

Chemical Analysis Report

NE-DIST-2021-03-26-02

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

Event Description: **unnamed run boat**
Request ID: **RQ-2021-03-22-15**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 16-APR-2021 15:10



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: 03/25/2021 09:40

Field ID: G5NE0591

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2233955	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P395558	
	EPA 300.0 Rev. 2.1	Bromide	62		mg Br/L	P396249	
	SM 2320 B-2011	Total Alkalinity	106	A	mg CaCO3/L	P395641	
	SM 2540 D-2011	TSS	7	IA	mg/L	P396076	
	SM 4500 F-C-2011	Fluoride	1.0		mg F/L	P395644	
2233956	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P395911	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P395872	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P395596	
	EPA 365.1 Rev. 2.0	Total-P	0.036		mg P/L	P395886	
	SM 5310 B-2011	Organic Carbon	3.7		mg C/L	P395844	
2233957	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P395550	

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: 03/25/2021 11:00

Field ID: 27010079

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2233958	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P395558	
	EPA 300.0 Rev. 2.1	Chloride	65		mg Cl/L	P395841	
		Sulfate	4.4		mg SO4/L	P395842	
		Color (true)	230		PCU	P395562	
	SM 2320 B-2011	Total Alkalinity	92		mg CaCO3/L	P395640	
	SM 2540 C-2011	TDS	253		mg/L	P396071	
	SM 2540 D-2011	TSS	2	U	mg/L	P396075	
	SM 4500 F-C-2011	Fluoride	0.061	I	mg F/L	P395642	
2233959	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P395914	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P395965	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.049		mg N/L	P395863	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P395733	
	SM 5310 B-2011	Organic Carbon	27		mg C/L	P395843	
2233960	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.033		mg P/L	P395549	

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: P395558

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395841

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395842

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396249

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395911

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395914

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395872

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395965

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395596

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: P395863

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395733

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395886

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395549

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395550

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

Reference Method: SM 2120 B-2011
Batch ID: P395562

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P395640

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

Reference Method: SM 2320 B-2011
Batch ID: P395641

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

Reference Method: SM 2540 C-2011
Batch ID: P396071

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P396075

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P396076

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P395642

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P395644

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P395843

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

Reference Method: SM 5310 B-2011
Batch ID: P395844

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: P395841

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395842

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396249

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395911

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395914

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395872

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395965

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395596

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395863

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 365.1 Rev. 2.0
Batch ID: P395733

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: P395886

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395549

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395550

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

Reference Method: SM 2120 B-2011
Batch ID: P395562

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

Reference Method: SM 2320 B-2011
Batch ID: P395640

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.9		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P395641

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P395642

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P395644

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.0		P	90 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P395843

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.1		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P395844

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233845	Chloride	99.9		P	90 - 110
2234385	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395842

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233845	Sulfate	98.1		P	90 - 110
2234385	Sulfate	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396249

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233639	Bromide	99.0	97.5	P/P	90 - 110
2233803	Bromide	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395911

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2234560	Ammonia-N	97.6	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395914

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233846	Ammonia-N	96.0	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395872

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233696	Kjeldahl Nitrogen	97.2	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395965

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233825	Kjeldahl Nitrogen	106	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395596

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233956	NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395863

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2234569	NO2NO3-N	96.8		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395733

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233959	Total-P	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395886

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233956	Total-P	92.4	92.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395549

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233861	O-Phosphate-P	99.5	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233866	O-Phosphate-P	98.0	97.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P395642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233850	Fluoride	95.1	95.9	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P395644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233955	Fluoride	94.2	94.9	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P395843

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233860	Organic Carbon	95.3	94.3	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P395844

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233343	Organic Carbon	87.2	87.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P395558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233856	Turbidity	6.00	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233845	Chloride	0.356	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395842

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233845	Sulfate	0.416	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396249

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233639	Bromide	1.18	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395911

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2234560	Ammonia-N	0.767	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233846	Ammonia-N	1.22	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233696	Kjeldahl Nitrogen	1.12	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233825	Kjeldahl Nitrogen	3.96	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P395596

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233956	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P395863

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2234569	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P395733

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233959	Total-P	0.0425	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P395886

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233956	Total-P	0.182	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P395549

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233861	O-Phosphate-P	0.909	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P395550

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233866	O-Phosphate-P	0.156	Spike	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P395562

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2234385	Color (true)	3.90	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P395640

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233850	Total Alkalinity	0.969	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P395641

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233955	Total Alkalinity	0.353	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P396071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233856	TDS	3.94	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P395642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233850	Fluoride	0.457	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P395644

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233955	Fluoride	0.457	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P395843

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233860	Organic Carbon	0.760	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P395844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233343	Organic Carbon	0.507	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: A104301

Included Lab Sample IDs: 2233957, 2233960

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A104305

Included Lab Sample IDs: 2233955, 2233958

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	102	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A104306

Included Lab Sample IDs: 2233958

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	103	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A104327

Included Lab Sample IDs: 2233956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A104346

Included Lab Sample IDs: 2233955, 2233958

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	108	98.4	P/P	90 - 110
Total Alkalinity	97.8	108	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A104346

