

Chemical Analysis Report

TLH-ROC-2022-08-17-01

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

Event Description: **Run 12**
Request ID: **RQ-2022-08-01-30**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 08-SEP-2022 12:12



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: Watson Bayou South

Collection Date/Time: 08/17/2022 10:35

Field ID: G3TLHR0006

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2350384	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P418349	
	SM 2320 B-2011	Total Alkalinity	85		mg CaCO3/L	P418730	
	SM 2540 D-2011	TSS	3	U	mg/L	P418612	
	SM 4500-F- C-2011	Fluoride	0.79		mg F/L	P418731	
2350386	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P418539	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P418507	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P418467	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P418514	
	SM 5310 B-2011	Organic Carbon	5.3		mg C/L	P418503	

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: Watson Bayou North ENCOC

Collection Date/Time: 08/17/2022 10:55

Field ID: G3TLHR0016

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2350385	EPA 180.1 Rev. 2.0	Turbidity	5.5		NTU	P418349	
	SM 2320 B-2011	Total Alkalinity	83		mg CaCO3/L	P418730	
	SM 2540 D-2011	TSS	5	IA	mg/L	P418613	
	SM 4500-F- C-2011	Fluoride	0.55		mg F/L	P418731	
2350387	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P418539	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P418507	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.042		mg N/L	P418467	
	EPA 365.1 Rev. 2.0	Total-P	0.052		mg P/L	P418514	
	SM 5310 B-2011	Organic Carbon	7.3		mg C/L	P418503	

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: Boggy Creek @ SR22

Collection Date/Time: 08/17/2022 11:55

Field ID: G3TLHR0015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2350388	DEP SOP: NU-094-1	Color (true)	220		PCU	P418340	
	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P418347	
	EPA 300.0 Rev. 2.1	Chloride	4.8		mg Cl/L	P418868	
		Sulfate	0.32	I	mg SO4/L	P418871	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P418456	
	SM 2540 C-2011	TDS	51		mg/L	P418646	
	SM 2540 D-2011	TSS	6	I	mg/L	P418606	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P418466	
2350389	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P418541	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P418510	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.025		mg N/L	P418532	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P418512	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P418502	

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: Sandy Creek Upstream Boat Ramp

Collection Date/Time: 08/17/2022 12:25

Field ID: G3TLHR0037

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2350392	EPA 180.1 Rev. 2.0	Turbidity	5.3		NTU	P418349	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P418456	
	SM 2540 D-2011	TSS	4	I	mg/L	P418610	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P418466	
2350393	EPA 350.1 Rev. 2.0	Ammonia-N	0.035		mg N/L	P418541	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P418510	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.050		mg N/L	P418576	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P418512	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P418502	

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: 08/17/2022 12:15

Field ID: FB_08172022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2350390	EPA 180.1 Rev. 2.0	Turbidity	0.15	I	NTU	P418349	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P418456	
	SM 2540 D-2011	TSS	2	U	mg/L	P418610	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P418466	
2350391	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P418738	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P418510	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P418532	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P418512	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P418502	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The result was confirmed on 08/18/2022.

SM 2540 D-2011: 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: P418340

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418347

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418349

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418868

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418871

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418539

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418541

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418738

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418507

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418510

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418467

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418532

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418576

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418512

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418514

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

Reference Method: SM 2320 B-2011
Batch ID: P418456

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

Reference Method: SM 2320 B-2011
Batch ID: P418730

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

Reference Method: SM 2540 C-2011
Batch ID: P418646

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P418606

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P418610

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P418612

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P418613

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P418466

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P418731

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P418502

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

Reference Method: SM 5310 B-2011
Batch ID: P418503

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: P418340

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.6		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418347

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.4		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418349

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418868

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418871

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418539

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418541

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418738

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418507

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.0		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418510

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418467

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418532

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	96.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418576

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: P418512

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418514

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

Reference Method: SM 2320 B-2011
Batch ID: P418456

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.7		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P418730

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

Reference Method: SM 4500-F- C-2011
Batch ID: P418466

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	96 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P418731

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P418502

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.2		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P418503

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418868

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350379	Chloride	99.0		P	90 - 110
2350628	Chloride	98.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418871

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350379	Sulfate	99.2		P	90 - 110
2350628	Sulfate	99.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418539

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350387	Ammonia-N	98.4	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418541

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350631	Ammonia-N	96.6	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418738

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2349678	Ammonia-N	102	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418507

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2347656	Kjeldahl Nitrogen	98.8	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418510

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350542	Kjeldahl Nitrogen	109	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350386	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418532

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350380	NO2NO3-N	95.6	95.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418576

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350539	NO2NO3-N	96.5	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350479	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418514

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350116	Total-P	98.3	99.1	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P418466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350630	Fluoride	102	101	P/P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P418731

