

Chemical Analysis Report

CEN-DIST-2020-11-13-01

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

Event Description: **Lake Hatchineha Drain/Unnamed Ditches (x2)**

Request ID: **RQ-2020-11-09-38**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

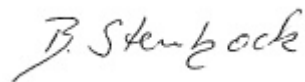
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Kalina Warren

For additional information please contact

Colin Wright, Ph.D.
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Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 04-DEC-2020 16:26



NON-CONFORMANCE REPORT INCLUDED

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Unnamed Ditch @ 30m West of Riverside Dr. Collection Date/Time: 11/11/2020 11:55

Field ID: G5CE0120

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2207607	EPA 180.1 Rev. 2.0	Turbidity	9.7		NTU	P390078	
	EPA 300.0 Rev. 2.1	Chloride	58		mg Cl/L	P390142	
		Sulfate	12		mg SO4/L	P390143	
		Color (true)	80		PCU	P390066	
	SM 2320 B-2011	Total Alkalinity	169	A	mg CaCO3/L	P390130	
	SM 2540 C-2011	TDS	313		mg/L	P390316	
	SM 2540 D-2011	TSS	19		mg/L	P390207	
	SM 4500 F-C-2011	Fluoride	0.17		mg F/L	P390132	
2207609	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P390348	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P390508	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.28		mg N/L	P390278	
	EPA 365.1 Rev. 2.0	Total-P	0.32		mg P/L	P390107	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P390141	
2207611	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18	Q	mg P/L	P390072	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

Sample Location: Unnamed Ditch @ 30m From Boy Scout Camp Rd. **Collection Date/Time: 11/11/2020 12:56**

Field ID: G5CE0121

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2207608	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P390078	
	EPA 300.0 Rev. 2.1	Chloride	23	A	mg Cl/L	P390142	
		Sulfate	2.5	A	mg SO4/L	P390143	
	SM 2120 B-2011	Color (true)	550		PCU	P390066	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P390129	
	SM 2540 C-2011	TDS	127		mg/L	P390316	
	SM 2540 D-2011	TSS	4	I	mg/L	P390207	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P390131	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.044		mg N/L	P390348	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P390246	
2207610	EPA 353.2 Rev. 2.0	NO2NO3-N	0.037		mg N/L	P390278	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P390108	
	SM 5310 B-2011	Organic Carbon	48		mg C/L	P390141	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.12		mg P/L	P390072	
	dissolved						

Ref. Method and Comment:

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

Non-Conformance Report

NCR ID: 8510

Event(s)

CEN-DIST-2020-11-13-01

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived one or more days late by FedEx, samples received within the acceptable temperature range.

Resolution: Samples will be qualified as appropriate.

Authorized by/Date: Joshua Ayres 11/17/2020

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

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P390078

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390142

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390143

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P390348

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390246

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390508

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P390278

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390107

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390108

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: P390072

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

Reference Method: SM 2120 B-2011
Batch ID: P390066

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P390129

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

Reference Method: SM 2320 B-2011
Batch ID: P390130

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

Reference Method: SM 2540 C-2011
Batch ID: P390316

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P390207

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P390131

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P390132

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P390141

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: P390142

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390143

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P390348

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390246

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: P390508

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P390278

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390107

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390108

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390072

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.2		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P390066

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

Reference Method: SM 2320 B-2011
Batch ID: P390129

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

Reference Method: SM 2320 B-2011
Batch ID: P390130

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

Reference Method: SM 4500 F-C-2011
Batch ID: P390131

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P390132

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P390141

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390142

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207608	Chloride	97.5		P	90 - 110
2207781	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390143

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207608	Sulfate	99.9		P	90 - 110
2207781	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P390348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207537	Ammonia-N	97.7	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390246

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207631	Kjeldahl Nitrogen	94.9	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390508

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2208314	Kjeldahl Nitrogen	101	99.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P390278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207596	NO2NO3-N	97.0	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207528	Total-P	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390108

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207610	Total-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390072

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207634	O-Phosphate-P	99.7	99.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P390131

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207421	Fluoride	100	98.5	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P390132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207607	Fluoride	105	106	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P390141

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207537	Organic Carbon	99.5	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P390078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207627	Turbidity	8.96	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390142

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207608	Chloride	0.870	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207608	Sulfate	2.37	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P390348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207537	Ammonia-N	0.955	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390246

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207631	Kjeldahl Nitrogen	4.18	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390508

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2208314	Kjeldahl Nitrogen	0.735	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P390278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207596	NO2NO3-N	0.141	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207528	Total-P	0.795	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390108

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207610	Total-P	0.109	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207634	O-Phosphate-P	0.503	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P390066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207627	Color (true)	0.106	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P390129

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207421	Total Alkalinity	0.734	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P390130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207607	Total Alkalinity	1.18	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P390316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207628	TDS	5.83	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P390131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207421	Fluoride	0.972	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P390132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207607	Fluoride	0.467	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P390141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207537	Organic Carbon	0.939	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B-2011

