

Chemical Analysis Report

SO-DIST-2024-06-11-01

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

Event Description: **Caloosa Creeks**
Request ID: **RQ-2024-05-06-03**
Customer: **SO-DIST**
Project ID: **BMAP**

Send Reports to:
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FLDEP South District Office
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 01-JUL-2024 14:36



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: 06/10/2024 09:30

Field ID: G3SD0128

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2492888	DEP SOP: NU-094-1	Color (true)	42		PCU	P446344	
	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P446350	
	EPA 300.0 Rev. 2.1	Chloride	68		mg Cl/L	P446807	
		Sulfate	24		mg SO4/L	P446812	
	SM 2320 B-2011	Total Alkalinity	122		mg CaCO3/L	P446597	
	SM 2540 C-2015	TDS	291		mg/L	P446677	
	SM 2540 D-2015	TSS	7	I	mg/L	P446669	
	SM 4500-F- C-2011	Fluoride	0.20		mg F/L	P446600	
2492892	SM 5310 B-2014 dissolved	Organic Carbon	15		mg C/L	P446604	
2492896	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P446751	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P446426	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P446475	
	EPA 365.1 Rev. 2.0	Total-P	0.074		mg P/L	P446442	
	SM 5310 B-2014	Organic Carbon	16		mg C/L	P446604	
2492900	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P446330	

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: 06/10/2024 09:50

Field ID: FB_06102024

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2492904	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P446345	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P446350	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P446807	
		Sulfate	0.20	U	mg SO4/L	P446812	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P446597	
	SM 2540 C-2015	TDS	15	U	mg/L	P446677	
	SM 2540 D-2015	TSS	2	U	mg/L	P446669	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P446600	
2492905	SM 5310 B-2014 dissolved	Organic Carbon	0.50	U	mg C/L	P446603	MS
2492906	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P446751	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P446426	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P446476	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P446442	
	SM 5310 B-2014	Organic Carbon	0.50	U	mg C/L	P446604	
2492907	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P446330	

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 80Collection Date/Time: 06/10/2024 10:30

Field ID: G3SD0146Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2492889	DEP SOP: NU-094-1	Color (true)	47	A	PCU	P446345	
	EPA 180.1 Rev. 2.0	Turbidity	5.5		NTU	P446350	
	EPA 300.0 Rev. 2.1	Chloride	60		mg Cl/L	P446807	
		Sulfate	29		mg SO4/L	P446812	
	SM 2320 B-2011	Total Alkalinity	132		mg CaCO3/L	P446597	
	SM 2540 C-2015	TDS	299		mg/L	P446677	
	SM 2540 D-2015	TSS	14		mg/L	P446669	
	SM 4500-F- C-2011	Fluoride	0.21		mg F/L	P446600	
2492893	SM 5310 B-2014 dissolved	Organic Carbon	15		mg C/L	P446604	
2492897	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P446751	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P446427	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P446476	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P446442	
	SM 5310 B-2014	Organic Carbon	15		mg C/L	P446604	
2492901	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P446330	

Ref. Method and Comment:
SM 2540 D-2015: 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: TELEGRAPH CREEK SONDE AT USGS SONDE STATION Collection Date/Time: 06/10/2024 13:00

Field ID: G3SD0129 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2492891	DEP SOP: NU-094-1	Color (true)	43		PCU	P446345	
	EPA 180.1 Rev. 2.0	Turbidity	5.3		NTU	P446350	
	EPA 300.0 Rev. 2.1	Chloride	60		mg Cl/L	P446807	
		Sulfate	22		mg SO4/L	P446812	
	SM 2320 B-2011	Total Alkalinity	145		mg CaCO3/L	P446597	
	SM 2540 C-2015	TDS	313		mg/L	P446677	
	SM 2540 D-2015	TSS	14		mg/L	P446669	
	SM 4500-F- C-2011	Fluoride	0.20		mg F/L	P446600	
2492895	SM 5310 B-2014 dissolved	Organic Carbon	15		mg C/L	P446604	
2492899	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P446751	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P446717	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P446476	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P446442	
	SM 5310 B-2014	Organic Carbon	16		mg C/L	P446604	
2492903	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.029		mg P/L	P446330	

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: P446344

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P446345

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P446350

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P446807

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P446812

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P446751

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P446426

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P446427

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P446717

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446475

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446476

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P446442

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P446330

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

Reference Method: SM 2320 B-2011
Batch ID: P446597

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

Reference Method: SM 2540 C-2015
Batch ID: P446677

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P446669

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P446600

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2014
Batch ID: P446604

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2014 dissolved
Batch ID: P446603

