Chemical Analysis Report

NW-DIST-2018-07-27-01

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

Event Description: **ENR B**
Request ID: **RQ-2018-06-18-18**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208A
Pensacola, FL 32502-5794
Attn: Michael King

For additional information please contact
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Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 14-AUG-2018 14:28

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: POQUITO BAYOU MIDDLE **Collection Date/Time: 07/26/2018 11:10**

Field ID: G3NW0086 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2011609	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P349327	
	SM 2320 B-97	Total Alkalinity	87	A	mg CaCO3/L	P349485	
	SM 2540 D-97	TSS	3	U	mg/L	P349374	
	SM 4500 F-C-97	Fluoride	0.83		mg F/L	P349489	
2011612	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P349521	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22	I	mg N/L	P349447	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P349444	
	EPA 365.1 Rev. 2.0	Total-P	0.009	IJ	mg P/L	P349516	MS
	SM 5310 B-00	Organic Carbon	2.9		mg C/L	P349461	
2011615	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P349306	

Ref. Method and Comment:
EPA 365.1 Rev. 2.0: Total-P: Refer to the narrative for an explanation of QC Codes.

Sample Location: Garnier Bayou at Paradise Point **Collection Date/Time: 07/26/2018 11:20**

Field ID: G3NW0087 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2011618	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P349327	
	SM 2320 B-97	Total Alkalinity	80		mg CaCO3/L	P349485	
	SM 2540 D-97	TSS	3	U	mg/L	P349374	
	SM 4500 F-C-97	Fluoride	0.73		mg F/L	P349489	
2011620	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P349688	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.23	I	mg N/L	P349447	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.048		mg N/L	P349445	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P349516	MS
	SM 5310 B-00	Organic Carbon	3.0		mg C/L	P349461	
2011622	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P349306	

Sample Location: Cinco Bayou West of Cinco Bridge **Collection Date/Time: 07/26/2018 11:40**

Field ID: G3NW0088 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2011610	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P349327	
	SM 2320 B-97	Total Alkalinity	86		mg CaCO3/L	P349485	
	SM 2540 D-97	TSS	4	I	mg/L	P349374	
	SM 4500 F-C-97	Fluoride	0.78		mg F/L	P349489	
2011613	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P349688	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P349447	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P349444	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P349516	MS
	SM 5310 B-00	Organic Carbon	3.3		mg C/L	P349461	
2011616	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P349306	

Sample Location: LAKE EARL CENTER **Collection Date/Time: 07/26/2018 12:00**

Field ID: G3NW0090 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2011619	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P349327	
	SM 2320 B-97	Total Alkalinity	89		mg CaCO3/L	P349485	
	SM 2540 D-97	TSS	3	U	mg/L	P349374	
	SM 4500 F-C-97	Fluoride	0.83		mg F/L	P349489	
2011621	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P349688	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25	I	mg N/L	P349447	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P349445	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P349516	MS
	SM 5310 B-00	Organic Carbon	3.5		mg C/L	P349461	
2011623	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P349306	

Sample Location: Choctawhatchee Bay Lower Section C Background (also 320100B3)

Collection Date/Time: 07/26/2018 12:15

Field ID: G3NW0089

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2011611	EPA 180.1 Rev. 2.0	Turbidity	0.50		NTU	P349327	
	SM 2320 B-97	Total Alkalinity	80		mg CaCO3/L	P349485	
	SM 2540 D-97	TSS	3	U	mg/L	P349374	
	SM 4500 F-C-97	Fluoride	0.71		mg F/L	P349489	
2011614	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P349688	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20	I	mg N/L	P349447	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P349445	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P349516	MS
	SM 5310 B-00	Organic Carbon	3.4		mg C/L	P349461	
2011617	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P349306	

Sample Location: Destin Harbor across from AJ's Restaurant **Collection Date/Time: 07/26/2018 12:50**

Field ID: G3NW0127 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2011624	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P349327	
	SM 2320 B-97	Total Alkalinity	94		mg CaCO3/L	P349485	
	SM 2540 D-97	TSS	6	I	mg/L	P349372	
	SM 4500 F-C-97	Fluoride	0.93		mg F/L	P349489	
2011625	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	IY	mg N/L	P349688	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	IY	mg N/L	P349447	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	UY	mg N/L	P349445	
	EPA 365.1 Rev. 2.0	Total-P	0.022	Y	mg P/L	P349516	MS
	SM 5310 B-00	Organic Carbon	3.4	Y	mg C/L	P349461	
2011626	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P349306	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.
EPA 351.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.
EPA 353.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.
EPA 365.1 Rev. 2.0: Total-P: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.
SM 5310 B-00: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

Non-Conformance Report

NCR ID: 7158

Event(s)	Job(s)	Sample(s)	Test(s)
NW-DIST-2018-07-27-01	TLH-2018-07-27-59	2011625	

NCR Type: SHIPPING/RECEIVING **NCR Category: Preservation Not Intact**

Observation: Sample not preserved to pH < 2.

