

Chemical Analysis Report

SO-DIST-2017-06-22-01

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

Event Description: **SMP: Wilderness WW**
Request ID: **RQ-2017-06-19-05**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901
Attn: Ben Paswater

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 11-JUL-2017 11:10



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: ENRE 11 AT DADS BAY

Collection Date/Time: 06/21/2017 11:50

Field ID: G5SD062117-1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908293	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P327357	
	SM 2320 B-97	Total Alkalinity	120		mg CaCO3/L	P327619	
	SM 2540 D-97	TSS	6	IA	mg/L	P327729	
	SM 4500 F-C-97	Fluoride	0.40		mg F/L	P327623	
1908299	EPA 350.1 Rev. 2.0	Ammonia-N	0.17		mg N/L	P327371	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P327345	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327522	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P327471	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P327762	
1908305	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327353	

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: ENRE11 AT ALLIGATOR BAY

Collection Date/Time: 06/21/2017 12:15

Field ID: G5SD062117-2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908294	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P327357	
	SM 2320 B-97	Total Alkalinity	120		mg CaCO3/L	P327619	
	SM 2540 D-97	TSS	3	U	mg/L	P327729	
	SM 4500 F-C-97	Fluoride	0.39		mg F/L	P327623	
1908300	EPA 350.1 Rev. 2.0	Ammonia-N	0.21		mg N/L	P327371	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P327345	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P327522	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P327471	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P327762	
1908306	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327353	

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: ENRE9 CHATHAM RIVER

Collection Date/Time: 06/21/2017 13:20

Field ID: G5SD062117-5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908295	EPA 180.1 Rev. 2.0	Turbidity	8.9		NTU	P327357	
	SM 2320 B-97	Total Alkalinity	134		mg CaCO3/L	P327619	
	SM 2540 D-97	TSS	15		mg/L	P327729	
	SM 4500 F-C-97	Fluoride	0.62		mg F/L	P327623	
1908301	EPA 350.1 Rev. 2.0	Ammonia-N	0.075		mg N/L	P327371	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.86		mg N/L	P327345	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.092		mg N/L	P327522	
	EPA 365.1 Rev. 2.0	Total-P	0.041		mg P/L	P327471	
	SM 5310 B-00	Organic Carbon	9.7		mg C/L	P327762	
1908307	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.011		mg P/L	P327353	

Field ID: G5SD062117-5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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: ENRE9 HUSTON RIVER

Collection Date/Time: 06/21/2017 13:45

Field ID: G5SD062117-7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908296	EPA 180.1 Rev. 2.0	Turbidity	9.6		NTU	P327357	
	SM 2320 B-97	Total Alkalinity	133		mg CaCO3/L	P327619	
	SM 2540 D-97	TSS	9	I	mg/L	P327729	
	SM 4500 F-C-97	Fluoride	0.61		mg F/L	P327623	
1908302	EPA 350.1 Rev. 2.0	Ammonia-N	0.048		mg N/L	P327371	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P327435	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.078		mg N/L	P327522	
	EPA 365.1 Rev. 2.0	Total-P	0.036		mg P/L	P327471	
	SM 5310 B-00	Organic Carbon	9.6		mg C/L	P327762	

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: ENRE11 AT DADS BAY DUPLICATE

Collection Date/Time: 06/21/2017 11:55

Field ID: G1SD062117-9 dup

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908297	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P327357	
	SM 2320 B-97	Total Alkalinity	120		mg CaCO3/L	P327619	
	SM 2540 D-97	TSS	4	I	mg/L	P327730	
	SM 4500 F-C-97	Fluoride	0.39		mg F/L	P327623	
1908303	EPA 350.1 Rev. 2.0	Ammonia-N	0.16		mg N/L	P327371	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P327345	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327522	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P327471	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P327803	

Sample Location: FIELD BLANK

Collection Date/Time: 06/21/2017 16:30

Field ID: G1SDBLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908298	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P327357	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P327511	
	SM 2540 D-97	TSS	2	U	mg/L	P327727	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P327515	
1908304	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P327371	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P327434	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327478	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P327400	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P327588	
1908308	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327352	

Field ID: G1SDBLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
Ref. Method and Comment: SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. EPA 351.2 Rev. 2.0: 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: P327357

