

Chemical Analysis Report

SO-DIST-2022-05-13-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Caloosa Creeks**
Request ID: **RQ-2022-05-09-12**
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
Attn: Gary Snorek

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 08-JUN-2022 14:07

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

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 @BoatRamp

Collection Date/Time: 05/12/2022 09:06

Field ID: G3SD0128

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2326832	DEP SOP: NU-094-1	Color (true)**	30		PCU	P413817	
	SM 2320 B-2011	Total Alkalinity	169		mg CaCO3/L	P414066	
	SM 2540 D-2011	TSS	4	I	mg/L	P414314	
	SM 4500-F- C-2011	Fluoride	0.14		mg F/L	P414069	MS
2326836	SM 5310 B-2011 dissolved	Organic Carbon	8.9		mg C/L	P413909	
2326840	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P414331	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P414146	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P414228	
	EPA 365.1 Rev. 2.0	Total-P	0.047		mg P/L	P414230	
	SM 5310 B-2011	Organic Carbon	9.0		mg C/L	P413909	
2326844	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.013		mg P/L	P413865	

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: Orange River @BoatRamp

Collection Date/Time: 05/12/2022 09:23

Field ID: FB_05122022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2326848	DEP SOP: NU-094-1	Color (true)**	2.5	U	PCU	P413817	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P414067	
	SM 2540 D-2011	TSS	2	U	mg/L	P414314	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P414070	
2326849	SM 5310 B-2011 dissolved	Organic Carbon	0.52	I	mg C/L	P413909	
2326850	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P414362	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P414148	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P414228	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P414230	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P413909	
2326851	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P413864	

Ref. Method and Comment:

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

SM 5310 B-2011 dissolved: The result was confirmed on 05/18/2022.

Sample Location: Roberts Canal @ SR 80

Collection Date/Time: 05/12/2022 10:05

Field ID: G3SD0146

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2326833	DEP SOP: NU-094-1	Color (true)**	47		PCU	P413817	
	SM 2320 B-2011	Total Alkalinity	229		mg CaCO3/L	P414066	
	SM 2540 D-2011	TSS	30		mg/L	P414314	
	SM 4500-F- C-2011	Fluoride	0.40		mg F/L	P414069	MS
2326837	SM 5310 B-2011 dissolved	Organic Carbon	14		mg C/L	P413909	
2326841	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P414331	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P414148	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.028		mg N/L	P414228	
	EPA 365.1 Rev. 2.0	Total-P	0.064		mg P/L	P414230	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P413909	
2326845	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P413865	

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: Nine Mile Canal @ SR 80

Collection Date/Time: 05/12/2022 10:53

Field ID: G3SD0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2326834	DEP SOP: NU-094-1	Color (true)**	47		PCU	P413817	
	SM 2320 B-2011	Total Alkalinity	121		mg CaCO3/L	P414066	
	SM 2540 D-2011	TSS	10		mg/L	P414314	
	SM 4500-F- C-2011	Fluoride	0.18		mg F/L	P414069	MS
2326838	SM 5310 B-2011 dissolved	Organic Carbon	15		mg C/L	P413909	
2326842	EPA 350.1 Rev. 2.0	Ammonia-N	0.088		mg N/L	P414331	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P414148	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P414228	
	EPA 365.1 Rev. 2.0	Total-P	0.073		mg P/L	P414230	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P413909	
2326846	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P413865	

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: Telegraph Creek @ USGS

Collection Date/Time: 05/12/2022 12:13

Field ID: G3SD0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2326835	DEP SOP: NU-094-1	Color (true)**	44		PCU	P413817	
	SM 2320 B-2011	Total Alkalinity	174		mg CaCO3/L	P414066	
	SM 2540 D-2011	TSS	7	I	mg/L	P414314	
	SM 4500-F- C-2011	Fluoride	0.19		mg F/L	P414069	MS
2326839	SM 5310 B-2011 dissolved	Organic Carbon	14		mg C/L	P413909	
2326843	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P414331	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P414238	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P414228	
	EPA 365.1 Rev. 2.0	Total-P	0.094		mg P/L	P414230	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P413909	
2326847	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.037		mg P/L	P413865	

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: P413817

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414331

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414362

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414146

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414148

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414238

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414228

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414230

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P413864

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P413865

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

Reference Method: SM 2320 B-2011
Batch ID: P414066

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2320 B-2011
Batch ID: P414067

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 D-2011
Batch ID: P414314

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P414069

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P414070

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P413909

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

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P413909

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: P413817

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.4		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414331

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414362

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414146

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: P414148

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414238

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414228

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414230

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P413864

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P413865

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

Reference Method: SM 2320 B-2011
Batch ID: P414066

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.6		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P414067

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.7		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P414069

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.4		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P414070

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.9		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P413909

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.5		P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P413909

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414331

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326840	Ammonia-N	94.6	94.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414362

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2327116	Ammonia-N	99.0	96.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414146

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325443	Kjeldahl Nitrogen	99.3	97.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414148

