

Chemical Analysis Report

SW-DIST-2021-08-19-01

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

Event Description: **Run 15**
Request ID: **RQ-2021-08-09-53**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Bne Paswater

For additional information please contact
Colin Wright, Ph.D.
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: 14-SEP-2021 09:04

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular 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: Boggy Bayou North

Collection Date/Time: 08/18/2021 12:25

Field ID: G5SW0080

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270525	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P402711	
	EPA 300.0 Rev. 2.1	Bromide	58		mg Br/L	P402791	
	SM 2320 B-2011	Total Alkalinity	132		mg CaCO3/L	P402929	
	SM 2540 D-2011	TSS	4	I	mg/L	P403243	
	SM 4500 F-C-2011	Fluoride	1.0		mg F/L	P402930	
2270527	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P403036	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P403260	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P402875	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P402891	
	SM 5310 B-2011	Organic Carbon	5.3		mg C/L	P403057	
2270529	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P402699	

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 Bayou South

Collection Date/Time: 08/18/2021 12:00

Field ID: G5SW0081

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270526	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P402711	
	EPA 300.0 Rev. 2.1	Bromide	62		mg Br/L	P402791	
	SM 2320 B-2011	Total Alkalinity	129		mg CaCO3/L	P402929	
	SM 2540 D-2011	TSS	4	IA	mg/L	P403244	
	SM 4500 F-C-2011	Fluoride	1.1		mg F/L	P402930	
2270528	EPA 350.1 Rev. 2.0	Ammonia-N	0.050		mg N/L	P403036	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P403260	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.064		mg N/L	P402875	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P402891	
	SM 5310 B-2011	Organic Carbon	5.0		mg C/L	P403057	
2270530	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P402699	

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: Lake Innisbrook

Collection Date/Time: 08/18/2021 11:15

Field ID: G5SW0040

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270522	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P402711	
	EPA 300.0 Rev. 2.1	Chloride	64		mg Cl/L	P403163	
		Sulfate	13		mg SO4/L	P403165	
	SM 2120 B-2011	Color (true)	110		PCU	P402712	
	SM 2320 B-2011	Total Alkalinity	89		mg CaCO3/L	P402850	
	SM 2540 C-2011	TDS	254		mg/L	P403217	
	SM 2540 D-2011	TSS	6	I	mg/L	P403196	
2270523	SM 4500 F-C-2011	Fluoride	0.25		mg F/L	P402852	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.048		mg N/L	P403077	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P403157	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P402937	
	EPA 365.1 Rev. 2.0	Total-P	0.42		mg P/L	P402820	
2270524	SM 5310 B-2011	Organic Carbon	20		mg C/L	P403240	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.31		mg P/L	P402698	

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: EPA 180.1 Rev. 2.0
Batch ID: P402711

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402791

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403163

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403165

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403036

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403077

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403157

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403260

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402875

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: P402937

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402820

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402891

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402698

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402699

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

Reference Method: SM 2120 B-2011
Batch ID: P402712

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P402850

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

Reference Method: SM 2320 B-2011
Batch ID: P402929

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

Reference Method: SM 2540 C-2011
Batch ID: P403217

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P403196

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P403243

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P403244

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P402852

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P402930

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P403057

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

Reference Method: SM 5310 B-2011
Batch ID: P403240

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: P402791

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	108		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403163

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403165

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403036

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403077

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403157

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: P403260

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402875

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: P402937

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402820

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402891

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: P402698

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402699

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

Reference Method: SM 2120 B-2011
Batch ID: P402712

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

Reference Method: SM 2320 B-2011
Batch ID: P402850

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

Reference Method: SM 2320 B-2011
Batch ID: P402929

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

Reference Method: SM 4500 F-C-2011
Batch ID: P402852

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P402930

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	93 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P403057

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.0		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P403240

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402791

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269282	Bromide	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403163

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270411	Chloride	99.5		P	90 - 110
2270555	Chloride	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403165

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270411	Sulfate	99.6		P	90 - 110
2270555	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403036

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2271709	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270542	Ammonia-N	96.2	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403260

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270527	Kjeldahl Nitrogen	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270527	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270418	NO2NO3-N	94.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402820