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

Reference Method: SM 5310 B-2014 dissolved
Batch ID: P446604

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: P446344

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	95.2		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P446345

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.1		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P446350

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P446807

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P446812

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P446751

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P446426

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P446427

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P446717

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.8		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446475

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446476

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P446442

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P446330

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

Reference Method: SM 2320 B-2011
Batch ID: P446597

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

Reference Method: SM 2540 C-2015
Batch ID: P446677

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

Reference Method: SM 2540 D-2015
Batch ID: P446669

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	88.8		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P446600

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	95 - 106

Reference Method: SM 5310 B-2014
Batch ID: P446604

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2014 dissolved
Batch ID: P446603

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.2		P	85 - 115

Reference Method: SM 5310 B-2014 dissolved
Batch ID: P446604

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: P446807

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2492868	Chloride	101		P	90 - 110
2492998	Chloride	92.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P446812

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2492868	Sulfate	102		P	90 - 110
2492998	Sulfate	105		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P446751

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2492896	Ammonia-N	91.6	95.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P446426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2492834	Kjeldahl Nitrogen	89.9	100	F/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P446427

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2492832	Kjeldahl Nitrogen	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P446717

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2492836	Kjeldahl Nitrogen	107	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446475

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2492798	NO2NO3-N	98.5	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446476

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2492897	NO2NO3-N	96.0	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P446442

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2492942	Total-P	98.2	101	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P446330

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2492802	O-Phosphate-P	99.1	99.2	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P446600

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2492837	Fluoride	98.4	100	P/P	95 - 107

Reference Method: SM 5310 B-2014
Batch ID: P446604

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2492896	Organic Carbon	98.7	101	P/P	85 - 115

Reference Method: SM 5310 B-2014 dissolved
Batch ID: P446603

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2492573	Organic Carbon	97.0	97.5	P/P	85 - 115

Reference Method: SM 5310 B-2014 dissolved
Batch ID: P446604

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2492896	Organic Carbon	98.7	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P446344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492835	Color (true)	3.01	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P446345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492889	Color (true)	1.22	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P446350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492743	Turbidity	6.33	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P446807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492868	Chloride	3.39	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P446812

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492868	Sulfate	3.76	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P446751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492896	Ammonia-N	3.19	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P446426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492834	Kjeldahl Nitrogen	6.61	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P446427

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492832	Kjeldahl Nitrogen	0.175	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P446717

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492836	Kjeldahl Nitrogen	1.34	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492798	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446476

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492897	NO2NO3-N	0.971	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P446442

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492942	Total-P	1.83	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P446330

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492802	O-Phosphate-P	0.101	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P446597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492837	Total Alkalinity	2.37	Sample	P	0 - 4.1

Reference Method: SM 2540 C-2015
Batch ID: P446677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492635	TDS	4.82	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P446600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492837	Fluoride	1.48	Spike	P	0 - 1.7

Quality Assurance Report
Precision

Reference Method: SM 5310 B-2014
Batch ID: P446604

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492896	Organic Carbon	1.64	Spike	P	0 - 15

Reference Method: SM 5310 B-2014 dissolved
Batch ID: P446603

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492573	Organic Carbon	0.582	Spike	P	0 - 15

Reference Method: SM 5310 B-2014 dissolved
Batch ID: P446604

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2492896	Organic Carbon	1.64	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: A126089

Included Lab Sample IDs: 2492900, 2492901, 2492902, 2492903, 2492907

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.4	97.8	P/P	90 - 110
O-Phosphate-P	97.8	96.3	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A126094

Included Lab Sample IDs: 2492888, 2492889, 2492890, 2492891, 2492904

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.8	99.7	P/P	90 - 110
Color (true)	99.2	98.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A126098

Included Lab Sample IDs: 2492888, 2492889, 2492890, 2492891, 2492904

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A126144

Included Lab Sample IDs: 2492896, 2492897, 2492898, 2492899, 2492906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.5	P/P	90 - 110
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A126152

Included Lab Sample IDs: 2492896, 2492899

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A126161

Included Lab Sample IDs: 2492897, 2492898, 2492906

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

Reference Method: SM 2320 B-2011

Run ID: A126180

Included Lab Sample IDs: 2492888, 2492889, 2492890, 2492891, 2492904

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.7	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A126180

Included Lab Sample IDs: 2492888, 2492889, 2492890, 2492891, 2492904

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	99.5	P/P	90 - 110

Reference Method: SM 5310 B-2014

Run ID: A126183

Included Lab Sample IDs: 2492896, 2492897, 2492898, 2492899, 2492906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.0	95.3	P/P	85 - 115

