

Chemical Analysis Report

CEN-DIST-2020-06-18-01

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

Event Description: **Okahumpka/Deaton/Hidden**
Request ID: **RQ-2020-06-15-62**
Customer: **CEN-DIST**
Project ID: **SMP**

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Date Certified: 07-JUL-2020 12:10



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: Lake Okahumpka at center

Collection Date/Time: 06/17/2020 11:29

Field ID: G4CE0159

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177627	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P383410	
	EPA 300.0 Rev. 2.1	Chloride	36		mg Cl/L	P383737	
		Sulfate	0.20	U	mg SO4/L	P383740	
	SM 2120 B-2011	Color (true)	17		PCU	P383422	
	SM 2320 B-2011	Total Alkalinity	62		mg CaCO3/L	P383552	
	SM 2540 C-2011	TDS	168	A	mg/L	P383591	
	SM 2540 D-2011	TSS	2	UA	mg/L	P383585	
	SM 4500 F-C-2011	Fluoride	0.33		mg F/L	P383556	
2177630	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P383475	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P383652	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P383428	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P383505	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P383531	
2177633	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P383420	

Ref. Method and Comment:

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

Sample Location: Lake Deaton @ Center

Collection Date/Time: 06/17/2020 12:10

Field ID: G4CE0160

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177628	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P383410	
	EPA 300.0 Rev. 2.1	Chloride	32		mg Cl/L	P383737	
		Sulfate	1.4		mg SO4/L	P383740	
	SM 2120 B-2011	Color (true)	30	A	PCU	P383422	
	SM 2320 B-2011	Total Alkalinity	32		mg CaCO3/L	P383552	
	SM 2540 C-2011	TDS	130		mg/L	P383591	
	SM 2540 D-2011	TSS	4	I	mg/L	P383585	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P383556	
2177631	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P383475	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1	J	mg N/L	P383659	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P383428	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P383505	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P383531	
2177634	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P383420	

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: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Hidden Lake @ Center

Collection Date/Time: 06/17/2020 12:49

Field ID: G4CE0158

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177629	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P383411	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P383737	
		Sulfate	0.89		mg SO4/L	P383740	
	SM 2120 B-2011	Color (true)	65		PCU	P383423	
	SM 2320 B-2011	Total Alkalinity	121		mg CaCO3/L	P383552	
	SM 2540 C-2011	TDS	215	A	mg/L	P383592	
	SM 2540 D-2011	TSS	2	IA	mg/L	P383586	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P383556	
2177632	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P383475	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P383659	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P383428	
	EPA 365.1 Rev. 2.0	Total-P	0.037		mg P/L	P383505	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P383531	
2177635	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P383420	

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: P383410

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383411

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383737

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383740

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383475

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383652

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383659

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383428

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383505

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: P383420

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

Reference Method: SM 2120 B-2011
Batch ID: P383422

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P383423

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P383552

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

Reference Method: SM 2540 C-2011
Batch ID: P383591

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P383592

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P383585

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P383586

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P383556

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P383531

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: P383737

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383740

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383475

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: P383652

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383659

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: P383428

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383505

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383420

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.8		P	90 - 110

Reference Method: SM 2120 B-2011
Batch ID: P383422

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.1		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P383423

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.9		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P383552

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

Reference Method: SM 4500 F-C-2011
Batch ID: P383556

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P383531

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383737

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177487	Chloride	101		P	90 - 110
2177628	Chloride	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383740

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177487	Sulfate	102		P	90 - 110
2177628	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383475

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177553	Ammonia-N	103	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383652

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177553	Kjeldahl Nitrogen	104	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383659

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177631	Kjeldahl Nitrogen	103	110	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383428

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177577	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177515	Total-P	102	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383420

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177579	O-Phosphate-P	94.9	94.7	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P383556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177783	Fluoride	99.4	97.9	P/P	94 - 107

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P383531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177370	Organic Carbon	98.9	104	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P383410

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177534	Turbidity	1.19	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P383411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177658	Turbidity	2.49	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P383737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177487	Chloride	0.106	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P383740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177487	Sulfate	0.342	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P383475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177553	Ammonia-N	0.631	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P383652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177553	Kjeldahl Nitrogen	2.52	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P383659

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177631	Kjeldahl Nitrogen	3.85	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P383428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177577	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177515	Total-P	3.93	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383420

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177579	O-Phosphate-P	0.211	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P383422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177628	Color (true)	0.782	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P383423

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177652	Color (true)	1.75	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P383552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177783	Total Alkalinity	1.13	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P383591

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177627	TDS	0.593	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P383592

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177629	TDS	0.930	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P383556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177783	Fluoride	0.965	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P383531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177370	Organic Carbon	3.18	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A99407

Included Lab Sample IDs: 2177627, 2177628, 2177629

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A99408

Included Lab Sample IDs: 2177633, 2177634, 2177635

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	98.2	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A99409

Included Lab Sample IDs: 2177627, 2177628, 2177629

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.7	99.7	P/P	90 - 115
Color (true)	99.7	99.3	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A99414

Included Lab Sample IDs: 2177630, 2177631, 2177632

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: A99435

Included Lab Sample IDs: 2177630, 2177631, 2177632

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

Reference Method: SM 5310 B-2011

Run ID: A99456

Included Lab Sample IDs: 2177630, 2177631, 2177632

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

Reference Method: SM 2320 B-2011

Run ID: A99462

Included Lab Sample IDs: 2177627, 2177628, 2177629

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.7	99.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A99462

