

Chemical Analysis Report

CEN-DIST-2017-11-28-03

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

Event Description: **Deep Creek / Spring Garden Crk + HA**
Request ID: **RQ-2017-11-27-63**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 13-DEC-2017 16:06

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: DEEP CREEK @ 170M UPSTREAM OF SPRING GARDEN CREEK **Collection Date/Time: 11/27/2017 11:10**

Field ID: G2CE0083

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1948603	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P335984	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P336266	
		Sulfate	1.9		mg SO4/L	P336270	
	SM 2120 B	Color (true)	630		PCU	P335991	
	SM 2320 B-97	Total Alkalinity	6.0		mg CaCO3/L	P336463	
	SM 2540 C-97	TDS	171		mg/L	P336390	
	SM 2540 D-97	TSS	2	I	mg/L	P336364	
	SM 4500 F-C-97	Fluoride	0.049	I	mg F/L	P336467	
1948605	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P336410	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P336288	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P336162	
	EPA 365.1 Rev. 2.0	Total-P	0.050		mg P/L	P336205	
	SM 5310 B-00	Organic Carbon	50		mg C/L	P336198	
1948607	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P336024	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: SPRING GARDEN CREEK @ JUST UPSTREAM OF DEEP CREEK **Collection Date/Time: 11/27/2017 11:30**

Field ID: G2CE0126

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1948604	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P335984	
	EPA 300.0 Rev. 2.1	Chloride	70		mg Cl/L	P336188	
		Sulfate	8.8		mg SO4/L	P336191	
	SM 2120 B	Color (true)	520		PCU	P335991	
	SM 2320 B-97	Total Alkalinity	53		mg CaCO3/L	P336463	
	SM 2540 C-97	TDS	311		mg/L	P336390	
	SM 2540 D-97	TSS	3	I	mg/L	P336364	
	SM 4500 F-C-97	Fluoride	0.067	I	mg F/L	P336467	
1948606	EPA 350.1 Rev. 2.0	Ammonia-N	0.060		mg N/L	P336410	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P336562	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.044		mg N/L	P336162	
	EPA 365.1 Rev. 2.0	Total-P	0.27		mg P/L	P336205	
	SM 5310 B-00	Organic Carbon	42		mg C/L	P336198	
1948608	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.21		mg P/L	P336024	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low 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: P335984

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336188

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336191

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336266

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336270

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336410

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336288

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336562

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336162

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P336205

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P336024

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

Reference Method: SM 2120 B
Batch ID: P335991

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P336463

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

Reference Method: SM 2540 C-97
Batch ID: P336390

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P336364

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P336467

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P336198

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: P336188

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336188

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336191

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336266

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	94.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336270

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336410

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336288

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: P336562

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336162

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P336205

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P336024

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

Reference Method: SM 2320 B-97
Batch ID: P336463

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

Reference Method: SM 4500 F-C-97
Batch ID: P336467

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

Reference Method: SM 5310 B-00
Batch ID: P336198

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336188

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1948014	Chloride	96.4		P	90 - 110
1949062	Chloride	96.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336191

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1948014	Sulfate	97.2		P	90 - 110
1949062	Sulfate	98.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949216	Chloride	95.0		P	90 - 110
1949218	Chloride	95.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336270

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949216	Sulfate	96.2		P	90 - 110
1949218	Sulfate	95.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336410

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1948605	Ammonia-N	105	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336288

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1948618	Kjeldahl Nitrogen	102	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336562

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949621	Kjeldahl Nitrogen	95.6	97.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336162

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1948605	NO2NO3-N	98.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P336205

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1948618	Total-P	100	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P336024

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1948627	O-Phosphate-P	100	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P336467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1948507	Fluoride	96.6	97.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P336198

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1948469	Organic Carbon	94.8	96.2	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P335984

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948529	Turbidity	2.33	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336188

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949062	Chloride	1.05	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336191

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949062	Sulfate	1.17	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949216	Chloride	0.664	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949216	Sulfate	0.750	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336410

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948605	Ammonia-N	0.277	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336288

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948618	Kjeldahl Nitrogen	2.13	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949621	Kjeldahl Nitrogen	1.14	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336162

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948605	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P336205

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948618	Total-P	1.24	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P336024

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948627	O-Phosphate-P	0.0802	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P335991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948617	Color (true)	0.192	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P336463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948507	Total Alkalinity	0.353	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P336390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948568	TDS	6.90	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P336467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948507	Fluoride	0.948	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P336198

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948469	Organic Carbon	1.41	Spike	P	0 - 20

Quality Assurance Report Precision

* 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 180.1 Rev. 2.0
Run ID: A80557
Included Lab Sample IDs: 1948603, 1948604

