

Chemical Analysis Report

NE-DIST-2016-06-03-02

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

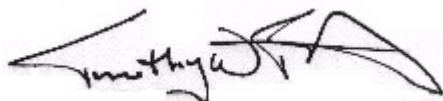
Event Description: **Nassau East**
Request ID: **RQ-2016-05-30-23**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way
Suite 100
Jacksonville, FL 32256
Attn: Nicole Frederick

For additional information please contact
Timothy W. Fitzpatrick
Liang-Tsair Lin, Ph.D.
Colin Wright, Ph.D.
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Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 27-JUN-2016 11:57



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: G4NE0002 SAWPIT CR BOAT RAMP

Collection Date/Time: 06/02/2016 11:25

Field ID: G4NE0002 SAWPIT CR BOAT RAMP

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1804933	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P305580	
	SM 2320 B-97	Total Alkalinity	121		mg CaCO3/L	P305935	
	SM 2540 D-97	TSS	30		mg/L	P306139	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P305938	
1804934	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P305905	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P305773	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P305913	
	SM 5310 B-00	Organic Carbon	4.1		mg C/L	P306215	
1804935	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	4.5		mg P/L	P305564	

Sample Location: 19020003 LOFTON CR @ A1A

Collection Date/Time: 06/02/2016 13:05

Field ID: 19020003 LOFTON CR @ A1A

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1804927	EPA 180.1 Rev. 2.0	Turbidity	3.6	A	NTU	P305578	
	EPA 300.0 Rev. 2.1	Chloride	1.3E+03		mg Cl/L	P305850	
		Sulfate	180		mg SO4/L	P305852	
	SM 2120 B	Color (true)	140		PCU	P305574	
	SM 2320 B-97	Total Alkalinity	40		mg CaCO3/L	P305934	
	SM 2540 C-97	TDS	2.49E+03		mg/L	P306109	
	SM 2540 D-97	TSS	6	I	mg/L	P306135	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P305937	
1804929	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P305909	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P305772	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P305699	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P306205	
1804931	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P305562	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: FIELD BLANK

Collection Date/Time: 06/02/2016 13:15

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1804928	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P305579	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P305850	
		Sulfate	0.20	U	mg SO4/L	P305852	
	SM 2120 B	Color (true)	2.5	U	PCU	P305574	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P305934	
	SM 2540 C-97	TDS	15	U	mg/L	P306108	
	SM 2540 D-97	TSS	2	U	mg/L	P306134	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P305937	
1804930	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P305909	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P305772	

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1804930	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P305807	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P306390	
1804932	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.19		mg P/L	P305562	

Ref. Method and Comment:
 SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
 EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The result was confirmed on 06/03/2016.

Non-Conformance Report

NCR ID: 5888

Event(s)

Job(s)

Sample(s)

Test(s)

NE-DIST-2016-06-03-02

NCR Type: SHIPPING/RECEIVING

NCR Category: Receiving

Observation: Received a sample for a Field Blank that was not recorded on the submittal form.

Resolution: The site was logged in according to information on the container.

Authorised by/Date: Kathryn Holland 6/6/2016

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

Chemistry Tim Fitzpatrick (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: P305578

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P305579

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P305580

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P305850

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305852

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305905

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305909

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305772

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305773

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305699

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305807

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305913

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305562

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305564

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

Reference Method: SM 2120 B
Batch ID: P305574

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P305934

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

Reference Method: SM 2320 B-97
Batch ID: P305935

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

Reference Method: SM 2540 C-97
Batch ID: P306108

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P306109

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P306134

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P306135

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P306139

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P305937

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P305938

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P306205

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

Reference Method: SM 5310 B-00
Batch ID: P306215

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

Reference Method: SM 5310 B-00
Batch ID: P306390

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: P305850

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305852

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305905

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305909

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305909

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305772

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305773

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305699

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305807

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305913

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305562

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305564

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

Reference Method: SM 2320 B-97
Batch ID: P305934

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 105

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P305935

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P305937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P305938