Run ID: A102129

Included Lab Sample IDs: 2207607, 2207608

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	104	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A102133

Included Lab Sample IDs: 2207611, 2207612

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	99.7	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A102140

Included Lab Sample IDs: 2207607, 2207608

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	97.5	98.0	P/P	95 - 105

Reference Method: SM 2320 B-2011

Run ID: A102153

Included Lab Sample IDs: 2207607, 2207608

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.6	101	P/P	90 - 110
Total Alkalinity	99.6	98.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A102153

Included Lab Sample IDs: 2207607, 2207608

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	103	P/P	90 - 110
Fluoride	103	107	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A102158

Included Lab Sample IDs: 2207609, 2207610

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.2	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A102159

Included Lab Sample IDs: 2207607, 2207608

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.8	100	P/P	90 - 110
Sulfate	101	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A102193

Included Lab Sample IDs: 2207609

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.6	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A102195

Included Lab Sample IDs: 2207610

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A102213

Included Lab Sample IDs: 2207610

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A102214

Included Lab Sample IDs: 2207609, 2207610

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A102243

Included Lab Sample IDs: 2207609, 2207610

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A102350

Included Lab Sample IDs: 2207609

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	97.0	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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					8.96	
EPA 300.0 Rev. 2.1	Chloride	100	97.5	100		0.870	
	Sulfate	101	99.9	100		2.37	
EPA 350.1 Rev. 2.0	Ammonia-N	101	97.7	98.8			0.955
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	94.9	101			4.18
	Kjeldahl Nitrogen	102	101	99.7			0.735
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	97.0	96.8			0.141
EPA 365.1 Rev. 2.0	Total-P	108	105	106			0.795
	Total-P	107	102	102			0.109
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	99.7	99.2			0.503
SM 2120 B-2011	Color (true)	101				0.106	
SM 2320 B-2011	Total Alkalinity	102				0.734	
	Total Alkalinity	101				1.18	
SM 2540 C-2011	TDS					5.83	
SM 4500 F-C-2011	Fluoride	97.7	100	98.5			0.972
	Fluoride	103	105	106			0.467
SM 5310 B-2011	Organic Carbon	99.5	99.5	101			0.939

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2207607, 2207608
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2207607, 2207608
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2207607, 2207608
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2207609, 2207610
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2207609, 2207610
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2207609, 2207610
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2207609, 2207610
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2207611, 2207612
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2207607, 2207608
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2207607, 2207608
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2207607, 2207608
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2207607, 2207608
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2207607, 2207608
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2207609, 2207610

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	11/13/2020			11/13/2020 10:37	Yen Ta	2207607
	11/13/2020			11/13/2020 10:41	Yen Ta	2207608
EPA 300.0 Rev. 2.1	11/13/2020			11/16/2020 18:16	Lipi Saha	2207608
	11/13/2020			11/16/2020 19:09	Lipi Saha	2207607
EPA 350.1 Rev. 2.0	11/13/2020			11/21/2020 10:55	Ping Hua	2207609
	11/13/2020			11/21/2020 10:56	Ping Hua	2207610
EPA 351.2 Rev. 2.0	11/13/2020	11/18/2020 14:20	David Boose	11/19/2020 11:30	Elliott Rodriguez	2207610
	11/13/2020	11/30/2020 12:45	Elliott Rodriguez	12/01/2020 11:55	Elliott Rodriguez	2207609
EPA 353.2 Rev. 2.0	11/13/2020			11/19/2020 14:06	Lauren Lees	2207609
	11/13/2020			11/19/2020 14:07	Lauren Lees	2207610
EPA 365.1 Rev. 2.0	11/13/2020	11/16/2020 13:34	Yen Ta	11/17/2020 17:40	Benjamin T. Nordmann	2207609
	11/13/2020	11/16/2020 13:34	Yen Ta	11/18/2020 13:50	Benjamin T. Nordmann	2207610
EPA 365.1 Rev. 2.0 dissolved	11/13/2020			11/13/2020 12:56	Blanca Fach	2207612
	11/13/2020			11/13/2020 13:18	Blanca Fach	2207611
SM 2120 B-2011	11/13/2020			11/13/2020 11:33	Madeline Gruver	2207607
	11/13/2020			11/13/2020 11:35	Madeline Gruver	2207608
SM 2320 B-2011	11/13/2020			11/16/2020 18:46	Dale L. Simmons	2207608
	11/13/2020			11/16/2020 21:43	Dale L. Simmons	2207607
SM 2540 C-2011	11/13/2020			11/16/2020 14:25	Yijie Li	2207607, 2207608
SM 2540 D-2011	11/13/2020			11/16/2020 14:25	Yijie Li	2207607, 2207608
SM 4500 F-C-2011	11/13/2020			11/16/2020 18:46	Dale L. Simmons	2207608
	11/13/2020			11/16/2020 21:31	Dale L. Simmons	2207607
SM 5310 B-2011	11/13/2020			11/16/2020 21:24	Touraj Touran	2207609
	11/13/2020			11/16/2020 21:36	Touraj Touran	2207610