

Chemical Analysis Report

SO-DIST-2022-09-20-01

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

Event Description: **Caloosa Creeks**
Request ID: **RQ-2022-09-05-12**
Customer: **SO-DIST**
Project ID: **BMAP**

Send Reports to:
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FLDEP South District Office
2295 Victoria Ave. Suite 364
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Date Certified: 11-OCT-2022 14:09



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: 09/19/2022 09:05

Field ID: G3SD0128

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2357543	DEP SOP: NU-094-1	Color (true)	93		PCU	P419859	
	SM 2320 B-2011	Total Alkalinity	124		mg CaCO3/L	P420277	
	SM 2540 D-2011	TSS	7	I	mg/L	P420242	
	SM 4500-F- C-2011	Fluoride	0.077	I	mg F/L	P420215	
2357548	SM 5310 B-2011 dissolved	Organic Carbon	11		mg C/L	P419945	
2357553	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P420248	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P419938	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.096		mg N/L	P420155	
	EPA 365.1 Rev. 2.0	Total-P	0.093		mg P/L	P419948	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P419945	
2357558	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.050		mg P/L	P419844	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: FB

Collection Date/Time: 09/19/2022 09:15

Field ID: FB_09192022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2357563	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P419863	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P420277	
	SM 2540 D-2011	TSS	2	U	mg/L	P420242	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P420216	
2357564	SM 5310 B-2011 dissolved	Organic Carbon	0.50	U	mg C/L	P420120	
2357565	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P420248	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P419938	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P420156	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P419948	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P420034	
2357566	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P419845	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Roberts Canal @ SR 80

Collection Date/Time: 09/19/2022 10:10

Field ID: G3SD0146

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2357544	DEP SOP: NU-094-1	Color (true)	260		PCU	P419859	
	SM 2320 B-2011	Total Alkalinity	44		mg CaCO3/L	P420277	
	SM 2540 D-2011	TSS	3	I	mg/L	P420242	
	SM 4500-F- C-2011	Fluoride	0.063	I	mg F/L	P420215	
2357549	SM 5310 B-2011 dissolved	Organic Carbon	22		mg C/L	P419945	
2357554	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P420248	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P420072	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.025		mg N/L	P420156	
	EPA 365.1 Rev. 2.0	Total-P	0.067		mg P/L	P419948	
	SM 5310 B-2011	Organic Carbon	22		mg C/L	P419945	
2357559	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.034		mg P/L	P419844	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: NINE MILE CANAL @ SR 80

Collection Date/Time: 09/19/2022 10:55

Field ID: G3SD0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2357545	DEP SOP: NU-094-1	Color (true)	67		PCU	P419859	
	SM 2320 B-2011	Total Alkalinity	213		mg CaCO3/L	P420277	
	SM 2540 D-2011	TSS	28		mg/L	P420242	
	SM 4500-F- C-2011	Fluoride	0.37		mg F/L	P420216	
2357550	SM 5310 B-2011 dissolved	Organic Carbon	15		mg C/L	P419945	
2357555	EPA 350.1 Rev. 2.0	Ammonia-N	0.26		mg N/L	P420248	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.1		mg N/L	P420073	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.89		mg N/L	P420156	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P419948	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P419945	
2357560	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.039		mg P/L	P419844	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: BEE BRANCH @ LOBLOLLY BAY RD

Collection Date/Time: 09/19/2022 11:40

Field ID: G3SD0085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2357546	DEP SOP: NU-094-1	Color (true)	500		PCU	P419859	
	SM 2320 B-2011	Total Alkalinity	15		mg CaCO3/L	P420277	
	SM 2540 D-2011	TSS	5	I	mg/L	P420242	
	SM 4500-F- C-2011	Fluoride	0.058	I	mg F/L	P420216	
2357551	SM 5310 B-2011 dissolved	Organic Carbon	39		mg C/L	P419945	
2357556	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P420248	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P420073	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P420156	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P419948	
	SM 5310 B-2011	Organic Carbon	40		mg C/L	P419945	
2357561	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P419845	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Telegraph Creek Sonde @ USGS Sonde Station Collection Date/Time: 09/19/2022 12:35