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P306205

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

Reference Method: SM 5310 B-00
Batch ID: P306215

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P306390

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804942	Chloride	102		P	90 - 110
1804995	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804942	Sulfate	99.7		P	90 - 110
1804995	Sulfate	101		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305905

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804870	Ammonia-N	104	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305909

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804784	Ammonia-N	98.5	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305772

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804929	Kjeldahl Nitrogen	102	93.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804921	Kjeldahl Nitrogen	88.4	96.1	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305699

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804822	NO2NO3-N	94.0	96.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305807

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1806066	NO2NO3-N	101	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305913

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804934	NO2NO3-N	98.0	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305562

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804823	O-Phosphate-P	97.6	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305564

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804790	O-Phosphate-P	97.9	99.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P305937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804783	Fluoride	99.9	99.9	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P305938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804788	Fluoride	98.1	98.7	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P306205

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804819	Organic Carbon	103		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P306215

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804089	Organic Carbon	94.9	97.1	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P306390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807440	Organic Carbon	98.5	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P305578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804927	Turbidity	4.18	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P305579

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804863	Turbidity	3.21	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P305580

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804950	Turbidity	2.65	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804942	Chloride	0.0803	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804942	Sulfate	0.680	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305905

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804870	Ammonia-N	0.288	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804784	Ammonia-N	1.18	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305772

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804929	Kjeldahl Nitrogen	5.27	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804921	Kjeldahl Nitrogen	4.31	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305699

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804822	NO2NO3-N	2.11	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1806066	NO2NO3-N	1.26	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305913

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804934	NO2NO3-N	1.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804823	O-Phosphate-P	1.73	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804790	O-Phosphate-P	0.857	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P305574

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804919	Color (true)	5.13	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P305934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804783	Total Alkalinity	0.154	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P305935

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804788	Total Alkalinity	1.14	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P306108

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804818	TDS	9.30	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P306109

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804863	TDS	3.60	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 D-97
Batch ID: P306139

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804748	TSS	8.89	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P305937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804783	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P305938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804788	Fluoride	0.464	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P306205

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804819	Organic Carbon	0.373	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P306215

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804089	Organic Carbon	2.00	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P306390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807440	Organic Carbon	1.53	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A69836
Included Lab Sample IDs: 1804931, 1804932, 1804935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.8	P/P	90 - 110
O-Phosphate-P	100	98.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A69838

Included Lab Sample IDs: 1804927, 1804928

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A69839

Included Lab Sample IDs: 1804927, 1804928, 1804933

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105
Turbidity	98.0	98.5	P/P	95 - 105
Turbidity	98.5	101	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69898

Included Lab Sample IDs: 1804929

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A69924

Included Lab Sample IDs: 1804927, 1804928

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Chloride	102	101	P/P	90 - 110
Sulfate	98.7	100	P/P	90 - 110
Sulfate	99.8	98.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69925

Included Lab Sample IDs: 1804930

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69938

Included Lab Sample IDs: 1804929, 1804930, 1804934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.2	99.1	P/P	90 - 110
Kjeldahl Nitrogen	98.8	96.1	P/P	90 - 110
Kjeldahl Nitrogen	99.1	98.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69948

Included Lab Sample IDs: 1804929, 1804930, 1804934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.6	P/P	90 - 110
Ammonia-N	101	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69950

Included Lab Sample IDs: 1804934

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

Reference Method: SM 2320 B-97

Run ID: A69953

Included Lab Sample IDs: 1804927, 1804928, 1804933

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	99.8	P/P	90 - 110
Total Alkalinity	105	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A69953

Included Lab Sample IDs: 1804927, 1804928, 1804933

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

Reference Method: SM 5310 B-00

Run ID: A70044

Included Lab Sample IDs: 1804929

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.1	95.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A70048