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326731	Kjeldahl Nitrogen	98.1	92.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414228

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326775	NO2NO3-N	97.7	97.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414230

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326841	Total-P	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P413864

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326980	O-Phosphate-P	97.2	97.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P413865

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326844	O-Phosphate-P	98.3	97.4	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P414069

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2327113	Fluoride	106	107	F/F	94 - 104

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P414070

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2327257	Fluoride	97.5	96.7	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P413909

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326703	Organic Carbon	96.6	97.9	P/P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P413909

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326703	Organic Carbon	96.6	97.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P413817

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326774	Color (true)	2.65	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326840	Ammonia-N	0.371	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414362

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327116	Ammonia-N	1.34	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325443	Kjeldahl Nitrogen	1.30	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414148

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326731	Kjeldahl Nitrogen	3.03	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326979	Kjeldahl Nitrogen	5.71	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414228

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326775	NO2NO3-N	0.494	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414230

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326841	Total-P	0.870	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P413864

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326980	O-Phosphate-P	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P413865

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326844	O-Phosphate-P	0.810	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P414066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327113	Total Alkalinity	0.591	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P414067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327257	Total Alkalinity	1.61	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011
Batch ID: P414069

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327113	Fluoride	0.490	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P414070

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327257	Fluoride	0.473	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P413909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326703	Organic Carbon	0.925	Spike	P	0 - 20

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P413909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326703	Organic Carbon	0.925	Spike	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A112123

Included Lab Sample IDs: 2326832, 2326833, 2326834, 2326835, 2326848

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.3	101	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A112163

Included Lab Sample IDs: 2326844, 2326845, 2326846, 2326847, 2326851

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	100	99.7	P/P	90 - 110
O-Phosphate-P	99.4	100	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A112187

Included Lab Sample IDs: 2326840, 2326841, 2326842, 2326843, 2326850

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	97.2	P/P	90 - 110
Organic Carbon	95.4	95.4	P/P	90 - 110

Reference Method: SM 5310 B-2011 dissolved

Run ID: A112187

Included Lab Sample IDs: 2326836, 2326837, 2326838, 2326839, 2326849

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

Reference Method: SM 2320 B-2011

Run ID: A112245

Included Lab Sample IDs: 2326832, 2326833, 2326834, 2326835, 2326848

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.8	99.2	P/P	90 - 110
Total Alkalinity	98.1	97.8	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A112245

Included Lab Sample IDs: 2326832, 2326833, 2326834, 2326835, 2326848

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	101	P/P	90 - 110
Fluoride	103	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A112329

Included Lab Sample IDs: 2326840, 2326841, 2326842, 2326843, 2326850

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	98.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A112360

Included Lab Sample IDs: 2326840, 2326841, 2326842, 2326843

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	95.9	96.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A112397

Included Lab Sample IDs: 2326850

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.2	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A112401

Included Lab Sample IDs: 2326841, 2326842, 2326843

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A112404

Included Lab Sample IDs: 2326840, 2326850

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A112417

Included Lab Sample IDs: 2326843

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A112419

Included Lab Sample IDs: 2326840, 2326841, 2326842, 2326850

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	99.1	P/P	90 - 110
Kjeldahl Nitrogen	107	102	P/P	90 - 110
Kjeldahl Nitrogen	96.7	104	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)	98.4				2.65	
EPA 350.1 Rev. 2.0	Ammonia-N	94.2	94.6	94.2			0.371
	Ammonia-N	97.4	99.0	96.8			1.34
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	99.3	97.5			1.30
	Kjeldahl Nitrogen	98.5	98.1	92.6			3.03
	Kjeldahl Nitrogen	102					5.71
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	98.5	97.7	97.2			0.494
EPA 365.1 Rev. 2.0	Total-P	101	104	105			0.870
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.7	97.2	97.2			0.0
	O-Phosphate-P	104	98.3	97.4			0.810
SM 2320 B-2011	Total Alkalinity	99.6				0.591	
	Total Alkalinity	98.7				1.61	
SM 4500-F- C-2011	Fluoride	99.4	106	107			0.490
	Fluoride	99.9	97.5	96.7			0.473
SM 5310 B-2011	Organic Carbon	96.5	96.6	97.9			0.925
SM 5310 B-2011 dissolved	Organic Carbon	96.5	96.6	97.9			0.925

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2326832, 2326833, 2326834, 2326835, 2326848
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2326840, 2326841, 2326842, 2326843, 2326850
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2326840, 2326841, 2326842, 2326843, 2326850
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2326840, 2326841, 2326842, 2326843, 2326850
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2326840, 2326841, 2326842, 2326843, 2326850
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2326844, 2326845, 2326846, 2326847, 2326851
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2326832, 2326833, 2326834, 2326835, 2326848
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2326832, 2326833, 2326834, 2326835, 2326848
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2326832, 2326833, 2326834, 2326835, 2326848
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2326840, 2326841, 2326842, 2326843, 2326850
SM 5310 B-2011 dissolved	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	2326836, 2326837, 2326838, 2326839, 2326849

