

Chemical Analysis Report

CEN-DIST-2018-03-02-01

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

Event Description: **Tiger + D&B**
Request ID: **RQ-2018-02-26-62**
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: Mike Linger

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 21-MAR-2018 15:27

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

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: Tiger Creek 1.45km downstream of Lake Kissimmee (3183D)

Collection Date/Time: 03/01/2018 11:05

Field ID: G4CE0070

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971256	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P340898	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P341034	
		Sulfate	13		mg SO4/L	P341035	
	SM 2120 B	Color (true)	81		PCU	P340894	
	SM 2320 B-97	Total Alkalinity	16		mg CaCO3/L	P341245	
	SM 2540 C-97	TDS	85		mg/L	P341463	
	SM 2540 D-97	TSS	19		mg/L	P341371	
	SM 4500 F-C-97	Fluoride	0.082	I	mg F/L	P341248	
1971257	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P341233	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P340905	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P340946	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P340938	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P341044	
1971258	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.050		mg P/L	P340891	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high 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.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Tiger Creek 1.45km downstream of Lake Kissimmee (3183D)

Collection Date/Time: 03/01/2018 11:10

Field ID: G4CE0070DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971259	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P340898	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P341034	
		Sulfate	12		mg SO4/L	P341035	
	SM 2120 B	Color (true)	82		PCU	P340894	
	SM 2320 B-97	Total Alkalinity	16		mg CaCO3/L	P341245	
	SM 2540 C-97	TDS	85		mg/L	P341463	
	SM 2540 D-97	TSS	17		mg/L	P341371	
	SM 4500 F-C-97	Fluoride	0.085	I	mg F/L	P341248	
1971261	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P341233	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P340905	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P340946	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P340938	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P341044	
1971263	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.051		mg P/L	P340891	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high 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.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Field Blank

Collection Date/Time: 03/01/2018 11:35

Field ID: BLANK_03012018

Matrix: DI-WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971260	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P340898	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P341034	
		Sulfate	0.20	U	mg SO4/L	P341035	
	SM 2120 B	Color (true)	2.5	U	PCU	P340894	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P341245	
	SM 2540 C-97	TDS	15	U	mg/L	P341462	
	SM 2540 D-97	TSS	2	U	mg/L	P341370	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P341248	
1971262	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P341233	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P340905	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P340946	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P340938	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P341044	
1971264	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P340891	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P340898

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P341034

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P341035

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P341233

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P340905

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340946

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P340938

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340891

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

Reference Method: SM 2120 B
Batch ID: P340894

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P341245

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

Reference Method: SM 2540 C-97
Batch ID: P341462

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P341463

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P341370

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P341371

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P341248

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P341044

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: P341034

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341035

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341233

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: P340905

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: P340946

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: P340938

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340891

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340891

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

Reference Method: SM 2320 B-97
Batch ID: P341245

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

Reference Method: SM 4500 F-C-97
Batch ID: P341248

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P341044

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341034

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971271	Chloride	93.7		P	90 - 110
1971299	Chloride	97.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971299	Sulfate	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341233

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971257	Ammonia-N	99.4	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P340905

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971303	Kjeldahl Nitrogen	104	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340946

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971228	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340891

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971307	O-Phosphate-P	94.8	96.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P341248

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970876	Fluoride	96.9	95.4	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P341044

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970879	Organic Carbon	93.9	94.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P340898

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971225	Turbidity	4.18	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971271	Chloride	0.490	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971271	Sulfate	0.415	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341233

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971257	Ammonia-N	1.46	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P340905

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971303	Kjeldahl Nitrogen	1.44	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971228	NO2NO3-N	0.496	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P340938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971229	Total-P	0.603	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971307	O-Phosphate-P	1.67	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P340894

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971225	Color (true)	2.01	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P341245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970876	Total Alkalinity	0.128	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P341462

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971225	TDS	2.37	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P341463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971226	TDS	8.66	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 D-97
Batch ID: P341370

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971225	TSS	6.67	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P341248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970876	Fluoride	0.960	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P341044

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970879	Organic Carbon	0.516	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: A82409
Included Lab Sample IDs: 1971258, 1971263, 1971264

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

Reference Method: SM 2120 B
Run ID: A82410
Included Lab Sample IDs: 1971256, 1971259, 1971260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.5	98.8	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A82411
Included Lab Sample IDs: 1971256, 1971259, 1971260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	100	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A82428
Included Lab Sample IDs: 1971257, 1971261, 1971262