Included Lab Sample IDs: 1804934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	97.2	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A70101

Included Lab Sample IDs: 1804930

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	97.6	P/P	90 - 110

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				4.18	
	Turbidity				3.21	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					2.65	
EPA 300.0 Rev. 2.1	Chloride	103	102	102		0.0803	
	Sulfate	101	99.7	101		0.680	
EPA 350.1 Rev. 2.0	Ammonia-N	100	104	103			0.288
	Ammonia-N	101	98.5	99.9			1.18
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.2	102	93.9			5.27
	Kjeldahl Nitrogen	93.2	88.4	96.1			4.31
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	94.0	96.0			2.11
	NO2NO3-N	99.0	101	103			1.26
	NO2NO3-N	99.5	98.0	99.0			1.02
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	97.6	99.3			1.73
	O-Phosphate-P	101	97.9	99.0			0.857
SM 2120 B	Color (true)					5.13	
SM 2320 B-97	Total Alkalinity	103				0.154	
	Total Alkalinity	103				1.14	
SM 2540 C-97	TDS					9.30	
	TDS					3.60	
SM 2540 D-97	TSS					8.89	
SM 4500 F-C-97	Fluoride	98.5	99.9	99.9			0.0
	Fluoride	98.9	98.1	98.7			0.464
SM 5310 B-00	Organic Carbon	96.1	103				0.373
	Organic Carbon	103	94.9	97.1			2.00
	Organic Carbon	98.8	98.5	100			1.53

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1804927, 1804928, 1804933
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1804927, 1804928
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1804927, 1804928
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1804929, 1804930, 1804934
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1804929, 1804930, 1804934
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1804929, 1804930, 1804934
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1804931, 1804932, 1804935
SM 2120 B / E31780	True Color measured at 450 nm	1804927, 1804928
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1804927, 1804928, 1804933
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1804927, 1804928
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1804927, 1804928, 1804933
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1804927, 1804928, 1804933
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1804929, 1804930, 1804934

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	06/03/2016	06/08/2016	Sofia Elnemr	06/03/2016 16:06	Rochelle Y Jackson	1804927, 1804928, 1804933
EPA 300.0 Rev. 2.1	06/03/2016			06/09/2016	Julia Storbeck	1804927, 1804928
EPA 350.1 Rev. 2.0	06/03/2016			06/09/2016	Diana M. Turner	1804929, 1804930, 1804934
EPA 351.2 Rev. 2.0	06/03/2016			06/09/2016	Christopher Armour	1804929, 1804930, 1804934
EPA 353.2 Rev. 2.0	06/03/2016			06/07/2016	Beverly Y. Sanders	1804929
	06/03/2016			06/08/2016	Beverly Y. Sanders	1804930
	06/03/2016			06/09/2016	Beverly Y. Sanders	1804934
EPA 365.1 Rev. 2.0 dissolved	06/03/2016			06/03/2016 14:56	Julia Storbeck	1804932
	06/03/2016			06/03/2016 15:21	Julia Storbeck	1804931
	06/03/2016			06/03/2016 15:23	Julia Storbeck	1804935
SM 2120 B	06/03/2016			06/03/2016 16:41	Chrisoulla Rakowski	1804927, 1804928
SM 2320 B-97	06/03/2016			06/09/2016	Dale L. Simmons	1804927, 1804928, 1804933
SM 2540 C-97	06/03/2016			06/08/2016	Yijie Li	1804927, 1804928
SM 2540 D-97	06/03/2016			06/08/2016	Yijie Li	1804927, 1804928, 1804933
SM 4500 F-C-97	06/03/2016			06/09/2016	Dale L. Simmons	1804927, 1804928, 1804933
SM 5310 B-00	06/03/2016			06/14/2016	Diana M. Turner	1804929
	06/03/2016			06/15/2016	Diana M. Turner	1804934
	06/03/2016			06/17/2016	Diana M. Turner	1804930