99.2	101		1.46
EPA 365.1 Rev. 2.0	Total-P	101	104	102		2.24
	Total-P	98.8				0.586
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.3	99.7	99.6		0.0749
SM 2320 B-2011	Total Alkalinity	98.8			1.10	
SM 2540 C-2015	TDS	99.4			3.25	
SM 2540 D-2015	TSS	96.4				
SM 4500-F- C-2011	Fluoride	103	104	103		0.480
SM 5310 B-2011	Organic Carbon	98.4	96.0	96.8		0.610
SM 5310 B-2011 dissolved	Organic Carbon	98.4	96.0	96.8		0.610

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2409231, 2409232, 2409233, 2409234
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2409231, 2409232, 2409233, 2409234
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2409231, 2409232, 2409233, 2409234
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2409231, 2409232, 2409233, 2409234
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2409239, 2409240, 2409241, 2409242
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2409239, 2409240, 2409241, 2409242
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2409239, 2409240, 2409241, 2409242
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2409239, 2409240, 2409241, 2409242
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2409243, 2409244, 2409245, 2409246
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2409231, 2409232, 2409233, 2409234
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2409231, 2409232, 2409233, 2409234
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2409231, 2409232, 2409233, 2409234
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2409231, 2409232, 2409233, 2409234
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2409239, 2409240, 2409241, 2409242
SM 5310 B-2011 dissolved	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	2409235, 2409236, 2409237, 2409238

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	05/12/2023			05/12/2023 14:17	Anna M. Plaviak	2409231
	05/12/2023			05/12/2023 14:18	Anna M. Plaviak	2409233
	05/12/2023			05/12/2023 14:19	Anna M. Plaviak	2409234
	05/12/2023			05/12/2023 14:32	Anna M. Plaviak	2409232
EPA 180.1 Rev. 2.0	05/12/2023			05/12/2023 12:48	Chandler E Cox	2409231
	05/12/2023			05/12/2023 12:49	Chandler E Cox	2409232, 2409233
	05/12/2023			05/12/2023 12:50	Chandler E Cox	2409234
EPA 300.0 Rev. 2.1	05/12/2023			05/18/2023 01:16	James L Waggeberby	2409231
	05/12/2023			05/18/2023 04:01	James L Waggeberby	2409232
	05/12/2023			05/18/2023 04:16	James L Waggeberby	2409233
	05/12/2023			05/18/2023 04:31	James L Waggeberby	2409234
EPA 350.1 Rev. 2.0	05/12/2023			05/17/2023 11:05	Ping Hua	2409241
	05/12/2023			05/17/2023 11:06	Ping Hua	2409242
	05/12/2023			05/18/2023 15:54	Ping Hua	2409239
	05/12/2023			05/18/2023 15:55	Ping Hua	2409240
EPA 351.2 Rev. 2.0	05/12/2023	05/15/2023 12:40	Simonne.V. Calhoun	05/17/2023 13:24	Samantha L Bates	2409239
	05/12/2023	05/15/2023 12:40	Simonne.V. Calhoun	05/17/2023 13:29	Samantha L Bates	2409240
	05/12/2023	05/15/2023 12:40	Simonne.V. Calhoun	05/17/2023 13:31	Samantha L Bates	2409241
	05/12/2023	05/15/2023 12:40	Simonne.V. Calhoun	05/17/2023 13:36	Samantha L Bates	2409242
EPA 353.2 Rev. 2.0	05/12/2023			05/18/2023 11:58	Anna M. Plaviak	2409239
	05/12/2023			05/19/2023 10:20	Anna M. Plaviak	2409240
	05/12/2023			05/19/2023 10:27	Anna M. Plaviak	2409241
	05/12/2023			05/19/2023 10:28	Anna M. Plaviak	2409242
EPA 365.1 Rev. 2.0	05/12/2023	05/15/2023 14:57	Adam P Silver	05/16/2023 10:34	James L Waggeberby	2409239
	05/12/2023	05/15/2023 14:57	Adam P Silver	05/16/2023 10:36	James L Waggeberby	2409241
	05/12/2023	05/15/2023 14:57	Adam P Silver	05/16/2023 10:37	James L Waggeberby	2409242
	05/12/2023	05/18/2023 13:13	Adam P Silver	05/19/2023 11:17	Chandler E Cox	2409240
EPA 365.1 Rev. 2.0 dissolved	05/12/2023			05/12/2023 14:19	Elise M. Gillis	2409243
	05/12/2023			05/12/2023 14:21	Elise M. Gillis	2409244
	05/12/2023			05/12/2023 14:22	Elise M. Gillis	2409245
	05/12/2023			05/12/2023 14:23	Elise M. Gillis	2409246
SM 2320 B-2011	05/12/2023			05/19/2023 23:07	Dale L. Simmons	2409231
	05/12/2023			05/19/2023 23:22	Dale L. Simmons	2409232
	05/12/2023			05/19/2023 23:36	Dale L. Simmons	2409233
	05/12/2023			05/19/2023 23:51	Dale L. Simmons	2409234
SM 2540 C-2015	05/12/2023			05/17/2023 16:36	Yijie Li	2409231, 2409232, 2409233, 2409234
SM 2540 D-2015	05/12/2023			05/17/2023 16:36	Yijie Li	2409231, 2409232, 2409233, 2409234
SM 4500-F- C-2011	05/12/2023			05/19/2023 23:07	Dale L. Simmons	2409231
	05/12/2023			05/19/2023 23:22	Dale L. Simmons	2409232
	05/12/2023			05/19/2023 23:36	Dale L. Simmons	2409233

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500-F- C-2011	05/12/2023			05/19/2023 23:51	Dale L. Simmons	2409234
	05/12/2023			05/16/2023 20:06	Elise M. Gillis	2409239
	05/12/2023			05/16/2023 20:36	Elise M. Gillis	2409240
	05/12/2023			05/16/2023 21:09	Elise M. Gillis	2409241
	05/12/2023			05/16/2023 21:38	Elise M. Gillis	2409242
SM 5310 B-2011 dissolved	05/12/2023			05/16/2023 20:21	Elise M. Gillis	2409235
	05/12/2023			05/16/2023 20:54	Elise M. Gillis	2409236
	05/12/2023			05/16/2023 21:23	Elise M. Gillis	2409237
	05/12/2023			05/16/2023 21:53	Elise M. Gillis	2409238