

Chemical Analysis Report

CEN-DIST-2022-04-19-01

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

Event Description: **Run 21**
Request ID: **RQ-2022-04-11-28**
Customer: **CEN-DIST**
Project ID: **SMP**

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Date Certified: 09-MAY-2022 10:01



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: Bugg Spring @ vent

Collection Date/Time: 04/18/2022 16:00

Field ID: G1CE0109

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2320031	DEP SOP: NU-094-1	Color (true)**	5.5	I	PCU	P412563	
	EPA 180.1 Rev. 2.0	Turbidity	0.30	I	NTU	P412572	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P412953	
		Sulfate	11		mg SO4/L	P412956	
	SM 2320 B-2011	Total Alkalinity	136	A	mg CaCO3/L	P413141	
	SM 2540 C-2011	TDS	205		mg/L	P413062	
	SM 2540 D-2011	TSS	2	U	mg/L	P412989	
	SM 4500-F- C-2011	Fluoride	0.054	I	mg F/L	P413148	
2320033	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P412707	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.13	I	mg N/L	P413005	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.79		mg N/L	P412610	
	EPA 365.1 Rev. 2.0	Total-P	0.080		mg P/L	P413048	
	SM 5310 B-2011	Organic Carbon	1.5		mg C/L	P412742	

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: 04/18/2022 12:03

Field ID: FB_04182022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2320035	DEP SOP: NU-094-1	Color (true)**	2.5	U	PCU	P412563	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P412572	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P412953	
		Sulfate	0.20	U	mg SO4/L	P412956	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P413141	
	SM 2540 C-2011	TDS	15	U	mg/L	P413060	
	SM 2540 D-2011	TSS	2	U	mg/L	P412987	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P413148	
2320036	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P412707	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P413094	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P412790	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P412798	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P412742	

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.

Sample Location: Hidden Lake @ Center

Collection Date/Time: 04/18/2022 13:18

Field ID: G4CE0158

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2320032	DEP SOP: NU-094-1	Color (true)**	97		PCU	P412563	
	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P412572	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P412953	
		Sulfate	0.84		mg SO4/L	P412956	
	SM 2320 B-2011	Total Alkalinity	115		mg CaCO3/L	P413141	
	SM 2540 C-2011	TDS	190	A	mg/L	P413063	
	SM 2540 D-2011	TSS	3	IA	mg/L	P412990	
	SM 4500-F- C-2011	Fluoride	0.14		mg F/L	P413148	
2320034	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P412707	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.89		mg N/L	P413005	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P412789	
	EPA 365.1 Rev. 2.0	Total-P	0.062		mg P/L	P413048	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P412742	

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: DEP SOP: NU-094-1
Batch ID: P412563

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412572

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412953

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412956

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412707

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413005

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413094

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412610

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412789

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: P412790

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412798

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413048

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

Reference Method: SM 2320 B-2011
Batch ID: P413141

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

Reference Method: SM 2540 C-2011
Batch ID: P413060

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P413062

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P413063

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P412987

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P412989

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P412990

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P413148

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P412742

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: P412563

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412572

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	95.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412953

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412956

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412707

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413005

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	92.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413094

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.9		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412610

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412789

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412790

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412798

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413048

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

Reference Method: SM 2320 B-2011
Batch ID: P413141

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.7		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P413148

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.1		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P412742

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412953

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319884	Chloride	101		P	90 - 110
2319984	Chloride	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412956

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319884	Sulfate	99.4		P	90 - 110
2319984	Sulfate	97.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320007	Ammonia-N	97.8	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413005

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320033	Kjeldahl Nitrogen	94.8	98.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412610

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319985	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319680	NO2NO3-N	99.8	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412790

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320364	NO2NO3-N	93.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412798

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320021	Total-P	101	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2321462	Total-P	104	105	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P413148

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320031	Fluoride	98.6	98.6	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P412742

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320074	Organic Carbon	99.7	98.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P412563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320004	Color (true)	3.52	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320005	Turbidity	2.14	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412953

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319884	Chloride	5.81	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412956

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319884	Sulfate	4.79	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320007	Ammonia-N	0.542	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413005

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320033	Kjeldahl Nitrogen	3.11	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413094

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320130	Kjeldahl Nitrogen	9.97	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412610

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319985	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319680	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412790

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320364	NO2NO3-N	0.177	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320021	Total-P	2.39	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2321462	Total-P	0.503	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P413141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320031	Total Alkalinity	0.296	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P413060

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319521	TDS	2.52	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P413062

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319891	TDS	6.74	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P413063

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320032	TDS	2.11	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P413148

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320031	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P412742

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320074	Organic Carbon	0.755	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: A111556

Included Lab Sample IDs: 2320031, 2320032, 2320035

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A111559

Included Lab Sample IDs: 2320031, 2320032, 2320035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A111570

Included Lab Sample IDs: 2320033

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A111601

Included Lab Sample IDs: 2320033, 2320034, 2320036

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.4	98.7	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A111622

Included Lab Sample IDs: 2320033, 2320034, 2320036

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A111649

Included Lab Sample IDs: 2320034, 2320036

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A111715

Included Lab Sample IDs: 2320031, 2320032, 2320035

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111774

Included Lab Sample IDs: 2320036

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111774

Included Lab Sample IDs: 2320036

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	103	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A111807

Included Lab Sample IDs: 2320031, 2320032, 2320035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.6	96.3	P/P	90 - 110
Total Alkalinity	96.3	94.4	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A111807