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270695	Total-P	104	106	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402891

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2268862	Total-P	103	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270543	O-Phosphate-P	98.9	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402699

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270529	O-Phosphate-P	96.3	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P402852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270807	Fluoride	100	99.0	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P402930

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270945	Fluoride	96.7	98.1	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P403057

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270528	Organic Carbon	95.8	94.6	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P403240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270722	Organic Carbon	94.0	97.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P402711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270492	Turbidity	4.80	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402791

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269282	Bromide	2.57	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403163

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270411	Chloride	0.0268	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403165

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270411	Sulfate	0.650	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403036

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2271709	Ammonia-N	0.415	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270542	Ammonia-N	0.180	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270523	Kjeldahl Nitrogen	2.74	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403260

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270527	Kjeldahl Nitrogen	0.348	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270527	NO2NO3-N	0.318	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270418	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402820

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270695	Total-P	1.15	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268862	Total-P	1.49	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270543	O-Phosphate-P	0.101	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402699

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270529	O-Phosphate-P	4.37	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P402712

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270495	Color (true)	1.65	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P402850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270807	Total Alkalinity	1.71	Sample	P	0 - 5.2

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
 Batch ID: P402929

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270945	Total Alkalinity	0.277	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
 Batch ID: P403217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270495	TDS	2.88	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
 Batch ID: P402852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270807	Fluoride	0.953	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
 Batch ID: P402930

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270945	Fluoride	0.953	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
 Batch ID: P403057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270528	Organic Carbon	1.07	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
 Batch ID: P403240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270722	Organic Carbon	1.99	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: A107343

Included Lab Sample IDs: 2270524, 2270529, 2270530

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A107344

Included Lab Sample IDs: 2270522, 2270525, 2270526

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

Reference Method: SM 2120 B-2011

Run ID: A107345

Included Lab Sample IDs: 2270522

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A107375

Included Lab Sample IDs: 2270525, 2270526

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	105	109	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A107408

Included Lab Sample IDs: 2270522

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

Reference Method: SM 4500 F-C-2011

Run ID: A107408

Included Lab Sample IDs: 2270522

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: A107426

Included Lab Sample IDs: 2270527, 2270528

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A107449

Included Lab Sample IDs: 2270522

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

Quality Assurance Report

Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A107449

Included Lab Sample IDs: 2270522

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	99.6	99.2	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A107452

Included Lab Sample IDs: 2270525, 2270526

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

Reference Method: SM 4500 F-C-2011

Run ID: A107452

Included Lab Sample IDs: 2270525, 2270526

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107455

Included Lab Sample IDs: 2270523

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107480

Included Lab Sample IDs: 2270523

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107482

Included Lab Sample IDs: 2270527, 2270528

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	99.1	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A107501

Included Lab Sample IDs: 2270527, 2270528

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	96.2	P/P	90 - 110
Organic Carbon	97.0	97.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107511

Included Lab Sample IDs: 2270523

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107534

Included Lab Sample IDs: 2270527, 2270528

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107566

Included Lab Sample IDs: 2270523

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

Reference Method: SM 5310 B-2011

Run ID: A107593

Included Lab Sample IDs: 2270523

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	96.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107619

Included Lab Sample IDs: 2270527, 2270528

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.8	P/P	90 - 110
Kjeldahl Nitrogen	104	102	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				4.80	
EPA 300.0 Rev. 2.1	Bromide	108	100		2.57	
	Chloride	100	99.5	99.9	0.0268	
	Sulfate	99.9	99.6	101	0.650	
	Ammonia-N	98.8	101	102		0.415
EPA 350.1 Rev. 2.0	Ammonia-N	98.2	96.2	96.4		0.180
	Kjeldahl Nitrogen	104				2.74
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	101	101		0.348
	NO2NO3-N	100	101	102		0.318
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	94.8			0.0
	Total-P	102	104	106		1.15
EPA 365.1 Rev. 2.0	Total-P	101	103	105		1.49
	O-Phosphate-P	99.5	98.9	99.0		0.101
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	96.3	101		4.37
SM 2120 B-2011	Color (true)	102			1.65	
SM 2320 B-2011	Total Alkalinity	101			1.71	
	Total Alkalinity	101			0.277	
SM 2540 C-2011	TDS				2.88	
SM 4500 F-C-2011	Fluoride	102	100	99.0		0.953
	Fluoride	99.2	96.7	98.1		0.953
SM 5310 B-2011	Organic Carbon	95.0	95.8	94.6		1.07
	Organic Carbon	96.7	94.0	97.5		1.99

