Chemical Analysis Report

CEN-DIST-2017-02-02-01

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

Event Description: **Withlacoochee River/RCID (lower)**
Request ID: **RQ-2017-01-23-42**
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
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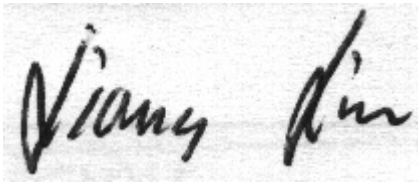
Certified by: Liang Lin, Environmental Administrator

Date Certified: 23-FEB-2017 13:36



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 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: Reedy Creek at US Hwy I-4 bridge **Collection Date/Time: 02/01/2017 11:01**

Field ID: G4CE0137 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1869094	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P319206	
	EPA 300.0 Rev. 2.1	Chloride	56		mg Cl/L	P319469	
		Sulfate	14		mg SO4/L	P319798	
	SM 2120 B	Color (true)	290		PCU	P319225	
	SM 2320 B-97	Total Alkalinity	37	A	mg CaCO3/L	P319769	
	SM 2540 C-97	TDS	204	A	mg/L	P320052	
	SM 2540 D-97	TSS	2	U	mg/L	P319587	
	SM 4500 F-C-97	Fluoride	0.059	I	mg F/L	P319508	
1869096	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P319477	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.89		mg N/L	P319292	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P319493	
	EPA 365.1 Rev. 2.0	Total-P	0.036		mg P/L	P319254	
	SM 5310 B-00	Organic Carbon	27		mg C/L	P319390	
1869098	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.018		mg P/L	P319196	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Withlacochee River @ Just Upstream of SR33 **Collection Date/Time: 02/01/2017 13:01**

Field ID: G4CE0138 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1869095	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P319206	
	EPA 300.0 Rev. 2.1	Chloride	17	A	mg Cl/L	P319468	
		Sulfate	0.31	I	mg SO4/L	P319465	
	SM 2120 B	Color (true)	390		PCU	P319225	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P319769	
	SM 2540 C-97	TDS	104		mg/L	P320052	
	SM 2540 D-97	TSS	2	U	mg/L	P319587	
	SM 4500 F-C-97	Fluoride	0.065	I	mg F/L	P319508	
1869097	EPA 350.1 Rev. 2.0	Ammonia-N	0.078		mg N/L	P319477	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P319292	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P319493	
	EPA 365.1 Rev. 2.0	Total-P	0.057		mg P/L	P319255	
	SM 5310 B-00	Organic Carbon	48		mg C/L	P319390	
1869099	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.040		mg P/L	P319196	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P319206

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319465

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319468

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319469

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319798

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319477

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319292

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319493

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319254

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
Batch ID: P319255

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319196

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

Reference Method: SM 2120 B
Batch ID: P319225

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P319769

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

Reference Method: SM 2540 C-97
Batch ID: P320052

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P319587

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P319508

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P319390

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: P319465

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319465

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319468

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319469

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319798

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319477

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319292

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319493

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: P319254

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319255

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319196

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

Reference Method: SM 2320 B-97
Batch ID: P319769

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P319508

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.4		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P319390

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.6		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319465

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869095	Sulfate	96.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319468

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869095	Chloride	98.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869040	Chloride	96.3		P	90 - 110
1869041	Chloride	97.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319798

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869040	Sulfate	92.7		P	90 - 110
1869041	Sulfate	92.8		P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319477

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869043	Ammonia-N	96.8	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319292

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869075	Kjeldahl Nitrogen	108	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319493

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869043	NO2NO3-N	99.3	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319254

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869047	Total-P	97.8	95.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869133	Total-P	95.6	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319196

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869050	O-Phosphate-P	102	99.2	P/P	90 - 110

Reference Method: SM 5310 B-00
Batch ID: P319390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869074	Organic Carbon	93.9	92.5	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P319206

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869041	Turbidity	1.21	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319468

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869095	Chloride	0.00884	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869041	Chloride	0.0417	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869041	Sulfate	1.07	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319477

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869043	Ammonia-N	4.87	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319292

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869075	Kjeldahl Nitrogen	6.62	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319493

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869043	NO2NO3-N	0.475	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869047	Total-P	1.91	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869133	Total-P	1.32	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319196

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869050	O-Phosphate-P	2.39	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P319225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869038	Color (true)	1.66	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P319769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869094	Total Alkalinity	0.125	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P320052