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327371

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327345

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327434

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327435

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327478

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327522

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327400

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327471

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327352

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327353

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

Reference Method: SM 2320 B-97
Batch ID: P327511

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

Reference Method: SM 2320 B-97
Batch ID: P327619

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

Reference Method: SM 2540 D-97
Batch ID: P327727

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P327729

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P327730

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P327515

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P327623

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P327588

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

Reference Method: SM 5310 B-00
Batch ID: P327762

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

Reference Method: SM 5310 B-00
Batch ID: P327803

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: P327371

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: P327345

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: P327434

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327435

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: P327478

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327478

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: P327522

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327400

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327471

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327352

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327353

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

Reference Method: SM 2320 B-97
Batch ID: P327511

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

Reference Method: SM 2320 B-97
Batch ID: P327619

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

Reference Method: SM 4500 F-C-97
Batch ID: P327515

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.5		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P327623

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P327588

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.0		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P327762

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P327803

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327371

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908301	Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327345

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908162	Kjeldahl Nitrogen	107	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327435

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908427	Kjeldahl Nitrogen	92.4	96.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327478

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908351	NO2NO3-N	96.1	96.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327522

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: P327522

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908165	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327400

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908174	Total-P	98.6	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327471

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908371	Total-P	101	94.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327352

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908175	O-Phosphate-P	94.1	95.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327353

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908372	O-Phosphate-P	97.5	98.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P327515

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908024	Fluoride	95.8	97.6	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P327623

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908620	Fluoride	97.4	98.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P327588

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908237	Organic Carbon	94.2	92.9	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P327762

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908159	Organic Carbon	96.5	95.9	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P327803

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908303	Organic Carbon	91.0	95.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P327357

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908110	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327371

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908301	Ammonia-N	0.411	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908162	Kjeldahl Nitrogen	2.50	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908368	Kjeldahl Nitrogen	0.198	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327435

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908427	Kjeldahl Nitrogen	3.61	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327478

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908351	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327522

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908165	NO2NO3-N	0.480	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908174	Total-P	0.106	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327471

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908371	Total-P	6.15	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908175	O-Phosphate-P	0.810	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327353

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908372	O-Phosphate-P	0.414	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P327511

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908024	Total Alkalinity	2.49	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P327619

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908620	Total Alkalinity	0.128	Sample	P	0 - 4.8

Reference Method: SM 2540 D-97
Batch ID: P327730

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908422	TSS	1.48	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P327515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908024	Fluoride	1.52	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P327623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908620	Fluoride	0.915	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P327588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908237	Organic Carbon	0.682	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P327762

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908159	Organic Carbon	0.512	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P327803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908303	Organic Carbon	3.46	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 180.1 Rev. 2.0
Run ID: A77286
Included Lab Sample IDs: 1908293, 1908294, 1908295, 1908296, 1908297, 1908298

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A77289
Included Lab Sample IDs: 1908299, 1908300, 1908301, 1908302, 1908303, 1908304

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	100	P/P	90 - 110
Ammonia-N	98.2	97.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A77289

Included Lab Sample IDs: 1908299, 1908300, 1908301, 1908302, 1908303, 1908304

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A77298

Included Lab Sample IDs: 1908305, 1908306, 1908307, 1908308

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77340

Included Lab Sample IDs: 1908304

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: A77355

Included Lab Sample IDs: 1908298

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

Reference Method: SM 4500 F-C-97

Run ID: A77355

Included Lab Sample IDs: 1908298

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	97.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77359

Included Lab Sample IDs: 1908299, 1908300, 1908301, 1908302, 1908303

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77361

Included Lab Sample IDs: 1908304

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77365

Included Lab Sample IDs: 1908299, 1908300, 1908301, 1908302, 1908303

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	98.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A77379
Included Lab Sample IDs: 1908304

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.7	92.7	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A77390
Included Lab Sample IDs: 1908293, 1908294, 1908295, 1908296, 1908297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	104	P/P	90 - 110
Total Alkalinity	104	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A77390
Included Lab Sample IDs: 1908293, 1908294, 1908295, 1908296, 1908297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.7	98.9	P/P	90 - 110
Fluoride	98.4	97.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A77425
Included Lab Sample IDs: 1908299, 1908300, 1908301, 1908303

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	90.2	97.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A77436
Included Lab Sample IDs: 1908302, 1908304

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.2	94.9	P/P	90 - 110
Kjeldahl Nitrogen	94.8	95.4	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A77437
Included Lab Sample IDs: 1908299, 1908300, 1908301, 1908302

