

Chemical Analysis Report

SW-DIST-2017-01-31-01

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

Event Description: **SMP RUN 7**
Request ID: **RQ-2017-01-30-31**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

For additional information please contact
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 21-FEB-2017 12:20

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: SKINNER

Collection Date/Time: 01/30/2017 13:00

Field ID: G5SW0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1868312	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P319022	
	EPA 300.0 Rev. 2.1	Chloride	2.1		mg Cl/L	P319326	
		Sulfate	0.20	U	mg SO4/L	P319329	
	SM 2120 B	Color (true)	19		PCU	P319002	
	SM 2320 B-97	Total Alkalinity	75		mg CaCO3/L	P319275	
	SM 2540 C-97	TDS	97		mg/L	P319427	
	SM 2540 D-97	TSS	2	U	mg/L	P319177	
	SM 4500 F-C-97	Fluoride	0.094	I	mg F/L	P319278	
1868316	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P319342	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P319124	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P319259	
	EPA 365.1 Rev. 2.0	Total-P	0.062		mg P/L	P319100	
	SM 5310 B-00	Organic Carbon	5.9		mg C/L	P319074	
1868320	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.039		mg P/L	P319016	

Sample Location: TOOKE

Collection Date/Time: 01/30/2017 12:00

Field ID: G5SW0121

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1868313	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P319022	
	EPA 300.0 Rev. 2.1	Chloride	7.8		mg Cl/L	P319327	
		Sulfate	4.5		mg SO4/L	P319330	
	SM 2120 B	Color (true)	13		PCU	P319002	
	SM 2320 B-97	Total Alkalinity	7.0		mg CaCO3/L	P319503	
	SM 2540 C-97	TDS	61		mg/L	P319427	
	SM 2540 D-97	TSS	4	I	mg/L	P319177	
	SM 4500 F-C-97	Fluoride	0.045	I	mg F/L	P319278	
1868317	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P319342	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.96		mg N/L	P319123	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P319470	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P319100	
	SM 5310 B-00	Organic Carbon	9.5		mg C/L	P319074	
1868321	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P319016	

Sample Location: NEFF

Collection Date/Time: 01/30/2017 11:00

Field ID: G4SW0087

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1868314	EPA 180.1 Rev. 2.0	Turbidity	30		NTU	P319022	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P319327	
		Sulfate	3.0		mg SO4/L	P319330	
	SM 2120 B	Color (true)	140		PCU	P319002	
	SM 2320 B-97	Total Alkalinity	12		mg CaCO3/L	P319275	

Field ID: G4SW0087

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1868314	SM 2540 C-97	TDS	87		mg/L	P319427	
	SM 2540 D-97	TSS	30		mg/L	P319177	
	SM 4500 F-C-97	Fluoride	0.080	I	mg F/L	P319278	
1868318	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P319342	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.4		mg N/L	P319124	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P319470	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P319100	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P319074	
1868322	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P319016	

Sample Location: IOLA-W

Collection Date/Time: 01/30/2017 10:00

Field ID: G5SW0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1868315	EPA 180.1 Rev. 2.0	Turbidity	0.99		NTU	P319022	
	EPA 300.0 Rev. 2.1	Chloride	18	A	mg Cl/L	P319326	
		Sulfate	5.6	A	mg SO4/L	P319329	
	SM 2120 B	Color (true)	8.2		PCU	P319002	
	SM 2320 B-97	Total Alkalinity	35	A	mg CaCO3/L	P319275	
	SM 2540 C-97	TDS	87		mg/L	P319427	
	SM 2540 D-97	TSS	3	I	mg/L	P319177	
	SM 4500 F-C-97	Fluoride	0.099	I	mg F/L	P319278	
1868319	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P319342	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P319124	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P319470	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P319100	
	SM 5310 B-00	Organic Carbon	5.6		mg C/L	P319074	
1868323	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P319016	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P319022

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P319326

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P319327

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319327

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319329

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319330

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319342

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319123

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319124

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319259

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319470

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319100

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P319016

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

Reference Method: SM 2120 B
 Batch ID: P319002

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
 Batch ID: P319275

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

Reference Method: SM 2320 B-97
 Batch ID: P319503

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

Reference Method: SM 2540 C-97
 Batch ID: P319427

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P319177

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P319278

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P319074

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: P319326

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: P319326

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319327

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319329

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319330

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319342

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319123

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319124

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: P319259

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319470

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	105		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P319100

