

Chemical Analysis Report

SO-DIST-2017-06-29-01

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

Event Description: **SMP: 10,000 Isles**
Request ID: **RQ-2017-06-19-07**
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: 14-JUL-2017 14:40



NON-CONFORMANCE REPORT INCLUDED

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: ENRE11 AT DADS BAY

Collection Date/Time: 06/27/2017 12:05

Field ID: G1SD062717-9

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909933	EPA 180.1 Rev. 2.0	Turbidity	0.55	A	NTU	P327747	
	SM 2320 B-97	Total Alkalinity	125		mg CaCO3/L	P328070	
	SM 2540 D-97	TSS	3	UA	mg/L	P328177	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P328173	
1909935	EPA 350.1 Rev. 2.0	Ammonia-N	0.063		mg N/L	P327894	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P328181	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327777	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P327864	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P328192	
1909937	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327732	

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: FIELD BLANK

Collection Date/Time: 06/27/2017 12:30

Field ID: G1SDBLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909934	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P327747	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P327909	
	SM 2540 D-97	TSS	2	U	mg/L	P328174	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P327983	
1909936	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P327892	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P328109	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327854	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P327860	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P327943	
1909938	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327741	

Ref. Method and Comment:

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

Non-Conformance Report

NCR ID: 6519

Event(s)

Job(s)

Sample(s)

Test(s)

SO-DIST-2017-06-29-01

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived one or more days late, by common carrier or hand delivery on 6/29/2017 9:35 J458 646 3338

Resolution: Customer contacted, email correspondence attached to sample submittal forms. Biology and Chemistry supervisors were notified by email.

Authorized by/Date: Ramsey K. White 7/13/2017

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry Colin Wright (850) 245-8085
Biology Cheryl Swanson (850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P327747

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327892

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327894

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328109

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328181

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327777

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327854

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327860

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: P327864

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327732

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327741

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

Reference Method: SM 2320 B-97
Batch ID: P327909

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

Reference Method: SM 2320 B-97
Batch ID: P328070

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

Reference Method: SM 2540 D-97
Batch ID: P328174

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P328177

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P327983

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P328173

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P327943

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

Reference Method: SM 5310 B-00
Batch ID: P328192

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: P327892

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327894

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328109

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328181

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: P327777

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327854

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327860

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
Batch ID: P327860

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	92.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327864

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327732

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.3		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327741

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

Reference Method: SM 2320 B-97
Batch ID: P327909

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

Reference Method: SM 2320 B-97
Batch ID: P328070

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

Reference Method: SM 4500 F-C-97
Batch ID: P327983

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

Reference Method: SM 4500 F-C-97
Batch ID: P328173

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

Reference Method: SM 5310 B-00
Batch ID: P327943

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P328192

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	91.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P327892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909884	Ammonia-N	98.1	98.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P327894

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910086	Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P328109

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909905	Kjeldahl Nitrogen	97.5	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P328181

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909540	Kjeldahl Nitrogen	91.8	95.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P327777

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909935	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P327854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909984	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P327860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909994	Total-P	101	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P327864

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327864

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909541	Total-P	93.3	94.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327732

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909937	O-Phosphate-P	94.9	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327741

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909907	O-Phosphate-P	95.6	98.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P327983

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909623	Fluoride	99.9	100	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P328173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910534	Fluoride	99.5	100	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P327943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909559	Organic Carbon	95.4	97.4	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P328192

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909935	Organic Carbon	93.2	92.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P327747

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909933	Turbidity	0.951	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909884	Ammonia-N	0.438	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327894

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910086	Ammonia-N	0.259	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328109

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909905	Kjeldahl Nitrogen	2.84	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328181

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909540	Kjeldahl Nitrogen	3.73	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327777

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909935	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909984	NO2NO3-N	0.329	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909994	Total-P	2.44	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327864

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909541	Total-P	0.854	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327732

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909937	O-Phosphate-P	2.60	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327741

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909907	O-Phosphate-P	1.72	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P327909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909623	Total Alkalinity	0.893	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P328070

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910241	Total Alkalinity	0.166	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
Batch ID: P327983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909623	Fluoride	0.542	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P328173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910534	Fluoride	0.502	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P327943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909559	Organic Carbon	1.29	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P328192

