

Chemical Analysis Report

CEN-DIST-2016-08-31-01

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

Event Description: **Unnamed Branch & Field Blank**

Request ID: **RQ-2016-08-22-34**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

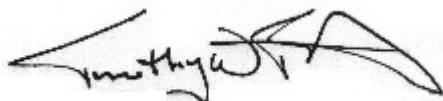
FL Dept. of Environmental Protection
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Attn: Mike Linger

For additional information please contact

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Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 22-SEP-2016 10:01

A handwritten signature in black ink, appearing to read 'Timothy W. Fitzpatrick', with a stylized flourish at the end.

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: UNNAMED BRANCH @ 750M US OF CONFLUENCE W TOMOKA RIVER

Collection Date/Time: 08/30/2016 10:00

Field ID: G5CE0017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1828352	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P310647	
	SM 2320 B-97	Total Alkalinity	124		mg CaCO3/L	P310954	
	SM 2540 D-97	TSS	3	IQ	mg/L	P310864	
	SM 4500 F-C-97	Fluoride	0.77		mg F/L	P310955	
1828354	EPA 350.1 Rev. 2.0	Ammonia-N	0.16		mg N/L	P310654	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P310879	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P311330	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P311019	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P311054	
1828356	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P310645	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. Sample analyzed beyond routine holding time due to a protracted power outage caused by hurricane Hermine.

Sample Location: FIELD BLANK

Collection Date/Time: 08/30/2016 10:10

Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1828353	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P310647	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P310789	
	SM 2540 D-97	TSS	2	UQ	mg/L	P310862	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P310791	
1828355	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P310654	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P310707	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P310890	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P310899	
	SM 5310 B-00	Organic Carbon	0.69	I	mg C/L	P311046	
1828357	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P310642	

Ref. Method and Comment:

SM 2540 D-97: Sample analyzed beyond routine holding time due to a protracted power outage caused by hurricane Hermine.

SM 5310 B-00: The result was confirmed on 09/14/2016.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P310647

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P310654

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310707

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310879

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310890

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P311330

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310899

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P311019

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P310642

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P310645

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

Reference Method: SM 2320 B-97
Batch ID: P310789

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P310954

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

Reference Method: SM 2540 D-97
Batch ID: P310862

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P310864

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P310791

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P310955

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P311046

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

Reference Method: SM 5310 B-00
Batch ID: P311054

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310654

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	105		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310707

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310879

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: P310890

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P311330

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310899

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P311019

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P310642

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P310645

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.9		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P310789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P310954

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

Reference Method: SM 4500 F-C-97
Batch ID: P310791

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.4		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P310955

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P311046

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P311054

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310654

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1827966	Ammonia-N	107	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1828339	Kjeldahl Nitrogen	98.8	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310879

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1828760	Kjeldahl Nitrogen	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310890

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310890

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1828314	NO2NO3-N	97.2	97.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P311330

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1827938	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1828314	Total-P	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P311019

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1828461	Total-P	93.7	94.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P310642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1828369	O-Phosphate-P	96.9	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P310645

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1828344	O-Phosphate-P	98.7	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P310791

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1828362	Fluoride	97.2	98.3	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P310955

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1829144	Fluoride	96.7	97.4	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P311046

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1827894	Organic Carbon	99.9	99.9	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P311054

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1827967	Organic Carbon	102	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P310647

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1828337	Turbidity	1.53	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P310654

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1827966	Ammonia-N	1.48	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P310707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1828339	Kjeldahl Nitrogen	1.34	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P310879

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1828760	Kjeldahl Nitrogen	0.225	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P310890

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1828314	NO2NO3-N	0.487	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P311330

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1827938	NO2NO3-N	0.991	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1828314	Total-P	0.717	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P311019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1828461	Total-P	0.356	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P310642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1828369	O-Phosphate-P	1.40	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P310645

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1828344	O-Phosphate-P	0.920	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P310789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1828362	Total Alkalinity	0.685	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P310954

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1828722	Total Alkalinity	0.392	Sample	P	0 - 4.8

Reference Method: SM 2540 D-97
Batch ID: P310862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1828414	TSS	5.71	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P310791

