

Chemical Analysis Report

NE-DIST-2021-01-20-02

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

Event Description: **unnamed run 2021**

Request ID: **RQ-2021-01-11-55**

Customer: **NE-DIST**

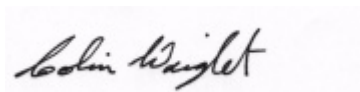
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
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Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 03-FEB-2021 10:42



NON-CONFORMANCE REPORT INCLUDED

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 Drain South Entrance

Collection Date/Time: 01/11/2021 12:15

Field ID: G5NE0591

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220169	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P392276	
	EPA 300.0 Rev. 2.1	Bromide	66		mg Br/L	P393037	
	SM 2320 B-2011	Total Alkalinity	111		mg CaCO3/L	P392573	
	SM 2540 D-2011	TSS	6	I	mg/L	P392893	
	SM 4500 F-C-2011	Fluoride	1.2		mg F/L	P392579	
2220170	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P392845	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24	I	mg N/L	P392764	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P392379	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P392364	
	SM 5310 B-2011	Organic Carbon	2.8		mg C/L	P392756	
2220171	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P392285	

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: Unnamed Drain @ Eagles Nest Rd

Collection Date/Time: 01/11/2021 13:25

Field ID: 27010079

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220172	EPA 180.1 Rev. 2.0	Turbidity	3.2	A	NTU	P392277	
	EPA 300.0 Rev. 2.1	Chloride	270		mg Cl/L	P392553	
		Sulfate	30		mg SO4/L	P392558	
	SM 2120 B-2011	Color (true)	220		PCU	P392308	
	SM 2320 B-2011	Total Alkalinity	82		mg CaCO3/L	P392572	
	SM 2540 C-2011	TDS	592		mg/L	P392806	
	SM 2540 D-2011	TSS	2	I	mg/L	P392889	
	SM 4500 F-C-2011	Fluoride	0.070	I	mg F/L	P392578	
2220173	EPA 350.1 Rev. 2.0	Ammonia-N	0.043		mg N/L	P392776	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.89		mg N/L	P392803	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P392667	
	EPA 365.1 Rev. 2.0	Total-P	0.047		mg P/L	P392492	
	SM 5310 B-2011	Organic Carbon	29		mg C/L	P392755	
2220174	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P392283	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference and batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

Non-Conformance Report

NCR ID: 8601

Event(s)

NE-DIST-2021-01-20-02

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Receiving

Observation: Samples submitted using an incorrect RQ.

Resolution: Samples cancelled and logged in under correct RQ. The incorrect LIMS ID labels were crossed out and the correct LIMS ID labels were affixed to the appropriate containers. Corrected on: 01/20/2021 at 11:15.

Customer contacted, email correspondence attached to sample submittal forms. Biology and Chemistry supervisors were notified via email.

Authorized by/Date: Colin Wright 2/3/2021

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P392276

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P392277

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392553

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392558

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393037

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P392776

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P392845

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392764

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392803

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392379

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392667

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P392364

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P392492

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392283

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392285

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

Reference Method: SM 2120 B-2011
Batch ID: P392308

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P392572

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

Reference Method: SM 2320 B-2011
Batch ID: P392573

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P392806

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P392889

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P392893

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P392578

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P392579

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P392755

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

Reference Method: SM 5310 B-2011
Batch ID: P392756

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392553

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392558

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393037

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P392776

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P392845

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392764

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: P392803

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392379

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392667

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: P392364

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: P392492

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392283

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392285

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.8		P	90 - 110

Reference Method: SM 2120 B-2011
Batch ID: P392308

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

Reference Method: SM 2320 B-2011
Batch ID: P392572

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.9		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P392573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.0		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P392578

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.7		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P392579

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.7		P	90 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P392755

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

Reference Method: SM 5310 B-2011
Batch ID: P392756

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218139	Chloride	101		P	90 - 110
2218192	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392558

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218139	Sulfate	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2219957	Bromide	90.3		P	90 - 110
2220312	Bromide	97.8	97.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P392776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218298	Ammonia-N	96.0	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P392845

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218420	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392764

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218420	Kjeldahl Nitrogen	97.8	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392803

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218608	Kjeldahl Nitrogen	103	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392379

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220170	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392667

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2219235	NO2NO3-N	102	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P392364

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2217245	Total-P	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P392492

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218195	Total-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218005	O-Phosphate-P	98.5	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392285

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220171	O-Phosphate-P	99.1	98.9	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P392578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218285	Fluoride	96.3	96.9	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P392579

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218419	Fluoride	97.3	99.7	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P392755

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220106	Organic Carbon	98.9	102	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P392756

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218991	Organic Carbon	99.4	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P392276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218192	Turbidity	0.985	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P392277

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220172	Turbidity	4.64	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218192	Chloride	0.553	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220312	Bromide	0.421	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P392776

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218298	Ammonia-N	1.49	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P392845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218420	Ammonia-N	0.902	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392764

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218420	Kjeldahl Nitrogen	3.03	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218608	Kjeldahl Nitrogen	4.64	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P392379

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220170	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P392667

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2219235	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P392364

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217245	Total-P	0.416	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P392492

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218195	Total-P	0.0145	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P392283

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218005	O-Phosphate-P	0.595	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P392285

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220171	O-Phosphate-P	0.172	Spike	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P392308

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218251	Color (true)	0.692	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P392572

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218285	Total Alkalinity	0.333	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
 Batch ID: P392573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218419	Total Alkalinity	4.71	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
 Batch ID: P392806

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218251	TDS	3.01	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
 Batch ID: P392578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218285	Fluoride	0.477	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
 Batch ID: P392579

