

Chemical Analysis Report

SO-DIST-2021-09-08-01

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

Event Description: **2021SMP_CapeHorseshoe**

Request ID: **RQ-2021-09-06-62**

Customer: **SO-DIST**

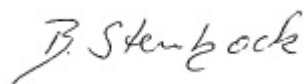
Project ID: **SMP**

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Date Certified: 28-SEP-2021 18:27



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: Horseshoe Canal @ NW15 Ter.

Collection Date/Time: 09/07/2021 10:00

Field ID: G2SD0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2274021	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P403484	
	EPA 300.0 Rev. 2.1	Chloride	80		mg Cl/L	P403561	
		Sulfate	25		mg SO4/L	P403562	
	SM 2120 B-2011	Color (true)	31		PCU	P403486	
	SM 2320 B-2011	Total Alkalinity	197		mg CaCO3/L	P403655	
	SM 2540 C-2011	TDS	368		mg/L	P403987	
	SM 2540 D-2011	TSS	2	I	mg/L	P403978	
	SM 4500 F-C-2011	Fluoride	0.19		mg F/L	P403659	
2274023	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P403534	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.79		mg N/L	P403513	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.017		mg N/L	P403576	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P403502	
	SM 5310 B-2011	Organic Carbon	7.6		mg C/L	P403619	
2274025	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P403473	

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: Shadrow Canal @ El Dorado

Collection Date/Time: 09/07/2021 12:20

Field ID: G2SD0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2274022	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P403484	
	EPA 300.0 Rev. 2.1	Chloride	73		mg Cl/L	P403561	
		Sulfate	33		mg SO4/L	P403562	
	SM 2120 B-2011	Color (true)	33		PCU	P403486	
	SM 2320 B-2011	Total Alkalinity	212		mg CaCO3/L	P403655	
	SM 2540 C-2011	TDS	411	A	mg/L	P403987	
	SM 2540 D-2011	TSS	4	IA	mg/L	P403978	
	SM 4500 F-C-2011	Fluoride	0.18		mg F/L	P403659	
2274024	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P403641	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P403513	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P403576	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P403502	
	SM 5310 B-2011	Organic Carbon	9.2		mg C/L	P403619	
2274026	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P403473	

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: 09/07/2021 12:30

Field ID: FB_09072021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2274027	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P403484	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P403561	
		Sulfate	0.20	U	mg SO4/L	P403562	
	SM 2120 B-2011	Color (true)	2.5	U	PCU	P403486	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P403655	
	SM 2540 C-2011	TDS	15	U	mg/L	P403987	
	SM 2540 D-2011	TSS	2	U	mg/L	P403978	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P403659	
2274028	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P403641	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P403593	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P403576	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P403502	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P403619	
2274029	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P403473	

Ref. Method and Comment:

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: EPA 180.1 Rev. 2.0
Batch ID: P403484

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403561

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403562

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403534

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403641

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403513

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403593

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403576

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403502

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403473

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

Reference Method: SM 2120 B-2011
Batch ID: P403486

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P403655

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

Reference Method: SM 2540 C-2011
Batch ID: P403987

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P403978

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P403659

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P403619

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: P403561

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403562

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403534

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: P403641

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403513

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403593

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: P403576

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403502

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403473

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P403486

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

Reference Method: SM 2320 B-2011
Batch ID: P403655

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P403659

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P403619

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273474	Chloride	98.6		P	90 - 110
2273816	Chloride	99.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403562

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273474	Sulfate	97.7		P	90 - 110
2273816	Sulfate	99.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403534

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2274023	Ammonia-N	95.8	94.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403641

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273985	Ammonia-N	97.6	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403513

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273870	Kjeldahl Nitrogen	108	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403593

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2274284	Kjeldahl Nitrogen	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403576

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2274024	NO2NO3-N	97.3	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403502

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273985	Total-P	101	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403473

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273751	O-Phosphate-P	103	102	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P403659

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2274983	Fluoride	99.6	99.1	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P403619

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273871	Organic Carbon	95.3	95.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P403484

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273738	Turbidity	2.69	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273474	Chloride	0.375	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273474	Sulfate	1.01	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274023	Ammonia-N	0.899	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403641

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273985	Ammonia-N	0.157	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403513

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273870	Kjeldahl Nitrogen	2.68	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403593

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274284	Kjeldahl Nitrogen	0.700	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403576

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274024	NO2NO3-N	0.482	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P403502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273985	Total-P	1.54	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P403473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273751	O-Phosphate-P	0.791	Spike	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P403486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273738	Color (true)	1.05	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P403655

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274983	Total Alkalinity	0.789	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011

Batch ID: P403987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274022	TDS	3.41	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011

Batch ID: P403659

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274983	Fluoride	0.479	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011

Batch ID: P403619

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273871	Organic Carbon	0.0751	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: A107681

Included Lab Sample IDs: 2274025, 2274026, 2274029

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A107683

Included Lab Sample IDs: 2274021, 2274022, 2274027

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

Reference Method: SM 2120 B-2011

Run ID: A107684

Included Lab Sample IDs: 2274021, 2274022, 2274027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.9	99.4	P/P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A107690

Included Lab Sample IDs: 2274021, 2274022, 2274027

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107700

Included Lab Sample IDs: 2274023

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107728

Included Lab Sample IDs: 2274023, 2274024, 2274028

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107733

Included Lab Sample IDs: 2274023, 2274024, 2274028

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107739

Included Lab Sample IDs: 2274023, 2274024

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107739

Included Lab Sample IDs: 2274023, 2274024

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

Reference Method: SM 5310 B-2011

Run ID: A107751

Included Lab Sample IDs: 2274023, 2274024, 2274028

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	97.6	P/P	90 - 110
Organic Carbon	97.6	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107756