Included Lab Sample IDs: 2320031, 2320032, 2320035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.0	P/P	90 - 110
Fluoride	99.0	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111862

Included Lab Sample IDs: 2320036

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.6	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111879

Included Lab Sample IDs: 2320033, 2320034

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111882

Included Lab Sample IDs: 2320033, 2320034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	90.6	98.3	P/P	90 - 110
Kjeldahl Nitrogen	98.8	98.8	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
DEP SOP: NU-094-1	Color (true)	101			3.52	
EPA 180.1 Rev. 2.0	Turbidity	95.5			2.14	
EPA 300.0 Rev. 2.1	Chloride	99.4	101	99.1	5.81	
	Sulfate	99.3	99.4	97.3	4.79	
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	97.8	98.4		0.542
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	92.3	94.8	98.1		3.11
	Kjeldahl Nitrogen	94.9				9.97
EPA 353.2 Rev. 2.0	NO2NO3-N	102	101	101		0.0
	NO2NO3-N	101	99.8	99.8		0.0
	NO2NO3-N	100	93.2			0.177
EPA 365.1 Rev. 2.0	Total-P	104	101	104		2.39
	Total-P	104	104	105		0.503
SM 2320 B-2011	Total Alkalinity	96.7			0.296	
SM 2540 C-2011	TDS				2.52	
	TDS				6.74	
	TDS				2.11	
SM 4500-F- C-2011	Fluoride	99.1	98.6	98.6		0.0
SM 5310 B-2011	Organic Carbon	95.0	99.7	98.4		0.755

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2320031, 2320032, 2320035
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2320031, 2320032, 2320035
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2320031, 2320032, 2320035
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2320031, 2320032, 2320035
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2320033, 2320034, 2320036
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2320033, 2320034, 2320036
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2320033, 2320034, 2320036
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2320033, 2320034, 2320036
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2320031, 2320032, 2320035
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2320031, 2320032, 2320035
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2320031, 2320032, 2320035
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2320031, 2320032, 2320035
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2320033, 2320034, 2320036

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	04/19/2022			04/19/2022 15:39	Anna M. Plaviak	2320031
	04/19/2022			04/19/2022 15:40	Anna M. Plaviak	2320032
	04/19/2022			04/19/2022 15:41	Anna M. Plaviak	2320035
EPA 180.1 Rev. 2.0	04/19/2022			04/19/2022 14:24	Sarah A Nixon	2320031
	04/19/2022			04/19/2022 14:26	Sarah A Nixon	2320032
	04/19/2022			04/19/2022 14:27	Sarah A Nixon	2320035
EPA 300.0 Rev. 2.1	04/19/2022			04/26/2022 22:25	Anna M. Plaviak	2320031
	04/19/2022			04/26/2022 22:37	Anna M. Plaviak	2320032
	04/19/2022			04/26/2022 22:49	Anna M. Plaviak	2320035
EPA 350.1 Rev. 2.0	04/19/2022			04/21/2022 11:21	Ping Hua	2320033
	04/19/2022			04/21/2022 11:23	Ping Hua	2320034
	04/19/2022			04/21/2022 11:31	Ping Hua	2320036
EPA 351.2 Rev. 2.0	04/19/2022	04/29/2022 09:35	Samantha L Bates	05/02/2022 15:51	Alexandra J Mattheus	2320036
	04/19/2022	04/29/2022 11:06	Alexandra J Mattheus	05/03/2022 12:20	Alexandra J Mattheus	2320033
	04/19/2022	04/29/2022 11:06	Alexandra J Mattheus	05/03/2022 12:55	Alexandra J Mattheus	2320034
EPA 353.2 Rev. 2.0	04/19/2022			04/20/2022 11:00	Beverly Y. Sanders	2320033
	04/19/2022			04/22/2022 15:07	Nathaniel J Jones	2320034
	04/19/2022			04/22/2022 15:28	Nathaniel J Jones	2320036
EPA 365.1 Rev. 2.0	04/19/2022	04/26/2022 14:30	Simonne.V. Calhoun	04/28/2022 14:22	James L Waggeberby	2320036
	04/19/2022	04/29/2022 13:00	Simonne.V. Calhoun	05/03/2022 11:23	Sarah A Nixon	2320033
	04/19/2022	04/29/2022 13:00	Simonne.V. Calhoun	05/03/2022 11:24	Sarah A Nixon	2320034
SM 2320 B-2011	04/19/2022			04/28/2022 18:02	Dale L. Simmons	2320031
	04/19/2022			04/28/2022 20:26	Dale L. Simmons	2320032
	04/19/2022			04/28/2022 20:33	Dale L. Simmons	2320035
SM 2540 C-2011	04/19/2022			04/20/2022 15:36	Yijie Li	2320031, 2320032, 2320035
SM 2540 D-2011	04/19/2022			04/20/2022 15:36	Yijie Li	2320031, 2320032, 2320035
SM 4500-F- C-2011	04/19/2022			04/28/2022 17:50	Dale L. Simmons	2320031
	04/19/2022			04/28/2022 20:26	Dale L. Simmons	2320032
	04/19/2022			04/28/2022 20:33	Dale L. Simmons	2320035
SM 5310 B-2011	04/19/2022			04/21/2022 19:55	Khloe J Berg	2320033
	04/19/2022			04/21/2022 20:08	Khloe J Berg	2320034
	04/19/2022			04/21/2022 20:21	Khloe J Berg	2320036