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2270522, 2270525, 2270526
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2270525, 2270526
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2270522
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2270522
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2270523, 2270527, 2270528
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2270523, 2270527, 2270528
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2270523, 2270527, 2270528
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2270523, 2270527, 2270528
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2270524, 2270529, 2270530
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2270522
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2270522, 2270525, 2270526
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2270522
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2270522, 2270525, 2270526
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2270522, 2270525, 2270526
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2270523, 2270527, 2270528

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	08/19/2021			08/19/2021 13:01	Sarah A Nixon	2270522, 2270525, 2270526
EPA 300.0 Rev. 2.1	08/19/2021			08/21/2021 05:14	Lipi Saha	2270525
	08/19/2021			08/21/2021 05:33	Lipi Saha	2270526
	08/19/2021			08/27/2021 16:12	Lipi Saha	2270522
EPA 350.1 Rev. 2.0	08/19/2021			08/26/2021 14:51	Ping Hua	2270527
	08/19/2021			08/26/2021 14:52	Ping Hua	2270528
	08/19/2021			08/27/2021 12:19	Ping Hua	2270523
EPA 351.2 Rev. 2.0	08/19/2021	08/30/2021 13:46	Benjamin T. Nordmann	08/31/2021 11:25	Alexandra J Mattheus	2270523
	08/19/2021	09/01/2021 12:09	Benjamin T. Nordmann	09/02/2021 11:56	Alexandra J Mattheus	2270527
	08/19/2021	09/01/2021 12:09	Benjamin T. Nordmann	09/02/2021 12:04	Alexandra J Mattheus	2270528
EPA 353.2 Rev. 2.0	08/19/2021			08/24/2021 11:11	Beverly Y. Sanders	2270527
	08/19/2021			08/24/2021 11:19	Beverly Y. Sanders	2270528
	08/19/2021			08/25/2021 09:00	Beverly Y. Sanders	2270523
EPA 365.1 Rev. 2.0	08/19/2021	08/23/2021 13:48	Simonne.V. Calhoun	08/25/2021 16:57	Shengyu Ding	2270523
	08/19/2021	08/24/2021 14:32	Simonne.V. Calhoun	08/26/2021 16:45	Shengyu Ding	2270527
	08/19/2021	08/24/2021 14:32	Simonne.V. Calhoun	08/26/2021 16:46	Shengyu Ding	2270528
EPA 365.1 Rev. 2.0 dissolved	08/19/2021			08/19/2021 13:29	James L Waggeberby	2270524
	08/19/2021			08/19/2021 13:38	James L Waggeberby	2270529
	08/19/2021			08/19/2021 13:41	James L Waggeberby	2270530
SM 2120 B-2011	08/19/2021			08/19/2021 16:38	Sarah A Nixon	2270522
SM 2320 B-2011	08/19/2021			08/23/2021 21:11	Sarah A Nixon	2270522
	08/19/2021			08/24/2021 17:42	Dale L. Simmons	2270525
	08/19/2021			08/24/2021 17:57	Dale L. Simmons	2270526
SM 2540 C-2011	08/19/2021			08/23/2021 15:36	Yijie Li	2270522
SM 2540 D-2011	08/19/2021			08/23/2021 15:36	Yijie Li	2270522, 2270525, 2270526
SM 4500 F-C-2011	08/19/2021			08/23/2021 21:11	Sarah A Nixon	2270522
	08/19/2021			08/24/2021 15:38	Dale L. Simmons	2270525
	08/19/2021			08/24/2021 15:44	Dale L. Simmons	2270526
SM 5310 B-2011	08/19/2021			08/26/2021 11:37	Madeline Gruver	2270528
	08/19/2021			08/26/2021 15:40	Madeline Gruver	2270527
	08/19/2021			08/31/2021 05:27	Touraj Touran	2270523