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	98.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A82434

Included Lab Sample IDs: 1971257, 1971261

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A82448

Included Lab Sample IDs: 1971262

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A82453

Included Lab Sample IDs: 1971257, 1971261, 1971262

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A82457

Included Lab Sample IDs: 1971256, 1971259, 1971260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.9	101	P/P	90 - 110
Sulfate	96.1	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A82470

Included Lab Sample IDs: 1971257, 1971261, 1971262

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A82510

Included Lab Sample IDs: 1971257, 1971261, 1971262

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

Reference Method: SM 2320 B-97

Run ID: A82513

Included Lab Sample IDs: 1971256, 1971259, 1971260

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

Reference Method: SM 4500 F-C-97

Run ID: A82513

Included Lab Sample IDs: 1971256, 1971259, 1971260

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

Reference Method: SM 4500 F-C-97

Run ID: A82513

Included Lab Sample IDs: 1971256, 1971259, 1971260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	98.1	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				4.18	
EPA 300.0 Rev. 2.1	Chloride	100	93.7 97.1		0.490	
	Sulfate	101	99.4		0.415	
EPA 350.1 Rev. 2.0	Ammonia-N	101	99.4 101			1.46
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	104 102			1.44
EPA 353.2 Rev. 2.0	NO2NO3-N	100	101 100			0.496
EPA 365.1 Rev. 2.0	Total-P	98.8				0.603
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.9	94.8 96.4			1.67
SM 2120 B	Color (true)				2.01	
SM 2320 B-97	Total Alkalinity	102			0.128	
SM 2540 C-97	TDS				2.37	
	TDS				8.66	
SM 2540 D-97	TSS				6.67	
SM 4500 F-C-97	Fluoride	94.9	96.9 95.4			0.960
SM 5310 B-00	Organic Carbon	93.8	93.9 94.8			0.516

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1971256, 1971259, 1971260
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1971256, 1971259, 1971260
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1971256, 1971259, 1971260
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1971257, 1971261, 1971262
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1971257, 1971261, 1971262
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1971257, 1971261, 1971262
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1971257, 1971261, 1971262
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1971258, 1971263, 1971264
SM 2120 B / E31780	True Color measured at 450 nm	1971256, 1971259, 1971260
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1971256, 1971259, 1971260
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1971256, 1971259, 1971260
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1971256, 1971259, 1971260
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1971256, 1971259, 1971260

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1971257, 1971261, 1971262

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	03/02/2018			03/02/2018 14:59	Tanya Welborn	1971256, 1971259, 1971260
EPA 300.0 Rev. 2.1	03/02/2018			03/06/2018	Lipi Saha	1971256, 1971259, 1971260
EPA 350.1 Rev. 2.0	03/02/2018			03/08/2018	Ping Hua	1971257, 1971261, 1971262
EPA 351.2 Rev. 2.0	03/02/2018	03/05/2018	Adrian Shelby	03/06/2018	Joseph Suarez	1971257, 1971261, 1971262
EPA 353.2 Rev. 2.0	03/02/2018			03/05/2018	Lauren Bottorf	1971257, 1971261, 1971262
EPA 365.1 Rev. 2.0	03/02/2018	03/05/2018	Sima Feizi	03/06/2018	Beverly Y. Sanders	1971257, 1971261, 1971262
EPA 365.1 Rev. 2.0 dissolved	03/02/2018			03/02/2018 15:35	Julia Storbeck	1971264
	03/02/2018			03/02/2018 15:36	Julia Storbeck	1971258
	03/02/2018			03/02/2018 15:37	Julia Storbeck	1971263
	03/02/2018			03/02/2018 16:04	Tanya Welborn	1971256
SM 2120 B	03/02/2018			03/02/2018 16:05	Tanya Welborn	1971259
	03/02/2018			03/02/2018 16:06	Tanya Welborn	1971260
	03/02/2018			03/09/2018	Dale L. Simmons	1971256, 1971259, 1971260
SM 2320 B-97	03/02/2018			03/07/2018	Yijie Li	1971256, 1971259, 1971260
SM 2540 C-97	03/02/2018			03/07/2018	Yijie Li	1971256, 1971259, 1971260
SM 2540 D-97	03/02/2018			03/09/2018	Dale L. Simmons	1971256, 1971259, 1971260
SM 4500 F-C-97	03/02/2018			03/06/2018	Megan Treadwell	1971257, 1971261, 1971262
SM 5310 B-00	03/02/2018					