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.1	95.6	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A77463
Included Lab Sample IDs: 1908303

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	93.8	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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					0.0	
EPA 350.1 Rev. 2.0	Ammonia-N	104	101	100			0.411
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	107	104			2.50
	Kjeldahl Nitrogen	100					0.198
	Kjeldahl Nitrogen	102	92.4	96.3			3.61
EPA 353.2 Rev. 2.0	NO2NO3-N	104	96.1	96.1			0.0
	NO2NO3-N	103	104	104			0.480
EPA 365.1 Rev. 2.0	Total-P	98.2	98.6	98.5			0.106
	Total-P	102	101	94.6			6.15
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.8	94.1	95.4			0.810
	O-Phosphate-P	101	97.5	98.1			0.414
SM 2320 B-97	Total Alkalinity	103				2.49	
	Total Alkalinity	103				0.128	
SM 2540 D-97	TSS					1.48	
SM 4500 F-C-97	Fluoride	94.5	95.8	97.6			1.52
	Fluoride	95.8	97.4	98.8			0.915
SM 5310 B-00	Organic Carbon	94.0	94.2	92.9			0.682
	Organic Carbon	97.8	96.5	95.9			0.512
	Organic Carbon	96.0	91.0	95.5			3.46

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1908293, 1908294, 1908295, 1908296, 1908297, 1908298
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1908299, 1908300, 1908301, 1908302, 1908303, 1908304
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1908299, 1908300, 1908301, 1908302, 1908303, 1908304
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1908299, 1908300, 1908301, 1908302, 1908303, 1908304
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1908299, 1908300, 1908301, 1908302, 1908303, 1908304
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1908305, 1908306, 1908307, 1908308
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1908293, 1908294, 1908295, 1908296, 1908297, 1908298
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1908293, 1908294, 1908295, 1908296, 1908297, 1908298
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1908293, 1908294, 1908295, 1908296, 1908297, 1908298
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1908299, 1908300, 1908301, 1908302, 1908303, 1908304

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	06/22/2017			06/22/2017 16:55	DeAsia Armster	1908293, 1908294, 1908295, 1908296, 1908297, 1908298
EPA 350.1 Rev. 2.0	06/22/2017			06/22/2017	Sofia Elnemr	1908299, 1908300, 1908301, 1908302, 1908303, 1908304
EPA 351.2 Rev. 2.0	06/22/2017	06/23/2017	Adrian Shelby	06/29/2017	Joseph Suarez	1908299, 1908300, 1908301, 1908303
	06/22/2017	06/26/2017	Adrian Shelby	06/29/2017	Joseph Suarez	1908302, 1908304
EPA 353.2 Rev. 2.0	06/22/2017			06/26/2017	Beverly Y. Sanders	1908304
	06/22/2017			06/27/2017	Beverly Y. Sanders	1908299, 1908300, 1908301, 1908302, 1908303
EPA 365.1 Rev. 2.0	06/22/2017	06/23/2017	Vijayalakshmi Reddy	06/26/2017	Lipi Saha	1908304
	06/22/2017	06/26/2017	Vijayalakshmi Reddy	06/27/2017	Lipi Saha	1908299, 1908300, 1908301, 1908302, 1908303
EPA 365.1 Rev. 2.0 dissolved	06/22/2017			06/22/2017 17:10	Anthony C. Onicha	1908305
	06/22/2017			06/22/2017 17:11	Anthony C. Onicha	1908306, 1908307
	06/22/2017			06/22/2017 17:12	Anthony C. Onicha	1908308
SM 2320 B-97	06/22/2017			06/27/2017	Dale L. Simmons	1908298
	06/22/2017			06/28/2017	Dale L. Simmons	1908293, 1908294, 1908295, 1908296, 1908297
SM 2540 D-97	06/22/2017			06/26/2017	Sima Feizi	1908293, 1908294, 1908295, 1908296, 1908297, 1908298
SM 4500 F-C-97	06/22/2017			06/27/2017	Dale L. Simmons	1908298
	06/22/2017			06/28/2017	Dale L. Simmons	1908293, 1908294, 1908295, 1908296, 1908297
SM 5310 B-00	06/22/2017			06/27/2017	Sofia Elnemr	1908304
	06/22/2017			06/29/2017	Sofia Elnemr	1908299, 1908300, 1908301, 1908302
	06/22/2017			06/30/2017	Sofia Elnemr	1908303