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2351804	Fluoride	98.4	98.4	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P418502

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350304	Organic Carbon	97.7	97.6	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P418503

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2349551	Organic Carbon	94.2	94.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P418340

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350628	Color (true)	0.869	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418347

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350628	Turbidity	6.60	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350794	Turbidity	10.5	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418868

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350379	Chloride	0.804	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418871

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350379	Sulfate	1.23	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350387	Ammonia-N	3.12	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418541

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350631	Ammonia-N	3.09	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2349678	Ammonia-N	3.27	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418507

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2347656	Kjeldahl Nitrogen	0.394	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418510

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350542	Kjeldahl Nitrogen	2.00	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350386	NO2NO3-N	0.480	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418532

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350380	NO2NO3-N	0.406	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418576

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350539	NO2NO3-N	0.519	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350479	Total-P	0.165	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350116	Total-P	0.780	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P418456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350630	Total Alkalinity	1.01	Sample	P	0 - 3.8

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P418730

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351804	Total Alkalinity	0.0235	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P418646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350210	TDS	3.47	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P418466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350630	Fluoride	0.484	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P418731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351804	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P418502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350304	Organic Carbon	0.0722	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P418503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2349551	Organic Carbon	0.0840	Spike	P	0 - 20

* 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: A114192

Included Lab Sample IDs: 2350388

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A114195

Included Lab Sample IDs: 2350384, 2350385, 2350388, 2350390, 2350392

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

Reference Method: SM 2320 B-2011

Run ID: A114240

Included Lab Sample IDs: 2350388, 2350390, 2350392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	96.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A114240

Included Lab Sample IDs: 2350388, 2350390, 2350392

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A114243

Included Lab Sample IDs: 2350386, 2350387

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

Reference Method: SM 5310 B-2011

Run ID: A114255

Included Lab Sample IDs: 2350386, 2350387, 2350389, 2350391, 2350393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.6	95.8	P/P	90 - 110
Organic Carbon	95.9	96.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A114268

Included Lab Sample IDs: 2350389, 2350391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.0	96.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A114274

Included Lab Sample IDs: 2350386, 2350387, 2350389, 2350393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A114274

Included Lab Sample IDs: 2350386, 2350387, 2350389, 2350393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.2	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A114291

Included Lab Sample IDs: 2350393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	98.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A114335

Included Lab Sample IDs: 2350388

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.4	98.9	P/P	90 - 110
Sulfate	99.1	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114337

Included Lab Sample IDs: 2350386, 2350387

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.5	94.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114348

Included Lab Sample IDs: 2350386, 2350387, 2350389, 2350391, 2350393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.0	P/P	90 - 110
Total-P	98.8	98.8	P/P	90 - 110
Total-P	99.8	101	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A114366

Included Lab Sample IDs: 2350384, 2350385

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.7	100	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A114366

Included Lab Sample IDs: 2350384, 2350385

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A114376

Included Lab Sample IDs: 2350391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.0	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114411

Included Lab Sample IDs: 2350389, 2350391, 2350393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.4	95.5	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)	98.6				0.869	
EPA 180.1 Rev. 2.0	Turbidity	96.4				6.60	
	Turbidity	97.2				10.5	
EPA 300.0 Rev. 2.1	Chloride	98.2	99.0	98.8		0.804	
	Sulfate	98.7	99.2	99.5		1.23	
EPA 350.1 Rev. 2.0	Ammonia-N	101	98.4	104			3.12
	Ammonia-N	101	96.6	101			3.09
	Ammonia-N	95.6	102	106			3.27
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.0	98.8	99.3			0.394
	Kjeldahl Nitrogen	100	109	105			2.00
EPA 353.2 Rev. 2.0	NO2NO3-N	101	101	101			0.480
	NO2NO3-N	96.5	95.6	95.1			0.406
	NO2NO3-N	99.0	96.5	96.0			0.519
EPA 365.1 Rev. 2.0	Total-P	103	104	104			0.165
	Total-P	103	98.3	99.1			0.780
SM 2320 B-2011	Total Alkalinity	99.7				1.01	
	Total Alkalinity	101				0.0235	
SM 2540 C-2011	TDS					3.47	
SM 4500-F- C-2011	Fluoride	102	102	101			0.484
	Fluoride	101	98.4	98.4			0.0
SM 5310 B-2011	Organic Carbon	95.2	97.7	97.6			0.0722
	Organic Carbon	96.2	94.2	94.3			0.0840

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2350388
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2350384, 2350385, 2350388, 2350390, 2350392
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2350388
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2350388
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2350386, 2350387, 2350389, 2350391, 2350393
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2350386, 2350387, 2350389, 2350391, 2350393
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2350386, 2350387, 2350389, 2350391, 2350393
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2350386, 2350387, 2350389, 2350391, 2350393
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2350384, 2350385, 2350388, 2350390, 2350392
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2350388
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2350384, 2350385, 2350388, 2350390, 2350392
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2350384, 2350385, 2350388, 2350390, 2350392
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2350386, 2350387, 2350389, 2350391, 2350393