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	05/13/2022			05/13/2022 12:24	Samantha L Bates	2326832
	05/13/2022			05/13/2022 12:25	Samantha L Bates	2326833
	05/13/2022			05/13/2022 12:26	Samantha L Bates	2326834, 2326835
	05/13/2022			05/13/2022 12:27	Samantha L Bates	2326848
EPA 350.1 Rev. 2.0	05/13/2022			05/24/2022 13:49	Ping Hua	2326840
	05/13/2022			05/24/2022 14:00	Ping Hua	2326841
	05/13/2022			05/24/2022 14:01	Ping Hua	2326842
	05/13/2022			05/24/2022 14:04	Ping Hua	2326843
EPA 351.2 Rev. 2.0	05/13/2022			05/25/2022 12:00	Ping Hua	2326850
	05/13/2022	05/24/2022 09:04	Samantha L Bates	05/25/2022 11:17	Alexandra J Mattheus	2326840
	05/13/2022	05/24/2022 09:04	Samantha L Bates	05/25/2022 12:04	Alexandra J Mattheus	2326841
	05/13/2022	05/24/2022 09:04	Samantha L Bates	05/25/2022 12:09	Alexandra J Mattheus	2326842
EPA 353.2 Rev. 2.0	05/13/2022	05/24/2022 09:04	Samantha L Bates	05/25/2022 12:11	Alexandra J Mattheus	2326850
	05/13/2022	05/24/2022 15:12	Samantha L Bates	05/25/2022 18:24	Alexandra J Mattheus	2326843
	05/13/2022			05/23/2022 10:30	Beverly Y. Sanders	2326840
	05/13/2022			05/23/2022 10:31	Beverly Y. Sanders	2326841
EPA 365.1 Rev. 2.0	05/13/2022			05/23/2022 10:32	Beverly Y. Sanders	2326842
	05/13/2022			05/23/2022 10:34	Beverly Y. Sanders	2326843
	05/13/2022			05/23/2022 10:35	Beverly Y. Sanders	2326850
	05/13/2022	05/24/2022 03:30	Adam P Silver	05/25/2022 11:05	James L Waggeberby	2326841
EPA 365.1 Rev. 2.0 dissolved	05/13/2022	05/24/2022 03:30	Adam P Silver	05/25/2022 11:14	James L Waggeberby	2326842
	05/13/2022	05/24/2022 03:30	Adam P Silver	05/25/2022 11:15	James L Waggeberby	2326843
	05/13/2022	05/24/2022 03:30	Adam P Silver	05/25/2022 14:52	James L Waggeberby	2326850
	05/13/2022	05/24/2022 03:30	Adam P Silver	05/25/2022 14:55	James L Waggeberby	2326840
SM 2320 B-2011	05/13/2022			05/13/2022 13:50	Nathaniel J Jones	2326851
	05/13/2022			05/13/2022 14:03	Nathaniel J Jones	2326844
	05/13/2022			05/13/2022 14:11	Nathaniel J Jones	2326845
	05/13/2022			05/13/2022 14:12	Nathaniel J Jones	2326846
SM 2540 D-2011	05/13/2022			05/13/2022 14:13	Nathaniel J Jones	2326847
	05/13/2022			05/18/2022 20:44	Dale L. Simmons	2326832
	05/13/2022			05/18/2022 20:59	Dale L. Simmons	2326833
	05/13/2022			05/18/2022 21:48	Dale L. Simmons	2326834
SM 4500-F- C-2011	05/13/2022			05/18/2022 22:02	Dale L. Simmons	2326835
	05/13/2022			05/18/2022 23:31	Dale L. Simmons	2326848
	05/13/2022			05/18/2022 14:36	Yijie Li	2326832, 2326833, 2326834, 2326835, 2326848
	05/13/2022			05/18/2022 20:44	Dale L. Simmons	2326832
	05/13/2022			05/18/2022 20:59	Dale L. Simmons	2326833
	05/13/2022			05/18/2022 21:48	Dale L. Simmons	2326834
	05/13/2022			05/18/2022 22:02	Dale L. Simmons	2326835

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	05/13/2022			05/18/2022 23:31	Dale L. Simmons	2326848
SM 5310 B-2011	05/13/2022			05/16/2022 19:50	Khloe J Berg	2326840
	05/13/2022			05/16/2022 20:05	Khloe J Berg	2326841
	05/13/2022			05/16/2022 20:19	Khloe J Berg	2326842
	05/13/2022			05/16/2022 21:01	Khloe J Berg	2326843
	05/13/2022			05/16/2022 21:15	Khloe J Berg	2326850
SM 5310 B-2011 dissolved	05/13/2022			05/16/2022 18:34	Khloe J Berg	2326836
	05/13/2022			05/16/2022 18:48	Khloe J Berg	2326837
	05/13/2022			05/16/2022 19:03	Khloe J Berg	2326838
	05/13/2022			05/16/2022 19:18	Khloe J Berg	2326839
	05/13/2022			05/16/2022 19:32	Khloe J Berg	2326849