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218419	Fluoride	1.91	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
 Batch ID: P392755

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220106	Organic Carbon	1.50	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
 Batch ID: P392756

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218991	Organic Carbon	0.894	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103013

Included Lab Sample IDs: 2220169, 2220172

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105
Turbidity	102	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103015

Included Lab Sample IDs: 2220171, 2220174

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	99.3	P/P	90 - 110
O-Phosphate-P	98.9	99.8	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A103024

Included Lab Sample IDs: 2220172

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	102	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103052

Included Lab Sample IDs: 2220170

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103081

Included Lab Sample IDs: 2220170

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103109

Included Lab Sample IDs: 2220173

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	98.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103125

Included Lab Sample IDs: 2220172

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Sulfate	103	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A103127

Included Lab Sample IDs: 2220169, 2220172

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	91.1	93.1	P/P	90 - 110
Total Alkalinity	93.1	93.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A103127

Included Lab Sample IDs: 2220169, 2220172

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.1	98.1	P/P	90 - 110
Fluoride	98.6	97.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103152

Included Lab Sample IDs: 2220173

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

Reference Method: SM 5310 B-2011

Run ID: A103188

Included Lab Sample IDs: 2220170, 2220173

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	102	P/P	90 - 110
Organic Carbon	101	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103197

Included Lab Sample IDs: 2220170, 2220173

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.1	96.5	P/P	90 - 110
Ammonia-N	98.8	98.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103219

Included Lab Sample IDs: 2220170

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.3	96.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103247

Included Lab Sample IDs: 2220173

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103266

Included Lab Sample IDs: 2220169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	96.0	96.5	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 SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					0.985	
	Turbidity					4.64	
EPA 300.0 Rev. 2.1	Bromide	99.0	97.8	97.3	90.3		0.421
	Chloride	100	101	101		0.553	
	Sulfate	102	103				
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	96.0	97.6			1.49
	Ammonia-N	96.2	100	101			0.902
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	97.8	101			3.03
	Kjeldahl Nitrogen	101	103	108			4.64
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	100			0.0
	NO2NO3-N	103	102	102			0.0
EPA 365.1 Rev. 2.0	Total-P	103	105	106			0.416
	Total-P	103	102	102			0.0145
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.5	98.5	97.8			0.595
	O-Phosphate-P	98.8	99.1	98.9			0.172
SM 2120 B-2011	Color (true)	102				0.692	
SM 2320 B-2011	Total Alkalinity	95.9				0.333	
	Total Alkalinity	97.0				4.71	
SM 2540 C-2011	TDS					3.01	
SM 4500 F-C-2011	Fluoride	95.7	96.3	96.9			0.477
	Fluoride	95.7	97.3	99.7			1.91
SM 5310 B-2011	Organic Carbon	101	98.9	102			1.50
	Organic Carbon	101	99.4	100			0.894

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2220169, 2220172
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2220169
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2220172
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2220172
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2220170, 2220173
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2220170, 2220173
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2220170, 2220173
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2220170, 2220173
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2220171, 2220174
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2220172
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2220169, 2220172
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2220172
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2220169, 2220172
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2220169, 2220172
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2220170, 2220173

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	01/12/2021			01/12/2021 16:44	Julia Storbeck	2220169, 2220172
EPA 300.0 Rev. 2.1	01/12/2021			01/15/2021 23:21	Julia Storbeck	2220172
	01/12/2021			01/27/2021 18:14	Lipi Saha	2220169
EPA 350.1 Rev. 2.0	01/12/2021			01/23/2021 12:02	Ping Hua	2220173
	01/12/2021			01/23/2021 13:55	Ping Hua	2220170
EPA 351.2 Rev. 2.0	01/12/2021	01/22/2021 13:26	Yen Ta	01/25/2021 15:58	Julia Storbeck	2220170
	01/12/2021	01/25/2021 12:37	Yen Ta	01/26/2021 14:32	Julia Storbeck	2220173
EPA 353.2 Rev. 2.0	01/12/2021			01/14/2021 09:34	Beverly Y. Sanders	2220170
	01/12/2021			01/21/2021 10:09	Beverly Y. Sanders	2220173
EPA 365.1 Rev. 2.0	01/12/2021	01/14/2021 14:05	Shengyu Wang	01/15/2021 12:35	Shengyu Wang	2220170
	01/12/2021	01/15/2021 19:22	Madeline Gruver	01/19/2021 13:11	Shengyu Wang	2220173
EPA 365.1 Rev. 2.0 dissolved	01/12/2021			01/12/2021 17:45	Virginia P. Brown	2220171
	01/12/2021			01/12/2021 18:15	Virginia P. Brown	2220174
SM 2120 B-2011	01/12/2021			01/12/2021 18:21	Benjamin T. Nordmann	2220172
SM 2320 B-2011	01/12/2021			01/15/2021 08:27	Dale L. Simmons	2220172
	01/12/2021			01/15/2021 10:29	Dale L. Simmons	2220169
SM 2540 C-2011	01/12/2021			01/15/2021 15:02	Yijie Li	2220172
SM 2540 D-2011	01/12/2021			01/15/2021 15:02	Yijie Li	2220169, 2220172
SM 4500 F-C-2011	01/12/2021			01/15/2021 08:27	Dale L. Simmons	2220172
	01/12/2021			01/15/2021 09:51	Dale L. Simmons	2220169
SM 5310 B-2011	01/12/2021			01/22/2021 04:25	Touraj Touran	2220173
	01/12/2021			01/22/2021 09:37	Touraj Touran	2220170