Field ID: G3SD0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2357547	DEP SOP: NU-094-1	Color (true)	270		PCU	P419863	
	SM 2320 B-2011	Total Alkalinity	35		mg CaCO3/L	P420277	
	SM 2540 D-2011	TSS	3	I A	mg/L	P420242	
	SM 4500-F- C-2011	Fluoride	0.050	I	mg F/L	P420216	
2357552	SM 5310 B-2011 dissolved	Organic Carbon	26		mg C/L	P419945	
2357557	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P420248	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P420074	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P420156	
	EPA 365.1 Rev. 2.0	Total-P	0.051		mg P/L	P419948	
	SM 5310 B-2011	Organic Carbon	26		mg C/L	P419945	
2357562	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P419845	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P419859

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P419863

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420248

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419938

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420072

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420073

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420074

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420155

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420156

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419948

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419844

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419845

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

Reference Method: SM 2320 B-2011
Batch ID: P420277

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

Reference Method: SM 2540 D-2011
Batch ID: P420242

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P420215

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P420216

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P419945

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

Reference Method: SM 5310 B-2011
Batch ID: P420034

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P419945

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

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P420120

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: P419859

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

Reference Method: DEP SOP: NU-094-1
Batch ID: P419863

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420248

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419938

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420072

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: P420073

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420074

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: P420155

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420156

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419948

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419844

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419845

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

Reference Method: SM 2320 B-2011
Batch ID: P420277

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P420215

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.9		P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P420216

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.0		P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P419945

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.6		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P420034

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

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P419945

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.6		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P420120

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420248

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357534	Ammonia-N	99.8	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357460	Kjeldahl Nitrogen	103	99.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420155

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357472	NO2NO3-N	103	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420156

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357554	NO2NO3-N	98.3	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419948

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357588	Total-P	103	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419844

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357507	O-Phosphate-P	98.3	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419845

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357735	O-Phosphate-P	95.5	92.8	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P420215

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357236	Fluoride	100	99.8	P/P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P420216

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357589	Fluoride	99.9	100	P/P	94 - 104

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P419945

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357534	Organic Carbon	97.9	97.3	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P420034

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357640	Organic Carbon	100	98.5	P/P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P419945

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357534	Organic Carbon	97.9	97.3	P/P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P420120

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357834	Organic Carbon	97.1	97.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P419859

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357471	Color (true)	1.67	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P419863

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357585	Color (true)	0.0133	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357534	Ammonia-N	0.551	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357460	Kjeldahl Nitrogen	2.09	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357730	Kjeldahl Nitrogen	3.17	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357731	Kjeldahl Nitrogen	2.49	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420074

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357445	Kjeldahl Nitrogen	12.5	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420155

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357472	NO2NO3-N	1.32	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P420156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357554	NO2NO3-N	0.449	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P419948

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357588	Total-P	2.52	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P419844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357507	O-Phosphate-P	0.204	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P419845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357735	O-Phosphate-P	1.98	Spike	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P420277

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357608	Total Alkalinity	0.499	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011

Batch ID: P420215

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357236	Fluoride	0.479	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011

Batch ID: P420216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357589	Fluoride	0.479	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011

Batch ID: P419945

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357534	Organic Carbon	0.512	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P420034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357640	Organic Carbon	1.06	Spike	P	0 - 20

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P419945

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357534	Organic Carbon	0.512	Spike	P	0 - 20

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P420120

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357834	Organic Carbon	0.576	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: A114827

Included Lab Sample IDs: 2357558, 2357559, 2357560, 2357561, 2357562, 2357566

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.2	99.1	P/P	90 - 110
O-Phosphate-P	99.1	102	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A114831

Included Lab Sample IDs: 2357543, 2357544, 2357545, 2357546

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

Reference Method: DEP SOP: NU-094-1

Run ID: A114832

Included Lab Sample IDs: 2357547, 2357563

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	104	P/P	90 - 110
Color (true)	104	100	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A114868

Included Lab Sample IDs: 2357553, 2357554, 2357555, 2357556, 2357557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	96.0	P/P	90 - 110
Organic Carbon	96.0	96.2	P/P	90 - 110

Reference Method: SM 5310 B-2011 dissolved

Run ID: A114868

Included Lab Sample IDs: 2357548, 2357549, 2357550, 2357551, 2357552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	96.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A114912

Included Lab Sample IDs: 2357565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.8	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114913

Included Lab Sample IDs: 2357553, 2357554, 2357555, 2357556, 2357557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.1	99.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114921

Included Lab Sample IDs: 2357565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.2	98.8	P/P	90 - 110

Reference Method: SM 5310 B-2011 dissolved

Run ID: A114944

Included Lab Sample IDs: 2357564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.6	95.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A114957

