

Chemical Analysis Report

CEN-DIST-2022-03-01-01

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

Event Description: **Run 20**
Request ID: **RQ-2022-02-21-17**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 23-MAR-2022 12:01

A handwritten signature in black ink, appearing to read "Liang Lin", is shown 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: Unnamed Branch @ 750m US of confluence w/ Tomoka River **Collection Date/Time: 02/28/2022 11:50**

Field ID: G5CE0017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2308822	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P410515	
	SM 2320 B-2011	Total Alkalinity	150	A	mg CaCO3/L	P410712	
	SM 2540 D-2011	TSS	16		mg/L	P410902	
	SM 4500 F-C-2011	Fluoride	0.59		mg F/L	P410716	
2308823	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P410685	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P410550	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P410912	
	EPA 365.1 Rev. 2.0	Total-P	0.065		mg P/L	P411011	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P411060	
2308824	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P410507	

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: Groover Branch at Airport Road Bridge

Collection Date/Time: 02/28/2022 10:54

Field ID: G5CE0040

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2308825	DEP SOP: NU-094-1	Color (true)**	120		PCU	P410511	
	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P410515	
	EPA 300.0 Rev. 2.1	Chloride	45		mg Cl/L	P410852	
		Sulfate	10		mg SO4/L	P410856	
	SM 2320 B-2011	Total Alkalinity	70		mg CaCO3/L	P410710	
	SM 2540 C-2011	TDS	202		mg/L	P410755	
	SM 2540 D-2011	TSS	2	I	mg/L	P410898	
	SM 4500 F-C-2011	Fluoride	0.061	I	mg F/L	P410714	
2308826	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P410684	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.79		mg N/L	P410551	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P410871	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P410719	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P410643	
2308827	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P410506	

Ref. Method and Comment:

SM 2320 B-2011: Batch relative percent difference is unavailable because of analytical difficulties.

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

SM 4500 F-C-2011: Batch relative percent difference and matrix spike recoveries are unavailable because of analytical difficulties.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P410511

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410515

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410852

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410856

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410684

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410685

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410550

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410551

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410871

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410912

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P410719

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411011

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P410506

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P410507

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

Reference Method: SM 2320 B-2011
Batch ID: P410710

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

Reference Method: SM 2320 B-2011
Batch ID: P410712

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

Reference Method: SM 2540 C-2011
Batch ID: P410755

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P410898

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P410902

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P410714

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P410716

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P410643

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

Reference Method: SM 5310 B-2011
Batch ID: P411060

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: P410511

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410515

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	97.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410852

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410856

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410684

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410685

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410550

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410551

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410871

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410912

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P410719

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411011

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P410506

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P410507

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

Reference Method: SM 2320 B-2011
Batch ID: P410710

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.8		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P410712

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.3		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P410714

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.7		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P410716

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	93 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P410643

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.8		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P411060

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308713	Chloride	98.5		P	90 - 110
2308775	Chloride	99.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410856

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308713	Sulfate	100		P	90 - 110
2308775	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308714	Ammonia-N	96.2	96.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410685

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308743	Ammonia-N	97.6	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2307283	Kjeldahl Nitrogen	99.5	97.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410551

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308688	Kjeldahl Nitrogen	90.5	90.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410871

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308900	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410912

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308877	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P410719

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308988	Total-P	100	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P411011

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308473	Total-P	92.6	93.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P410506

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308903	O-Phosphate-P	98.9	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P410507

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308824	O-Phosphate-P	100	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Batch ID: P410716

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308822	Fluoride	101	102	P/P	92 - 107

Reference Method: SM 5310 B-2011

Batch ID: P410643

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308902	Organic Carbon	97.8	97.1	P/P	85 - 115

Reference Method: SM 5310 B-2011

Batch ID: P411060

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308823	Organic Carbon	91.9	94.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P410511

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308897	Color (true)	4.44	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308899	Turbidity	1.33	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308713	Chloride	0.288	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410856

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308713	Sulfate	0.453	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308714	Ammonia-N	0.540	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410685

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308743	Ammonia-N	1.20	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2307283	Kjeldahl Nitrogen	1.49	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410551

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308688	Kjeldahl Nitrogen	0.338	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P410871

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308900	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P410912

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308877	NO2NO3-N	0.487	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P410719

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308988	Total-P	2.83	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P411011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308473	Total-P	0.973	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P410506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308903	O-Phosphate-P	0.464	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P410507

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308824	O-Phosphate-P	0.554	Spike	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P410712

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308822	Total Alkalinity	0.372	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011

Batch ID: P410755

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308686	TDS	7.13	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P410716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308822	Fluoride	0.953	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P410643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308902	Organic Carbon	0.504	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P411060

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308823	Organic Carbon	1.90	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: A110689

Included Lab Sample IDs: 2308824, 2308827

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.6	P/P	90 - 110
O-Phosphate-P	99.6	101	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A110690

Included Lab Sample IDs: 2308825

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A110692

Included Lab Sample IDs: 2308822, 2308825

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105

Reference Method: SM 5310 B-2011

Run ID: A110740

Included Lab Sample IDs: 2308826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.6	98.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A110761