Included Lab Sample IDs: 2274028

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	97.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107757

Included Lab Sample IDs: 2274024, 2274028

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.3	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A107760

Included Lab Sample IDs: 2274021, 2274022, 2274027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A107760

Included Lab Sample IDs: 2274021, 2274022, 2274027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	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		LCS	Precision	
						SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					2.69	
EPA 300.0 Rev. 2.1	Chloride	98.0	98.6	99.4		0.375	
	Sulfate	98.4	97.7	99.0		1.01	
EPA 350.1 Rev. 2.0	Ammonia-N	101	95.8	94.4			0.899
	Ammonia-N	100	97.6	97.8			0.157
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	108	104			2.68
	Kjeldahl Nitrogen	101	102	101			0.700
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	97.3	96.8			0.482
EPA 365.1 Rev. 2.0	Total-P	105	101	103			1.54
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	103	102			0.791
SM 2120 B-2011	Color (true)	101				1.05	
SM 2320 B-2011	Total Alkalinity	104				0.789	
SM 2540 C-2011	TDS					3.41	
SM 4500 F-C-2011	Fluoride	100	99.6	99.1			0.479
SM 5310 B-2011	Organic Carbon	97.2	95.3	95.2			0.0751

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2274021, 2274022, 2274027
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2274021, 2274022, 2274027
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2274021, 2274022, 2274027
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2274023, 2274024, 2274028
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2274023, 2274024, 2274028
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2274023, 2274024, 2274028
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2274023, 2274024, 2274028
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2274025, 2274026, 2274029
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2274021, 2274022, 2274027
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2274021, 2274022, 2274027
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2274021, 2274022, 2274027
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2274021, 2274022, 2274027
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2274021, 2274022, 2274027
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2274023, 2274024, 2274028

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	09/08/2021			09/08/2021 16:49	Sarah A Nixon	2274021, 2274022, 2274027
EPA 300.0 Rev. 2.1	09/08/2021			09/09/2021 17:41	Roberta Tatti	2274021
	09/08/2021			09/09/2021 17:53	Roberta Tatti	2274022
	09/08/2021			09/09/2021 18:05	Roberta Tatti	2274027
EPA 350.1 Rev. 2.0	09/08/2021			09/09/2021 13:20	Ping Hua	2274023
	09/08/2021			09/13/2021 11:55	Ping Hua	2274024
	09/08/2021			09/13/2021 12:00	Ping Hua	2274028
EPA 351.2 Rev. 2.0	09/08/2021	09/09/2021 12:35	Benjamin T. Nordmann	09/10/2021 12:58	Virginia P. Brown	2274023
	09/08/2021	09/09/2021 12:35	Benjamin T. Nordmann	09/10/2021 13:00	Virginia P. Brown	2274024
	09/08/2021	09/10/2021 13:45	Benjamin T. Nordmann	09/13/2021 11:38	Alexandra J Mattheus	2274028
EPA 353.2 Rev. 2.0	09/08/2021			09/10/2021 09:54	Beverly Y. Sanders	2274024
	09/08/2021			09/10/2021 10:04	Beverly Y. Sanders	2274028
	09/08/2021			09/10/2021 11:04	Beverly Y. Sanders	2274023
EPA 365.1 Rev. 2.0	09/08/2021	09/09/2021 13:50	Simonne.V. Calhoun	09/10/2021 12:52	Lipi Saha	2274023
	09/08/2021	09/09/2021 13:50	Simonne.V. Calhoun	09/10/2021 12:53	Lipi Saha	2274024
	09/08/2021	09/09/2021 13:50	Simonne.V. Calhoun	09/10/2021 12:54	Lipi Saha	2274028
EPA 365.1 Rev. 2.0 dissolved	09/08/2021			09/08/2021 15:38	James L Waggeberby	2274025
	09/08/2021			09/08/2021 15:39	James L Waggeberby	2274026
	09/08/2021			09/08/2021 15:40	James L Waggeberby	2274029
SM 2120 B-2011	09/08/2021			09/08/2021 17:33	Madeline Gruver	2274021
	09/08/2021			09/08/2021 17:34	Madeline Gruver	2274022, 2274027
SM 2320 B-2011	09/08/2021			09/13/2021 22:43	Dale L. Simmons	2274021
	09/08/2021			09/13/2021 22:59	Dale L. Simmons	2274022
	09/08/2021			09/13/2021 23:08	Dale L. Simmons	2274027
SM 2540 C-2011	09/08/2021			09/13/2021 14:36	Yijie Li	2274021, 2274022, 2274027
SM 2540 D-2011	09/08/2021			09/13/2021 14:36	Yijie Li	2274021, 2274022, 2274027
SM 4500 F-C-2011	09/08/2021			09/13/2021 22:43	Dale L. Simmons	2274021
	09/08/2021			09/13/2021 22:59	Dale L. Simmons	2274022
	09/08/2021			09/13/2021 23:08	Dale L. Simmons	2274027
SM 5310 B-2011	09/08/2021			09/10/2021 20:50	Madeline Gruver	2274023
	09/08/2021			09/10/2021 21:03	Madeline Gruver	2274024
	09/08/2021			09/10/2021 21:47	Madeline Gruver	2274028