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	94.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P319016

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

Reference Method: SM 2320 B-97
 Batch ID: P319275

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

Reference Method: SM 2320 B-97
 Batch ID: P319503

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

Reference Method: SM 4500 F-C-97
 Batch ID: P319278

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P319074

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P319326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1868301	Chloride	105		P	90 - 110
1868315	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P319327

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1868387	Chloride	106		P	90 - 110
1868459	Chloride	107		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1868301	Sulfate	97.7		P	90 - 110
1868315	Sulfate	97.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319330

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1868387	Sulfate	99.3		P	90 - 110
1868459	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1868316	Ammonia-N	102	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319123

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1868219	Kjeldahl Nitrogen	101	94.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319124

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1868316	Kjeldahl Nitrogen	97.4	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319259

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1868219	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319470

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1867226	NO2NO3-N	107	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319100

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1868274	Total-P	98.2	92.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319016

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1868278	O-Phosphate-P	99.5	99.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P319278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1868315	Fluoride	98.9	98.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P319074

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1868166	Organic Carbon	96.1	96.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P319022

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868293	Turbidity	3.48	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868315	Chloride	0.329	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868387	Chloride	0.924	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868315	Sulfate	0.0448	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319330

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868387	Sulfate	0.110	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868316	Ammonia-N	1.56	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319123

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868219	Kjeldahl Nitrogen	4.04	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319124

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868316	Kjeldahl Nitrogen	2.31	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868219	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319470

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1867226	NO2NO3-N	0.939	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319100

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868274	Total-P	6.21	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868278	O-Phosphate-P	0.301	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P319002

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868268	Color (true)	0.496	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P319275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868315	Total Alkalinity	0.200	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P319503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869256	Total Alkalinity	0.0961	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P319427

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868301	TDS	8.70	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P319177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868266	TSS	1.74	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P319278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868315	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P319074

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868166	Organic Carbon	0.308	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: SM 2120 B
Run ID: A74192
Included Lab Sample IDs: 1868312, 1868313, 1868314, 1868315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	99.8	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A74194

Included Lab Sample IDs: 1868320, 1868321, 1868322, 1868323

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A74195

Included Lab Sample IDs: 1868312, 1868313, 1868314, 1868315

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A74206

Included Lab Sample IDs: 1868312, 1868313, 1868314, 1868315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	104	P/P	90 - 110
Chloride	102	101	P/P	90 - 110
Chloride	102	100	P/P	90 - 110
Sulfate	92.4	99.3	P/P	90 - 110
Sulfate	97.1	93.4	P/P	90 - 110
Sulfate	98.2	92.4	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A74208

Included Lab Sample IDs: 1868316, 1868317, 1868318, 1868319

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.0	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74224

Included Lab Sample IDs: 1868316, 1868318

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.1	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74243

Included Lab Sample IDs: 1868317, 1868319

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.2	96.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74250

Included Lab Sample IDs: 1868316, 1868317, 1868318, 1868319

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	106	P/P	90 - 110
Kjeldahl Nitrogen	107	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74255

Included Lab Sample IDs: 1868316

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	98.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A74269

Included Lab Sample IDs: 1868312, 1868314, 1868315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	106	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A74269

Included Lab Sample IDs: 1868312, 1868313, 1868314, 1868315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	100	P/P	90 - 110
Fluoride	99.0	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74290

Included Lab Sample IDs: 1868316, 1868317, 1868318, 1868319

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	100	P/P	90 - 110
Ammonia-N	99.8	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74335