Included Lab Sample IDs: 2308823, 2308826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.3	98.2	P/P	90 - 110
Ammonia-N	98.6	98.3	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A110777

Included Lab Sample IDs: 2308822, 2308825

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.1	95.6	P/P	90 - 110
Total Alkalinity	97.1	97.2	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A110777

Included Lab Sample IDs: 2308822, 2308825

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	100	P/P	90 - 110
Fluoride	102	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A110781

Included Lab Sample IDs: 2308823, 2308826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.4	99.2	P/P	90 - 110
Kjeldahl Nitrogen	99.2	99.3	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A110831

Included Lab Sample IDs: 2308825

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110835

Included Lab Sample IDs: 2308826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110852

Included Lab Sample IDs: 2308823

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A110898

Included Lab Sample IDs: 2308826

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

Reference Method: SM 5310 B-2011

Run ID: A110922

Included Lab Sample IDs: 2308823

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.1	93.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111000

Included Lab Sample IDs: 2308823

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

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
DEP SOP: NU-094-1	Color (true)	101			4.44	
EPA 180.1 Rev. 2.0	Turbidity	97.3			1.33	
EPA 300.0 Rev. 2.1	Chloride	101	98.5	99.5	0.288	
	Sulfate	101	100	101	0.453	
EPA 350.1 Rev. 2.0	Ammonia-N	98.0	96.2	96.8		0.540
	Ammonia-N	99.6	97.6	99.4		1.20
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.6	99.5	97.3		1.49
	Kjeldahl Nitrogen	99.5	90.5	90.8		0.338
EPA 353.2 Rev. 2.0	NO2NO3-N	100	101	101		0.0
	NO2NO3-N	102	103	102		0.487
EPA 365.1 Rev. 2.0	Total-P	98.1	100	104		2.83
	Total-P	99.8	92.6	93.6		0.973
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	98.9	99.5		0.464
	O-Phosphate-P	100	100	101		0.554
SM 2320 B-2011	Total Alkalinity	97.8				
	Total Alkalinity	95.3			0.372	
SM 2540 C-2011	TDS				7.13	
SM 4500 F-C-2011	Fluoride	99.7				
	Fluoride	103	101	102		0.953
SM 5310 B-2011	Organic Carbon	93.8	97.8	97.1		0.504
	Organic Carbon	94.8	91.9	94.2		1.90

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2308825
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2308822, 2308825
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2308825
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2308825
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2308823, 2308826
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2308823, 2308826
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2308823, 2308826
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2308823, 2308826
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2308824, 2308827
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2308822, 2308825
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2308825
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2308822, 2308825
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2308822, 2308825
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2308823, 2308826

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	03/01/2022			03/01/2022 15:44	Samantha L Bates	2308825
EPA 180.1 Rev. 2.0	03/01/2022			03/01/2022 16:01	Khloe J Berg	2308822
	03/01/2022			03/01/2022 16:03	Khloe J Berg	2308825
EPA 300.0 Rev. 2.1	03/01/2022			03/08/2022 04:07	James L Waggeberby	2308825
EPA 350.1 Rev. 2.0	03/01/2022			03/04/2022 11:28	Judith K. Clark	2308826
	03/01/2022			03/04/2022 11:44	Judith K. Clark	2308823
EPA 351.2 Rev. 2.0	03/01/2022	03/03/2022 12:56	Samantha L Bates	03/04/2022 16:05	Alexandra J Mattheus	2308823
	03/01/2022	03/03/2022 12:56	Samantha L Bates	03/04/2022 16:36	Alexandra J Mattheus	2308826
EPA 353.2 Rev. 2.0	03/01/2022			03/09/2022 10:44	Beverly Y. Sanders	2308826
	03/01/2022			03/09/2022 17:50	Nathaniel J Jones	2308823
EPA 365.1 Rev. 2.0	03/01/2022	03/10/2022 14:40	Simonne.V. Calhoun	03/11/2022 16:03	Sarah A Nixon	2308826
	03/01/2022	03/14/2022 15:55	Simonne.V. Calhoun	03/16/2022 12:55	James L Waggeberby	2308823
EPA 365.1 Rev. 2.0 dissolved	03/01/2022			03/01/2022 14:59	James L Waggeberby	2308827
	03/01/2022			03/01/2022 15:08	James L Waggeberby	2308824
SM 2320 B-2011	03/01/2022			03/04/2022 02:41	Dale L. Simmons	2308825
	03/01/2022			03/04/2022 14:09	Dale L. Simmons	2308822
SM 2540 C-2011	03/01/2022			03/02/2022 14:21	Yijie Li	2308825
SM 2540 D-2011	03/01/2022			03/02/2022 14:26	Yijie Li	2308822, 2308825
SM 4500 F-C-2011	03/01/2022			03/04/2022 02:41	Dale L. Simmons	2308825
	03/01/2022			03/04/2022 12:42	Dale L. Simmons	2308822
SM 5310 B-2011	03/01/2022			03/02/2022 16:44	Khloe J Berg	2308826
	03/01/2022			03/11/2022 15:23	Khloe J Berg	2308823