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1828362	Fluoride	0.984	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P310955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1829144	Fluoride	0.470	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P311046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1827894	Organic Carbon	0.0	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P311054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1827967	Organic Carbon	0.245	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: A71433
Included Lab Sample IDs: 1828356, 1828357

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A71435
Included Lab Sample IDs: 1828352, 1828353

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A71438
Included Lab Sample IDs: 1828354, 1828355

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

Reference Method: SM 2320 B-97
Run ID: A71480
Included Lab Sample IDs: 1828353

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A71480

Included Lab Sample IDs: 1828353

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A71504

Included Lab Sample IDs: 1828355

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A71521

Included Lab Sample IDs: 1828355

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.4	105	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A71541

Included Lab Sample IDs: 1828352

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

Reference Method: SM 4500 F-C-97

Run ID: A71541

Included Lab Sample IDs: 1828352

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A71565

Included Lab Sample IDs: 1828355

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A71577

Included Lab Sample IDs: 1828354

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

Reference Method: SM 5310 B-00

Run ID: A71583

Included Lab Sample IDs: 1828355

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00
 Run ID: A71584
 Included Lab Sample IDs: 1828354

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	104	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Run ID: A71587
 Included Lab Sample IDs: 1828354

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	107	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Run ID: A71604
 Included Lab Sample IDs: 1828354

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	103	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					1.53	
EPA 350.1 Rev. 2.0	Ammonia-N	105	107	106			1.48
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	98.8	101			1.34
	Kjeldahl Nitrogen	102	101	101			0.225
EPA 353.2 Rev. 2.0	NO2NO3-N	104	97.2	97.6			0.487
	NO2NO3-N	102	101	100			0.991
EPA 365.1 Rev. 2.0	Total-P	98.7	105	104			0.717
	Total-P	98.7	93.7	94.0			0.356
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	96.9	98.4			1.40
	O-Phosphate-P	99.9	98.7	100			0.920
SM 2320 B-97	Total Alkalinity	102				0.685	
	Total Alkalinity	103				0.392	
SM 2540 D-97	TSS					5.71	
SM 4500 F-C-97	Fluoride	95.4	97.2	98.3			0.984
	Fluoride	97.7	96.7	97.4			0.470
SM 5310 B-00	Organic Carbon	98.6	99.9	99.9			0.0
	Organic Carbon	104	102	102			0.245

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1828352, 1828353
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1828354, 1828355

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1828354, 1828355
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1828354, 1828355
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1828354, 1828355
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1828356, 1828357
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1828352, 1828353
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1828352, 1828353
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1828352, 1828353
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1828354, 1828355

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	08/31/2016			08/31/2016 16:44	Sima Feizi	1828352, 1828353
EPA 350.1 Rev. 2.0	08/31/2016			08/31/2016	Joseph Suarez	1828354, 1828355
EPA 351.2 Rev. 2.0	08/31/2016	09/07/2016	Adrian Shelby	09/08/2016	Virginia P. Brown	1828355
	08/31/2016	09/09/2016	Adrian Shelby	09/13/2016	Christopher Armour	1828354
EPA 353.2 Rev. 2.0	08/31/2016			09/09/2016	Beverly Y. Sanders	1828355
	08/31/2016			09/13/2016	Beverly Y. Sanders	1828354
EPA 365.1 Rev. 2.0	08/31/2016	09/09/2016	Vijayalakshmi Reddy	09/13/2016	Lipi Saha	1828355
	08/31/2016	09/13/2016	Vijayalakshmi Reddy	09/14/2016	Lipi Saha	1828354
EPA 365.1 Rev. 2.0 dissolved	08/31/2016			08/31/2016 15:32	Julia Storbeck	1828357
	08/31/2016			08/31/2016 16:09	Julia Storbeck	1828356
SM 2320 B-97	08/31/2016			09/07/2016	Dale L. Simmons	1828353
	08/31/2016			09/08/2016	Dale L. Simmons	1828352
SM 2540 D-97	08/31/2016			09/07/2016	Yijie Li	1828352, 1828353
SM 4500 F-C-97	08/31/2016			09/07/2016	Dale L. Simmons	1828353
	08/31/2016			09/08/2016	Dale L. Simmons	1828352
SM 5310 B-00	08/31/2016			09/13/2016	Sofia Elnemr	1828354, 1828355