Reference Method: SM 5310 B-2014 dissolved

Run ID: A126183

Included Lab Sample IDs: 2492892, 2492893, 2492894, 2492895, 2492905

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	106	99.0	P/P	70 - 130
Organic Carbon	99.0	95.3	P/P	85 - 115

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A126224

Included Lab Sample IDs: 2492896, 2492897, 2492898, 2492906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	97.4	P/P	90 - 110
Kjeldahl Nitrogen	99.2	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A126238

Included Lab Sample IDs: 2492896, 2492897, 2492898, 2492899, 2492906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.0	98.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A126266

Included Lab Sample IDs: 2492888, 2492889, 2492890, 2492891, 2492904

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	95.9	95.1	P/P	90 - 110
Sulfate	96.4	95.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A126313

Included Lab Sample IDs: 2492899

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.1	97.6	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
DEP SOP: NU-094-1	Color (true)	95.2				3.01	
	Color (true)	97.1				1.22	
EPA 180.1 Rev. 2.0	Turbidity	101				6.33	
EPA 300.0 Rev. 2.1	Chloride	102	101	92.4		3.39	
	Sulfate	104	102	105		3.76	
EPA 350.1 Rev. 2.0	Ammonia-N	97.2	91.6	95.4			3.19
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	89.9	100			6.61
	Kjeldahl Nitrogen	103	101	101			0.175
	Kjeldahl Nitrogen	94.8	107	105			1.34
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	98.5	98.5			0.0
	NO2NO3-N	99.0	96.0	97.0			0.971
EPA 365.1 Rev. 2.0	Total-P	100	98.2	101			1.83
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	99.1	99.2			0.101
SM 2320 B-2011	Total Alkalinity	98.5				2.37	
SM 2540 C-2015	TDS	96.8				4.82	
SM 2540 D-2015	TSS	88.8					
SM 4500-F- C-2011	Fluoride	98.8	98.4	100			1.48
SM 5310 B-2014	Organic Carbon	98.8	98.7	101			1.64
SM 5310 B-2014 dissolved	Organic Carbon	99.2	97.0	97.5			0.582
	Organic Carbon	98.8	98.7	101			1.64

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2492888, 2492889, 2492890, 2492891, 2492904
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2492888, 2492889, 2492890, 2492891, 2492904
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2492888, 2492889, 2492890, 2492891, 2492904
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2492888, 2492889, 2492890, 2492891, 2492904
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2492896, 2492897, 2492898, 2492899, 2492906
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2492896, 2492897, 2492898, 2492899, 2492906
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2492896, 2492897, 2492898, 2492899, 2492906
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2492896, 2492897, 2492898, 2492899, 2492906
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2492900, 2492901, 2492902, 2492903, 2492907
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2492888, 2492889, 2492890, 2492891, 2492904
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2492888, 2492889, 2492890, 2492891, 2492904
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2492888, 2492889, 2492890, 2492891, 2492904
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2492888, 2492889, 2492890, 2492891, 2492904
SM 5310 B-2014	Nonpurgeable Organic Carbon in aqueous matrices	2492896, 2492897, 2492898, 2492899, 2492906
SM 5310 B-2014 dissolved	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	2492892, 2492893, 2492894, 2492895, 2492905