Included Lab Sample IDs: 2357553, 2357554, 2357555, 2357556, 2357557, 2357565

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114974

Included Lab Sample IDs: 2357554, 2357555, 2357556, 2357557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	105	P/P	90 - 110
Kjeldahl Nitrogen	108	96.7	P/P	90 - 110
Kjeldahl Nitrogen	109	104	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A114980

Included Lab Sample IDs: 2357543, 2357544, 2357545, 2357546, 2357547, 2357563

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	97.1	P/P	90 - 110
Fluoride	97.1	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A114997

Included Lab Sample IDs: 2357553, 2357554, 2357555, 2357556, 2357557, 2357565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	100	P/P	90 - 110
Ammonia-N	99.4	99.8	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A115007

Included Lab Sample IDs: 2357543, 2357544, 2357545, 2357546, 2357547, 2357563

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	97.2	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A115027

Included Lab Sample IDs: 2357553, 2357565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	102	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		LCS	Precision	MS
						SMP	
DEP SOP: NU-094-1	Color (true)	100				1.67	
	Color (true)	103				0.0133	
EPA 350.1 Rev. 2.0	Ammonia-N	96.8	99.8	99.2			0.551
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	103	99.6			2.09
	Kjeldahl Nitrogen	103					3.17
	Kjeldahl Nitrogen	102					2.49
	Kjeldahl Nitrogen	107					12.5
EPA 353.2 Rev. 2.0	NO2NO3-N	103	103	105			1.32
	NO2NO3-N	103	98.3	98.8			0.449
EPA 365.1 Rev. 2.0	Total-P	104	103	106			2.52
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.5	98.3	98.1			0.204
	O-Phosphate-P	98.9	95.5	92.8			1.98
SM 2320 B-2011	Total Alkalinity	101				0.499	
SM 4500-F- C-2011	Fluoride	99.9	100	99.8			0.479
	Fluoride	96.0	99.9	100			0.479
SM 5310 B-2011	Organic Carbon	96.6	97.9	97.3			0.512
	Organic Carbon	96.2	100	98.5			1.06
SM 5310 B-2011 dissolved	Organic Carbon	96.6	97.9	97.3			0.512
	Organic Carbon	96.0	97.1	97.9			0.576

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2357543, 2357544, 2357545, 2357546, 2357547, 2357563
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2357553, 2357554, 2357555, 2357556, 2357557, 2357565
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2357553, 2357554, 2357555, 2357556, 2357557, 2357565
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2357553, 2357554, 2357555, 2357556, 2357557, 2357565
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2357553, 2357554, 2357555, 2357556, 2357557, 2357565
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2357558, 2357559, 2357560, 2357561, 2357562, 2357566
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2357543, 2357544, 2357545, 2357546, 2357547, 2357563
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2357543, 2357544, 2357545, 2357546, 2357547, 2357563
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2357543, 2357544, 2357545, 2357546, 2357547, 2357563
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2357553, 2357554, 2357555, 2357556, 2357557, 2357565
SM 5310 B-2011 dissolved	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	2357548, 2357549, 2357550, 2357551, 2357552, 2357564