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	08/17/2022			08/18/2022 16:17	Anna M. Plaviak	2350388
EPA 180.1 Rev. 2.0	08/17/2022			08/18/2022 14:35	Khloe J Berg	2350388
	08/17/2022			08/18/2022 15:25	Khloe J Berg	2350384
	08/17/2022			08/18/2022 15:26	Khloe J Berg	2350385
	08/17/2022			08/18/2022 15:28	Khloe J Berg	2350390
	08/17/2022			08/18/2022 15:31	Khloe J Berg	2350392
EPA 300.0 Rev. 2.1	08/17/2022			08/27/2022 01:25	Anna M. Plaviak	2350388
EPA 350.1 Rev. 2.0	08/17/2022			08/23/2022 14:36	Judith K. Clark	2350386
	08/17/2022			08/23/2022 14:38	Judith K. Clark	2350387
	08/17/2022			08/23/2022 15:36	Judith K. Clark	2350389
	08/17/2022			08/23/2022 15:38	Judith K. Clark	2350393
	08/17/2022			08/26/2022 10:49	Judith K. Clark	2350391
EPA 351.2 Rev. 2.0	08/17/2022	08/24/2022 13:30	Alexandra J Mattheus	08/29/2022 12:02	Alexandra J Mattheus	2350389
	08/17/2022	08/24/2022 13:30	Alexandra J Mattheus	08/29/2022 12:04	Alexandra J Mattheus	2350391
	08/17/2022	08/24/2022 13:30	Alexandra J Mattheus	08/29/2022 12:06	Alexandra J Mattheus	2350393
	08/17/2022	08/24/2022 13:32	Alexandra J Mattheus	08/25/2022 11:41	Samantha L Bates	2350386
	08/17/2022	08/24/2022 13:32	Alexandra J Mattheus	08/25/2022 11:43	Samantha L Bates	2350387
EPA 353.2 Rev. 2.0	08/17/2022			08/22/2022 10:58	Beverly Y. Sanders	2350386
	08/17/2022			08/22/2022 11:04	Beverly Y. Sanders	2350387
	08/17/2022			08/23/2022 11:29	Beverly Y. Sanders	2350389
	08/17/2022			08/23/2022 11:30	Beverly Y. Sanders	2350391
	08/17/2022			08/24/2022 12:01	Beverly Y. Sanders	2350393
EPA 365.1 Rev. 2.0	08/17/2022	08/24/2022 15:20	Simonne.V. Calhoun	08/25/2022 14:21	James L Waggeberby	2350391
	08/17/2022	08/24/2022 15:20	Simonne.V. Calhoun	08/25/2022 14:23	James L Waggeberby	2350389
	08/17/2022	08/24/2022 15:20	Simonne.V. Calhoun	08/25/2022 14:24	James L Waggeberby	2350393
	08/17/2022	08/24/2022 15:20	Simonne.V. Calhoun	08/25/2022 14:37	James L Waggeberby	2350387
	08/17/2022	08/24/2022 15:20	Simonne.V. Calhoun	08/25/2022 15:26	James L Waggeberby	2350386
SM 2320 B-2011	08/17/2022			08/20/2022 03:46	Adam P Silver	2350388
	08/17/2022			08/20/2022 03:55	Adam P Silver	2350390
	08/17/2022			08/20/2022 04:04	Adam P Silver	2350392
	08/17/2022			08/25/2022 23:02	Adam P Silver	2350384
	08/17/2022			08/25/2022 23:16	Adam P Silver	2350385
SM 2540 C-2011	08/17/2022			08/19/2022 15:07	Yijie Li	2350388
SM 2540 D-2011	08/17/2022			08/19/2022 15:07	Yijie Li	2350384, 2350385, 2350388, 2350390, 2350392
SM 4500-F- C-2011	08/17/2022			08/20/2022 03:46	Adam P Silver	2350388
	08/17/2022			08/20/2022 03:55	Adam P Silver	2350390
	08/17/2022			08/20/2022 04:04	Adam P Silver	2350392
	08/17/2022			08/25/2022 20:25	Adam P Silver	2350384
	08/17/2022			08/25/2022 20:30	Adam P Silver	2350385

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	08/17/2022			08/22/2022 20:37	Khloe J Berg	2350389
	08/17/2022			08/22/2022 20:53	Khloe J Berg	2350391
	08/17/2022			08/22/2022 21:07	Khloe J Berg	2350393
	08/17/2022			08/23/2022 04:30	Khloe J Berg	2350386
	08/17/2022			08/23/2022 05:04	Khloe J Berg	2350387