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	06/11/2024			06/11/2024 13:24	Jessica K Wilks	2492888
	06/11/2024			06/11/2024 13:27	Jessica K Wilks	2492889
	06/11/2024			06/11/2024 13:28	Jessica K Wilks	2492890, 2492891
	06/11/2024			06/11/2024 13:29	Jessica K Wilks	2492904
	06/11/2024			06/11/2024 13:42	Jessica K Wilks	2492888
EPA 180.1 Rev. 2.0	06/11/2024			06/11/2024 13:43	Jessica K Wilks	2492889
	06/11/2024			06/11/2024 13:44	Jessica K Wilks	2492890
	06/11/2024			06/11/2024 13:45	Jessica K Wilks	2492891
	06/11/2024			06/11/2024 13:46	Jessica K Wilks	2492904
	06/11/2024			06/19/2024 09:22	James L Waggerby	2492888
EPA 300.0 Rev. 2.1	06/11/2024			06/19/2024 09:37	James L Waggerby	2492889
	06/11/2024			06/19/2024 09:52	James L Waggerby	2492890
	06/11/2024			06/19/2024 10:07	James L Waggerby	2492891
	06/11/2024			06/19/2024 10:22	James L Waggerby	2492904
	06/11/2024			06/19/2024 10:59	Khloe J Berg	2492896
EPA 350.1 Rev. 2.0	06/11/2024			06/19/2024 11:04	Khloe J Berg	2492897
	06/11/2024			06/19/2024 11:05	Khloe J Berg	2492898
	06/11/2024			06/19/2024 11:07	Khloe J Berg	2492899
	06/11/2024			06/19/2024 11:08	Khloe J Berg	2492906
	06/11/2024	06/13/2024 09:59	Samantha L Bates	06/18/2024 14:06	Samantha L Bates	2492896
EPA 351.2 Rev. 2.0	06/11/2024	06/13/2024 09:59	Samantha L Bates	06/18/2024 14:08	Samantha L Bates	2492906
	06/11/2024	06/13/2024 09:59	Samantha L Bates	06/18/2024 14:26	Samantha L Bates	2492897
	06/11/2024	06/13/2024 09:59	Samantha L Bates	06/18/2024 14:28	Samantha L Bates	2492898
	06/11/2024	06/20/2024 11:52	Robyn Blevins	06/21/2024 13:29	Robyn Blevins	2492899
	06/11/2024			06/13/2024 13:18	Fadila Guebre	2492896
EPA 353.2 Rev. 2.0	06/11/2024			06/13/2024 13:25	Fadila Guebre	2492897
	06/11/2024			06/13/2024 13:31	Fadila Guebre	2492898
	06/11/2024			06/13/2024 13:33	Fadila Guebre	2492899
	06/11/2024			06/13/2024 13:34	Fadila Guebre	2492906
	06/11/2024	06/13/2024 13:13	Adam P Silver	06/14/2024 10:42	Elise M. Gillis	2492896
EPA 365.1 Rev. 2.0	06/11/2024	06/13/2024 13:13	Adam P Silver	06/14/2024 10:43	Elise M. Gillis	2492899
	06/11/2024	06/13/2024 13:13	Adam P Silver	06/14/2024 13:38	Elise M. Gillis	2492906
	06/11/2024	06/13/2024 13:13	Adam P Silver	06/14/2024 13:40	Elise M. Gillis	2492897
	06/11/2024	06/13/2024 13:13	Adam P Silver	06/14/2024 13:41	Elise M. Gillis	2492898
	06/11/2024			06/11/2024 13:34	Elise M. Gillis	2492900, 2492901
EPA 365.1 Rev. 2.0 dissolved	06/11/2024			06/11/2024 13:40	Elise M. Gillis	2492902
	06/11/2024			06/11/2024 13:41	Elise M. Gillis	2492903
	06/11/2024			06/11/2024 13:42	Elise M. Gillis	2492907
	06/11/2024			06/14/2024 05:26	Dale L. Simmons	2492888
	06/11/2024			06/14/2024 05:40	Dale L. Simmons	2492889

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-2011	06/11/2024			06/14/2024 05:54	Dale L. Simmons	2492890
	06/11/2024			06/14/2024 06:08	Dale L. Simmons	2492891
	06/11/2024			06/14/2024 06:17	Dale L. Simmons	2492904
SM 2540 C-2015	06/11/2024			06/12/2024 15:40	Yijie Li	2492888, 2492889, 2492890, 2492891, 2492904
SM 2540 D-2015	06/11/2024			06/12/2024 15:40	Yijie Li	2492888, 2492889, 2492890, 2492891, 2492904
SM 4500-F- C-2011	06/11/2024			06/14/2024 05:26	Dale L. Simmons	2492888
	06/11/2024			06/14/2024 05:40	Dale L. Simmons	2492889
	06/11/2024			06/14/2024 05:54	Dale L. Simmons	2492890
	06/11/2024			06/14/2024 06:08	Dale L. Simmons	2492891
	06/11/2024			06/14/2024 06:17	Dale L. Simmons	2492904
SM 5310 B-2014	06/11/2024			06/17/2024 19:01	Jessica K Wilks	2492896
	06/11/2024			06/17/2024 19:46	Jessica K Wilks	2492897
	06/11/2024			06/17/2024 20:02	Jessica K Wilks	2492898
	06/11/2024			06/17/2024 20:16	Jessica K Wilks	2492899
	06/11/2024			06/17/2024 20:31	Jessica K Wilks	2492906
SM 5310 B-2014 dissolved	06/11/2024			06/17/2024 17:23	Jessica K Wilks	2492905
	06/11/2024			06/17/2024 21:00	Jessica K Wilks	2492892
	06/11/2024			06/17/2024 21:15	Jessica K Wilks	2492893
	06/11/2024			06/17/2024 21:30	Jessica K Wilks	2492894
	06/11/2024			06/17/2024 21:45	Jessica K Wilks	2492895