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869094	TDS	0.491	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P319508

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869073	Fluoride	0.947	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P319390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869074	Organic Carbon	1.19	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A74242
Included Lab Sample IDs: 1869098, 1869099

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.7	98.6	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A74244
Included Lab Sample IDs: 1869094, 1869095

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

Reference Method: SM 2120 B
Run ID: A74251
Included Lab Sample IDs: 1869094, 1869095

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A74291
Included Lab Sample IDs: 1869096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A74292
Included Lab Sample IDs: 1869097

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A74307
Included Lab Sample IDs: 1869094, 1869095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Chloride	101	101	P/P	90 - 110
Sulfate	93.2	97.6	P/P	90 - 110
Sulfate	93.6	96.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A74309
Included Lab Sample IDs: 1869096, 1869097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.5	94.3	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A74311
Included Lab Sample IDs: 1869096, 1869097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	97.2	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A74337
Included Lab Sample IDs: 1869096, 1869097

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A74342
Included Lab Sample IDs: 1869096, 1869097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	93.0	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A74348
Included Lab Sample IDs: 1869094, 1869095

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

Reference Method: SM 2320 B-97
Run ID: A74444
Included Lab Sample IDs: 1869094, 1869095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	101	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	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					1.21	
EPA 300.0 Rev. 2.1	Chloride	101	98.1			0.0088	
	Chloride	100	97.8	96.3		0.0417	
	Sulfate	98.2	96.6				
	Sulfate	95.5	92.8	92.7		1.07	
EPA 350.1 Rev. 2.0	Ammonia-N	96.7	96.8	102			4.87
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	108	97.8			6.62
EPA 353.2 Rev. 2.0	NO2NO3-N	100	99.3	98.8			0.475
EPA 365.1 Rev. 2.0	Total-P	92.4	97.8	95.9			1.91
	Total-P	98.4	95.6	96.9			1.32
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	102	99.2			2.39
SM 2120 B	Color (true)					1.66	
SM 2320 B-97	Total Alkalinity	103				0.125	
SM 2540 C-97	TDS					0.491	
SM 4500 F-C-97	Fluoride	97.4					0.947
SM 5310 B-00	Organic Carbon	99.6	93.9	92.5			1.19

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1869094, 1869095
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1869094, 1869095
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1869094, 1869095
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1869096, 1869097
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1869096, 1869097
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1869096, 1869097
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1869096, 1869097
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1869098, 1869099
SM 2120 B / E31780	True Color measured at 450 nm	1869094, 1869095
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1869094, 1869095
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1869094, 1869095
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1869094, 1869095
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1869094, 1869095
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1869096, 1869097

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	02/02/2017			02/02/2017 16:43	Julia Storbeck	1869094, 1869095
EPA 300.0 Rev. 2.1	02/02/2017			02/08/2017	Ping Hua	1869094, 1869095
	02/02/2017			02/10/2017	Ping Hua	1869094
EPA 350.1 Rev. 2.0	02/02/2017			02/07/2017	Sofia Elnemr	1869096, 1869097
EPA 351.2 Rev. 2.0	02/02/2017	02/06/2017	Adrian Shelby	02/07/2017	Joseph Suarez	1869096, 1869097
EPA 353.2 Rev. 2.0	02/02/2017			02/07/2017	Virginia P. Brown	1869096, 1869097
EPA 365.1 Rev. 2.0	02/02/2017	02/03/2017	Vijayalakshmi Reddy	02/06/2017	Lipi Saha	1869096, 1869097
EPA 365.1 Rev. 2.0 dissolved	02/02/2017			02/02/2017 14:51	Julie Michelle Frank	1869098
	02/02/2017			02/02/2017 14:52	Julie Michelle Frank	1869099
SM 2120 B	02/02/2017			02/02/2017 17:59	Julie Michelle Frank	1869094
	02/02/2017			02/02/2017 18:00	Julie Michelle Frank	1869095
SM 2320 B-97	02/02/2017			02/13/2017	Dale L. Simmons	1869094, 1869095
SM 2540 C-97	02/02/2017			02/07/2017	Sima Feizi	1869094, 1869095
SM 2540 D-97	02/02/2017			02/07/2017	Sima Feizi	1869094, 1869095
SM 4500 F-C-97	02/02/2017			02/08/2017	Dale L. Simmons	1869094, 1869095
SM 5310 B-00	02/02/2017			02/06/2017	Julie Michelle Frank	1869096, 1869097