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	09/20/2022			09/20/2022 15:04	Anna M. Plaviak	2357543
	09/20/2022			09/20/2022 15:05	Anna M. Plaviak	2357545
	09/20/2022			09/20/2022 15:28	Anna M. Plaviak	2357544, 2357546
	09/20/2022			09/20/2022 15:56	Anna M. Plaviak	2357563
	09/20/2022			09/20/2022 16:12	Anna M. Plaviak	2357547
EPA 350.1 Rev. 2.0	09/20/2022			09/28/2022 13:21	Ping Hua	2357553
	09/20/2022			09/28/2022 13:22	Ping Hua	2357554
	09/20/2022			09/28/2022 13:26	Ping Hua	2357557
	09/20/2022			09/28/2022 13:29	Ping Hua	2357565
	09/20/2022			09/28/2022 14:05	Ping Hua	2357555
EPA 351.2 Rev. 2.0	09/20/2022			09/28/2022 14:06	Ping Hua	2357556
	09/20/2022	09/22/2022 09:22	Alexandra J Mattheus	09/29/2022 11:52	Samantha L Bates	2357553
	09/20/2022	09/22/2022 09:22	Alexandra J Mattheus	09/29/2022 11:54	Samantha L Bates	2357565
	09/20/2022	09/26/2022 10:38	Alexandra J Mattheus	09/27/2022 10:20	Alexandra J Mattheus	2357554
	09/20/2022	09/26/2022 10:38	Alexandra J Mattheus	09/27/2022 10:51	Alexandra J Mattheus	2357555
EPA 353.2 Rev. 2.0	09/20/2022	09/26/2022 10:38	Alexandra J Mattheus	09/27/2022 10:52	Alexandra J Mattheus	2357556
	09/20/2022	09/26/2022 10:38	Alexandra J Mattheus	09/27/2022 11:27	Alexandra J Mattheus	2357557
	09/20/2022			09/27/2022 11:00	Judith K. Clark	2357553
	09/20/2022			09/27/2022 11:07	Judith K. Clark	2357554
	09/20/2022			09/27/2022 11:15	Judith K. Clark	2357557
EPA 365.1 Rev. 2.0	09/20/2022			09/27/2022 11:16	Judith K. Clark	2357565
	09/20/2022			09/27/2022 12:12	Judith K. Clark	2357555
	09/20/2022			09/27/2022 12:13	Judith K. Clark	2357556
	09/20/2022	09/22/2022 14:19	Adam P Silver	09/22/2022 19:02	Simonne.V. Calhoun	2357553
	09/20/2022	09/22/2022 14:19	Adam P Silver	09/22/2022 19:03	Simonne.V. Calhoun	2357554
EPA 365.1 Rev. 2.0 dissolved	09/20/2022	09/22/2022 14:19	Adam P Silver	09/22/2022 19:04	Simonne.V. Calhoun	2357555
	09/20/2022	09/22/2022 14:19	Adam P Silver	09/22/2022 19:05	Simonne.V. Calhoun	2357556
	09/20/2022	09/22/2022 14:19	Adam P Silver	09/22/2022 19:06	Simonne.V. Calhoun	2357557
	09/20/2022	09/22/2022 14:19	Adam P Silver	09/23/2022 14:38	James L Waggeberby	2357565
	09/20/2022			09/20/2022 14:30	Elise M. Gillis	2357558
SM 2320 B-2011	09/20/2022			09/20/2022 14:31	Elise M. Gillis	2357559
	09/20/2022			09/20/2022 14:32	Elise M. Gillis	2357560
	09/20/2022			09/20/2022 14:44	Elise M. Gillis	2357561
	09/20/2022			09/20/2022 14:45	Elise M. Gillis	2357562
	09/20/2022			09/20/2022 14:46	Elise M. Gillis	2357566
	09/20/2022			09/29/2022 01:53	Adam P Silver	2357543
	09/20/2022			09/29/2022 02:02	Adam P Silver	2357544
	09/20/2022			09/29/2022 02:13	Adam P Silver	2357545
	09/20/2022			09/29/2022 02:24	Adam P Silver	2357546
	09/20/2022			09/29/2022 02:33	Adam P Silver	2357547

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-2011	09/20/2022			09/29/2022 02:40	Adam P Silver	2357563
SM 2540 D-2011	09/20/2022			09/21/2022 15:39	Yijie Li	2357543, 2357544, 2357545, 2357546, 2357547, 2357563
SM 4500-F- C-2011	09/20/2022			09/28/2022 03:52	Adam P Silver	2357543
	09/20/2022			09/28/2022 04:23	Adam P Silver	2357544
	09/20/2022			09/28/2022 05:32	Adam P Silver	2357545
	09/20/2022			09/28/2022 05:40	Adam P Silver	2357546
	09/20/2022			09/28/2022 05:47	Adam P Silver	2357547
SM 5310 B-2011	09/20/2022			09/28/2022 05:54	Adam P Silver	2357563
	09/20/2022			09/22/2022 03:51	Khloe J Berg	2357553
	09/20/2022			09/22/2022 04:32	Khloe J Berg	2357554
	09/20/2022			09/22/2022 04:46	Khloe J Berg	2357555
	09/20/2022			09/22/2022 05:00	Khloe J Berg	2357556
SM 5310 B-2011 dissolved	09/20/2022			09/22/2022 05:14	Khloe J Berg	2357557
	09/20/2022			09/22/2022 20:13	Khloe J Berg	2357565
	09/20/2022			09/22/2022 02:40	Khloe J Berg	2357548
	09/20/2022			09/22/2022 02:54	Khloe J Berg	2357549
	09/20/2022			09/22/2022 03:08	Khloe J Berg	2357550
	09/20/2022			09/22/2022 03:23	Khloe J Berg	2357551
	09/20/2022			09/22/2022 03:37	Khloe J Berg	2357552
	09/20/2022			09/23/2022 20:42	Khloe J Berg	2357564