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

Reference Method: SM 2120 B
Run ID: A80558
Included Lab Sample IDs: 1948603, 1948604

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.1	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A80571
Included Lab Sample IDs: 1948607, 1948608

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.2	99.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A80623
Included Lab Sample IDs: 1948605, 1948606

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A80632
Included Lab Sample IDs: 1948603, 1948604

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Chloride	101	100	P/P	90 - 110
Sulfate	99.2	99.9	P/P	90 - 110
Sulfate	99.3	99.8	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A80635
Included Lab Sample IDs: 1948605, 1948606

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	97.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
 Run ID: A80667
 Included Lab Sample IDs: 1948605, 1948606

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

Reference Method: EPA 350.1 Rev. 2.0
 Run ID: A80711
 Included Lab Sample IDs: 1948605, 1948606

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	107	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Run ID: A80724
 Included Lab Sample IDs: 1948605

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	106	P/P	90 - 110

Reference Method: SM 2320 B-97
 Run ID: A80732
 Included Lab Sample IDs: 1948603, 1948604

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.7	P/P	90 - 110
Total Alkalinity	99.7	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Run ID: A80732
 Included Lab Sample IDs: 1948603, 1948604

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	100	P/P	90 - 110
Fluoride	99.5	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Run ID: A80797
 Included Lab Sample IDs: 1948606

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.8	99.0	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
 Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
 Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				2.33	
EPA 300.0 Rev. 2.1	Chloride	96.0	96.5 96.4		1.05	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 300.0 Rev. 2.1	Chloride	94.2	95.0	95.3	0.664	
	Sulfate	98.1	98.8	97.2	1.17	
	Sulfate	94.5	96.2	95.4	0.750	
EPA 350.1 Rev. 2.0	Ammonia-N	104	105	105		0.277
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	102	105		2.13
	Kjeldahl Nitrogen	97.2	95.6	97.3		1.14
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	98.0	98.0		0.0
EPA 365.1 Rev. 2.0	Total-P	99.2	100	98.9		1.24
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	100	100		0.0802
SM 2120 B	Color (true)				0.192	
SM 2320 B-97	Total Alkalinity	102			0.353	
SM 2540 C-97	TDS				6.90	
SM 4500 F-C-97	Fluoride	95.4	96.6	97.6		0.948
SM 5310 B-00	Organic Carbon	100	94.8	96.2		1.41

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1948603, 1948604
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1948603, 1948604
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1948603, 1948604
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1948605, 1948606
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1948605, 1948606
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1948605, 1948606
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1948605, 1948606
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1948607, 1948608
SM 2120 B / E31780	True Color measured at 450 nm	1948603, 1948604
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1948603, 1948604
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1948603, 1948604
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1948603, 1948604
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1948603, 1948604
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1948605, 1948606

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	11/28/2017			11/28/2017 15:59	DeAsia Armster	1948603, 1948604
EPA 300.0 Rev. 2.1	11/28/2017			12/01/2017	Irina Carbone	1948604
	11/28/2017			12/02/2017	Julia Storbeck	1948603
EPA 350.1 Rev. 2.0	11/28/2017			12/05/2017	Sofia Elnemr	1948605, 1948606
EPA 351.2 Rev. 2.0	11/28/2017	12/04/2017	Adrian Shelby	12/06/2017	Joseph Suarez	1948605
	11/28/2017	12/07/2017	Adrian Shelby	12/08/2017	Joseph Suarez	1948606
EPA 353.2 Rev. 2.0	11/28/2017			12/01/2017	Beverly Y. Sanders	1948605, 1948606
EPA 365.1 Rev. 2.0	11/28/2017	12/01/2017	Sima Feizi	12/04/2017	Lipi Saha	1948605, 1948606
EPA 365.1 Rev. 2.0 dissolved	11/28/2017			11/28/2017 15:10	Megan Treadwell	1948607
	11/28/2017			11/28/2017 15:11	Megan Treadwell	1948608
SM 2120 B	11/28/2017			11/28/2017 16:17	Tanya Welborn	1948603, 1948604
SM 2320 B-97	11/28/2017			12/05/2017	Dale L. Simmons	1948603, 1948604
SM 2540 C-97	11/28/2017			12/01/2017	Yijie Li	1948603, 1948604
SM 2540 D-97	11/28/2017			12/01/2017	Yijie Li	1948603, 1948604
SM 4500 F-C-97	11/28/2017			12/05/2017	Dale L. Simmons	1948603, 1948604
SM 5310 B-00	11/28/2017			11/30/2017	Ping Hua	1948605, 1948606