Included Lab Sample IDs: 2233955, 2233958

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.2	97.7	P/P	90 - 110
Fluoride	98.2	96.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A104389

Included Lab Sample IDs: 2233958

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.8	98.6	P/P	90 - 110
Sulfate	97.7	98.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A104442

Included Lab Sample IDs: 2233956, 2233959

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.1	94.2	P/P	90 - 110
Organic Carbon	96.3	96.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A104447

Included Lab Sample IDs: 2233959

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104454

Included Lab Sample IDs: 2233959

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A104465

Included Lab Sample IDs: 2233956, 2233959

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.2	97.9	P/P	90 - 110
Ammonia-N	98.7	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104493

Included Lab Sample IDs: 2233956

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104501

Included Lab Sample IDs: 2233956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.2	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104509

Included Lab Sample IDs: 2233959

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A104546

Included Lab Sample IDs: 2233955

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A104546

Included Lab Sample IDs: 2233955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	98.3	98.2	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					6.00	
EPA 300.0 Rev. 2.1	Bromide	101	99.0	97.5	100		1.18
	Chloride	100	99.9	100		0.356	
	Sulfate	99.3	98.1	99.9		0.416	
EPA 350.1 Rev. 2.0	Ammonia-N	97.6	97.6	98.6			0.767
	Ammonia-N	96.4	96.0	97.4			1.22
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.1	97.2	98.4			1.12
	Kjeldahl Nitrogen	100	106	102			3.96
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	99.5	99.5			0.0
	NO2NO3-N	101	96.8				0.0
EPA 365.1 Rev. 2.0	Total-P	104	106	106			0.0425
	Total-P	99.7	92.4	92.6			0.182
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.4	99.5	98.6			0.909
	O-Phosphate-P	98.7	98.0	97.8			0.156
SM 2120 B-2011	Color (true)	101				3.90	
SM 2320 B-2011	Total Alkalinity	98.9				0.969	
	Total Alkalinity	101				0.353	
SM 2540 C-2011	TDS					3.94	
SM 4500 F-C-2011	Fluoride	97.3	95.1	95.9			0.457
	Fluoride	94.0	94.2	94.9			0.457
SM 5310 B-2011	Organic Carbon	96.1	95.3	94.3			0.760
	Organic Carbon	95.8	87.2	87.8			0.507

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2233955, 2233958
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2233955
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2233958
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2233958
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2233956, 2233959
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2233956, 2233959
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2233956, 2233959
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2233956, 2233959
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2233957, 2233960
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2233958
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2233955, 2233958
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2233958
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2233955, 2233958
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2233955, 2233958
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2233956, 2233959

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	03/26/2021			03/26/2021 14:46	Yen Ta	2233955, 2233958
EPA 300.0 Rev. 2.1	03/26/2021			04/01/2021 15:31	Lipi Saha	2233958
	03/26/2021			04/07/2021 19:34	Lipi Saha	2233955
EPA 350.1 Rev. 2.0	03/26/2021			04/03/2021 10:55	Ping Hua	2233956
	03/26/2021			04/03/2021 12:10	Ping Hua	2233959
EPA 351.2 Rev. 2.0	03/26/2021	04/02/2021 16:46	Benjamin T. Nordmann	04/05/2021 17:43	Virginia P. Brown	2233956
	03/26/2021	04/05/2021 09:18	Yen Ta	04/06/2021 11:54	Virginia P. Brown	2233959
EPA 353.2 Rev. 2.0	03/26/2021			03/29/2021 10:47	Beverly Y. Sanders	2233956
	03/26/2021			04/02/2021 09:27	Beverly Y. Sanders	2233959
EPA 365.1 Rev. 2.0	03/26/2021	03/31/2021 13:21	Yen Ta	04/02/2021 13:56	Shengyu Ding	2233959
	03/26/2021	04/02/2021 13:22	Yen Ta	04/05/2021 14:00	Shengyu Ding	2233956
EPA 365.1 Rev. 2.0 dissolved	03/26/2021			03/26/2021 14:17	Lipi Saha	2233960
	03/26/2021			03/26/2021 14:27	Lipi Saha	2233957
SM 2120 B-2011	03/26/2021			03/26/2021 16:02	Benjamin T. Nordmann	2233958
SM 2320 B-2011	03/26/2021			03/29/2021 19:59	Dale L. Simmons	2233958
	03/26/2021			03/29/2021 22:38	Dale L. Simmons	2233955
SM 2540 C-2011	03/26/2021			03/30/2021 14:36	Yijie Li	2233958
SM 2540 D-2011	03/26/2021			03/30/2021 14:36	Yijie Li	2233955, 2233958
SM 4500 F-C-2011	03/26/2021			03/29/2021 19:59	Dale L. Simmons	2233958
	03/26/2021			03/29/2021 21:58	Dale L. Simmons	2233955
SM 5310 B-2011	03/26/2021			03/31/2021 18:46	Madeline Gruver	2233959
	03/26/2021			04/01/2021 14:08	Madeline Gruver	2233956