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909935	Organic Carbon	0.573	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 365.1 Rev. 2.0 dissolved

Run ID: A77426

Included Lab Sample IDs: 1909937, 1909938

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.5	P/P	90 - 110
O-Phosphate-P	99.5	99.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A77435

Included Lab Sample IDs: 1909933, 1909934

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: A77451

Included Lab Sample IDs: 1909935

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77492

Included Lab Sample IDs: 1909936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A77506

Included Lab Sample IDs: 1909935, 1909936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	99.8	P/P	90 - 110
Ammonia-N	100	99.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A77508

Included Lab Sample IDs: 1909934

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

Reference Method: SM 5310 B-00

Run ID: A77524

Included Lab Sample IDs: 1909936

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

Reference Method: SM 5310 B-00
Run ID: A77524
Included Lab Sample IDs: 1909936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.5	94.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A77532
Included Lab Sample IDs: 1909934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	101	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A77557
Included Lab Sample IDs: 1909933

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A77565
Included Lab Sample IDs: 1909935, 1909936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	99.0	P/P	90 - 110
Total-P	99.2	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A77578
Included Lab Sample IDs: 1909936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.2	94.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A77607
Included Lab Sample IDs: 1909933

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

Reference Method: SM 5310 B-00
Run ID: A77612
Included Lab Sample IDs: 1909935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	90.8	91.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A77637
Included Lab Sample IDs: 1909935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.3	91.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

* 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					0.951	
EPA 350.1 Rev. 2.0	Ammonia-N	104	98.1	98.7			0.438
	Ammonia-N	106	103	103			0.259
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.5	97.5	101			2.84
	Kjeldahl Nitrogen	101	91.8	95.6			3.73
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	100	100			0.0
	NO ₂ NO ₃ -N	104	100	101			0.329
EPA 365.1 Rev. 2.0	Total-P	92.2	101	103			2.44
	Total-P	98.6	93.3	94.1			0.854
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.3	94.9	97.4			2.60
	O-Phosphate-P	103	95.6	98.5			1.72
SM 2320 B-97	Total Alkalinity	103				0.893	
	Total Alkalinity	103				0.166	
SM 4500 F-C-97	Fluoride	98.4	99.9	100			0.542
	Fluoride	95.4	99.5	100			0.502
SM 5310 B-00	Organic Carbon	98.8	95.4	97.4			1.29
	Organic Carbon	91.2	93.2	92.4			0.573

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1909933, 1909934
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1909935, 1909936
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1909935, 1909936
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1909935, 1909936
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1909935, 1909936
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1909937, 1909938
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1909933, 1909934
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1909933, 1909934
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1909933, 1909934
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1909935, 1909936

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	06/29/2017			06/29/2017 11:24	DeAsia Armster	1909933, 1909934
EPA 350.1 Rev. 2.0	06/29/2017			07/03/2017	Sofia Elnemr	1909935, 1909936
EPA 351.2 Rev. 2.0	06/29/2017	07/03/2017	Adrian Shelby	07/06/2017	Tanya Welborn	1909936
	06/29/2017	07/10/2017	Adrian Shelby	07/11/2017	Joseph Suarez	1909935
EPA 353.2 Rev. 2.0	06/29/2017			06/30/2017	Beverly Y. Sanders	1909935
	06/29/2017			07/03/2017	Beverly Y. Sanders	1909936
EPA 365.1 Rev. 2.0	06/29/2017	07/03/2017	Vijayalakshmi Reddy	07/06/2017	Lipi Saha	1909935, 1909936
EPA 365.1 Rev. 2.0 dissolved	06/29/2017			06/29/2017 11:22	Ping Hua	1909937
	06/29/2017			06/29/2017 11:33	Ping Hua	1909938
SM 2320 B-97	06/29/2017			07/01/2017	Dale L. Simmons	1909934
	06/29/2017			07/07/2017	Dale L. Simmons	1909933
SM 2540 D-97	06/29/2017			07/03/2017	Sima Feizi	1909933, 1909934
SM 4500 F-C-97	06/29/2017			07/05/2017	Dale L. Simmons	1909934
	06/29/2017			07/07/2017	Dale L. Simmons	1909933
SM 5310 B-00	06/29/2017			07/04/2017	Sofia Elnemr	1909936
	06/29/2017			07/08/2017	Ping Hua	1909935