Included Lab Sample IDs: 1868317, 1868318, 1868319

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

Reference Method: SM 2320 B-97

Run ID: A74348

Included Lab Sample IDs: 1868313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	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	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				3.48	
EPA 300.0 Rev. 2.1	Chloride	104	104 105		0.329	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 300.0 Rev. 2.1	Chloride	105	106	107		0.924	
	Sulfate	97.9	97.3	97.7		0.0448	
	Sulfate	98.9	99.3	102		0.110	
EPA 350.1 Rev. 2.0	Ammonia-N	100	102	100			1.56
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	101	94.6			4.04
	Kjeldahl Nitrogen	101	97.4	101			2.31
EPA 353.2 Rev. 2.0	NO2NO3-N	103	104	104			0.0
	NO2NO3-N	105	107	106			0.939
EPA 365.1 Rev. 2.0	Total-P	94.7	98.2	92.1			6.21
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	99.5	99.8			0.301
SM 2120 B	Color (true)					0.496	
SM 2320 B-97	Total Alkalinity	103				0.200	
	Total Alkalinity	103				0.0961	
SM 2540 C-97	TDS					8.70	
SM 2540 D-97	TSS					1.74	
SM 4500 F-C-97	Fluoride	98.4	98.9	98.9			0.0
SM 5310 B-00	Organic Carbon	96.4	96.1	96.6			0.308

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1868312, 1868313, 1868314, 1868315
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1868312, 1868313, 1868314, 1868315
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1868312, 1868313, 1868314, 1868315
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1868316, 1868317, 1868318, 1868319
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1868316, 1868317, 1868318, 1868319
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1868316, 1868317, 1868318, 1868319
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1868316, 1868317, 1868318, 1868319
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1868320, 1868321, 1868322, 1868323
SM 2120 B / E31780	True Color measured at 450 nm	1868312, 1868313, 1868314, 1868315
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1868312, 1868313, 1868314, 1868315
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1868312, 1868313, 1868314, 1868315
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1868312, 1868313, 1868314, 1868315
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1868312, 1868313, 1868314, 1868315
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1868316, 1868317, 1868318, 1868319

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	01/31/2017			01/31/2017 16:45	Julie Michelle Frank	1868312, 1868313, 1868314, 1868315
EPA 300.0 Rev. 2.1	01/31/2017			02/03/2017	Ping Hua	1868315
	01/31/2017			02/04/2017	Ping Hua	1868312, 1868313, 1868314
EPA 350.1 Rev. 2.0	01/31/2017			02/02/2017	Sofia Elnemr	1868316, 1868317, 1868318, 1868319
EPA 351.2 Rev. 2.0	01/31/2017	02/02/2017	Adrian Shelby	02/03/2017	Joseph Suarez	1868316, 1868317, 1868318, 1868319
EPA 353.2 Rev. 2.0	01/31/2017			02/03/2017	Beverly Y. Sanders	1868316
	01/31/2017			02/07/2017	Virginia P. Brown	1868317, 1868318, 1868319
EPA 365.1 Rev. 2.0	01/31/2017	02/01/2017	Vijayalakshmi Reddy	02/01/2017	Lipi Saha	1868316, 1868318
	01/31/2017	02/01/2017	Vijayalakshmi Reddy	02/02/2017	Lipi Saha	1868317, 1868319
EPA 365.1 Rev. 2.0 dissolved	01/31/2017			01/31/2017 15:41	Julie Michelle Frank	1868320
	01/31/2017			01/31/2017 15:42	Julie Michelle Frank	1868321
	01/31/2017			01/31/2017 15:43	Julie Michelle Frank	1868322, 1868323
SM 2120 B	01/31/2017			01/31/2017 15:27	Jared I. Manley	1868312
	01/31/2017			01/31/2017 15:28	Jared I. Manley	1868313
	01/31/2017			01/31/2017 15:29	Jared I. Manley	1868314
	01/31/2017			01/31/2017 15:30	Jared I. Manley	1868315
SM 2320 B-97	01/31/2017			02/03/2017	Dale L. Simmons	1868312, 1868314, 1868315
	01/31/2017			02/07/2017	Dale L. Simmons	1868313
SM 2540 C-97	01/31/2017			02/03/2017	Blanca Fach	1868312, 1868313, 1868314, 1868315
SM 2540 D-97	01/31/2017			02/01/2017	Christopher Armour	1868312, 1868313, 1868314, 1868315
SM 4500 F-C-97	01/31/2017			02/03/2017	Dale L. Simmons	1868312, 1868313, 1868314, 1868315
SM 5310 B-00	01/31/2017			02/01/2017	Julie Michelle Frank	1868316, 1868317, 1868318, 1868319