Included Lab Sample IDs: 2177627, 2177628, 2177629

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A99483

Included Lab Sample IDs: 2177630, 2177631, 2177632

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	93.2	93.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A99546

Included Lab Sample IDs: 2177627, 2177628, 2177629

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.6	97.8	P/P	90 - 110
Chloride	99.0	97.6	P/P	90 - 110
Sulfate	98.8	98.9	P/P	90 - 110
Sulfate	99.9	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A99553

Included Lab Sample IDs: 2177630

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.4	94.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A99554

Included Lab Sample IDs: 2177631, 2177632

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.8	96.4	P/P	90 - 110
Kjeldahl Nitrogen	99.9	93.8	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		LCS	Precision	
						SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					1.19	
	Turbidity					2.49	
EPA 300.0 Rev. 2.1	Chloride	100	101	107		0.106	
	Sulfate	101	102	101		0.342	
EPA 350.1 Rev. 2.0	Ammonia-N	100	103	102			0.631
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.3	104	108			2.52
	Kjeldahl Nitrogen	100	103	110			3.85
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	100	100			0.0
EPA 365.1 Rev. 2.0	Total-P	104	102	107			3.93
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.8	94.9	94.7			0.211
SM 2120 B-2011	Color (true)	97.1				0.782	
	Color (true)	97.9				1.75	
SM 2320 B-2011	Total Alkalinity	99.2				1.13	
SM 2540 C-2011	TDS					0.593	
	TDS					0.930	
SM 4500 F-C-2011	Fluoride	97.1	99.4	97.9			0.965
SM 5310 B-2011	Organic Carbon	103	98.9	104			3.18

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2177627, 2177628, 2177629
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2177627, 2177628, 2177629
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2177627, 2177628, 2177629
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2177630, 2177631, 2177632
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2177630, 2177631, 2177632
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2177630, 2177631, 2177632
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2177630, 2177631, 2177632
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2177633, 2177634, 2177635
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2177627, 2177628, 2177629
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2177627, 2177628, 2177629
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2177627, 2177628, 2177629
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2177627, 2177628, 2177629
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2177627, 2177628, 2177629
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2177630, 2177631, 2177632

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	06/18/2020			06/18/2020 14:56	Yen Ta	2177627, 2177628, 2177629
EPA 300.0 Rev. 2.1	06/18/2020			06/23/2020 22:59	Elliott Rodriguez	2177628
	06/18/2020			06/24/2020 01:22	Elliott Rodriguez	2177627
	06/18/2020			06/24/2020 01:35	Elliott Rodriguez	2177629
EPA 350.1 Rev. 2.0	06/18/2020			06/21/2020 11:29	Ping Hua	2177630
	06/18/2020			06/21/2020 11:30	Ping Hua	2177631
	06/18/2020			06/21/2020 11:32	Ping Hua	2177632
EPA 351.2 Rev. 2.0	06/18/2020	06/25/2020 09:40	Sima Feizi	06/26/2020 10:09	Jhamieka S. Greenwood	2177630
	06/18/2020	06/25/2020 09:40	Sima Feizi	06/26/2020 14:57	Jhamieka S. Greenwood	2177631
	06/18/2020	06/25/2020 09:40	Sima Feizi	06/26/2020 15:05	Jhamieka S. Greenwood	2177632
EPA 353.2 Rev. 2.0	06/18/2020			06/19/2020 09:13	Beverly Y. Sanders	2177630
	06/18/2020			06/19/2020 09:14	Beverly Y. Sanders	2177631
	06/18/2020			06/19/2020 09:15	Beverly Y. Sanders	2177632
EPA 365.1 Rev. 2.0	06/18/2020	06/22/2020 14:35	Yen Ta	06/24/2020 07:56	Lipi Saha	2177630
	06/18/2020	06/22/2020 14:35	Yen Ta	06/24/2020 07:57	Lipi Saha	2177631
	06/18/2020	06/22/2020 14:35	Yen Ta	06/24/2020 07:58	Lipi Saha	2177632
EPA 365.1 Rev. 2.0 dissolved	06/18/2020			06/18/2020 16:00	Jhamieka S. Greenwood	2177633
	06/18/2020			06/18/2020 16:01	Jhamieka S. Greenwood	2177634, 2177635
SM 2120 B-2011	06/18/2020			06/18/2020 16:29	Madeline Gruver	2177627
	06/18/2020			06/18/2020 16:30	Madeline Gruver	2177628
	06/18/2020			06/18/2020 16:34	Madeline Gruver	2177629
SM 2320 B-2011	06/18/2020			06/23/2020 00:19	Dale L. Simmons	2177627
	06/18/2020			06/23/2020 00:31	Dale L. Simmons	2177628
	06/18/2020			06/23/2020 00:44	Dale L. Simmons	2177629
SM 2540 C-2011	06/18/2020			06/19/2020 19:40	Madeline Gruver	2177627, 2177628, 2177629
SM 2540 D-2011	06/18/2020			06/19/2020 20:20	Madeline Gruver	2177627, 2177628, 2177629
SM 4500 F-C-2011	06/18/2020			06/23/2020 00:19	Dale L. Simmons	2177627
	06/18/2020			06/23/2020 00:31	Dale L. Simmons	2177628
	06/18/2020			06/23/2020 00:44	Dale L. Simmons	2177629
SM 5310 B-2011	06/18/2020			06/23/2020 01:35	David Boose	2177630
	06/18/2020			06/23/2020 01:52	David Boose	2177631
	06/18/2020			06/23/2020 02:37	David Boose	2177632