Resolution: Sample preserved in the laboratory with sulfuric acid.
H2SO4 Lot# SA8085170 | Expiration Date: 03/26/2019

Authorized by/Date: Joshua Ayres 8/2/2018

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: P349327

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349521

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349688

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349447

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349444

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349445

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349516

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349306

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

Reference Method: SM 2320 B-97
Batch ID: P349485

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

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P349372

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P349374

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P349489

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P349461

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: P349521

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349688

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349447

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: P349444

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: P349445

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349516

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349306

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

Reference Method: SM 2320 B-97
Batch ID: P349485

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P349489

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P349461

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.9		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010508	Ammonia-N	103	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349688

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011613	Ammonia-N	105	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349447

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011612	Kjeldahl Nitrogen	105	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011159	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349445

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011614	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011612	Total-P	90.2	87.3	P/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349306

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011615	O-Phosphate-P	95.2	97.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P349489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011609	Fluoride	93.5	94.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P349461

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011576	Organic Carbon	94.0	92.8	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P349327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011578	Turbidity	2.37	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010508	Ammonia-N	0.595	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011613	Ammonia-N	3.79	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349447

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011612	Kjeldahl Nitrogen	3.87	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011159	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349445

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011614	NO2NO3-N	0.484	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011612	Total-P	3.21	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011615	O-Phosphate-P	2.59	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2320 B-97
Batch ID: P349485

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011609	Total Alkalinity	1.34	Sample	P	0 - 1.6

Reference Method: SM 2540 D-97
Batch ID: P349374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010505	TSS	3.08	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P349489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011609	Fluoride	0.959	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P349461

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011576	Organic Carbon	0.911	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: A85530
Included Lab Sample IDs: 2011615, 2011616, 2011617, 2011622, 2011623, 2011626

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.2	97.0	P/P	90 - 110
O-Phosphate-P	99.0	98.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A85537
Included Lab Sample IDs: 2011609, 2011610, 2011611, 2011618, 2011619, 2011624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A85582
Included Lab Sample IDs: 2011612, 2011613, 2011614, 2011620, 2011621, 2011625

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A85590
Included Lab Sample IDs: 2011612, 2011613, 2011614, 2011620, 2011621, 2011625

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	99.0	P/P	90 - 110
Organic Carbon	98.8	97.6	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A85607
Included Lab Sample IDs: 2011609, 2011610, 2011611, 2011618, 2011619, 2011624

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

Reference Method: SM 4500 F-C-97
Run ID: A85607
Included Lab Sample IDs: 2011609, 2011610, 2011611, 2011618, 2011619, 2011624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	99.5	P/P	90 - 110
Fluoride	99.5	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A85621
Included Lab Sample IDs: 2011612

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A85636
Included Lab Sample IDs: 2011612, 2011613, 2011614, 2011620, 2011621, 2011625

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	102	P/P	90 - 110
Total-P	102	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A85647
Included Lab Sample IDs: 2011612, 2011613, 2011614, 2011620, 2011621, 2011625

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.7	99.6	P/P	90 - 110
Kjeldahl Nitrogen	99.4	97.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A85703
Included Lab Sample IDs: 2011613, 2011614, 2011620, 2011621, 2011625

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	102	P/P	90 - 110
Ammonia-N	102	100	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		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					2.37	
EPA 350.1 Rev. 2.0	Ammonia-N	102	103	102			0.595
	Ammonia-N	102	105	101			3.79
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	105	100			3.87
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	102			0.0
	NO2NO3-N	102	101	101			0.484
EPA 365.1 Rev. 2.0	Total-P	96.2	90.2	87.3			3.21
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	95.2	97.7			2.59
SM 2320 B-97	Total Alkalinity	103				1.34	
SM 2540 D-97	TSS					3.08	
SM 4500 F-C-97	Fluoride	97.6	93.5	94.8			0.959
SM 5310 B-00	Organic Carbon	93.9	94.0	92.8			0.911

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2011609, 2011610, 2011611, 2011618, 2011619, 2011624
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2011612, 2011613, 2011614, 2011620, 2011621, 2011625
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2011612, 2011613, 2011614, 2011620, 2011621, 2011625
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2011612, 2011613, 2011614, 2011620, 2011621, 2011625
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2011612, 2011613, 2011614, 2011620, 2011621, 2011625
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2011615, 2011616, 2011617, 2011622, 2011623, 2011626
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2011609, 2011610, 2011611, 2011618, 2011619, 2011624
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2011609, 2011610, 2011611, 2011618, 2011619, 2011624
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2011609, 2011610, 2011611, 2011618, 2011619, 2011624
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2011612, 2011613, 2011614, 2011620, 2011621, 2011625

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	07/27/2018			07/27/2018 16:39	Tanya Welborn	2011609, 2011610, 2011611, 2011618, 2011619, 2011624
EPA 350.1 Rev. 2.0	07/27/2018			08/01/2018 11:33	Ping Hua	2011612
	07/27/2018			08/06/2018 15:39	Julia Storbeck	2011613
	07/27/2018			08/06/2018 15:49	Julia Storbeck	2011614
	07/27/2018			08/06/2018 15:51	Julia Storbeck	2011620
	07/27/2018			08/06/2018 15:52	Julia Storbeck	2011621
	07/27/2018			08/06/2018 15:54	Julia Storbeck	2011625
EPA 351.2 Rev. 2.0	07/27/2018	07/31/2018 11:15	Adrian Shelby	08/02/2018 13:40	Joseph Suarez	2011612
	07/27/2018	07/31/2018 11:15	Adrian Shelby	08/02/2018 13:44	Joseph Suarez	2011613
	07/27/2018	07/31/2018 11:15	Adrian Shelby	08/02/2018 13:49	Joseph Suarez	2011614
	07/27/2018	07/31/2018 11:15	Adrian Shelby	08/02/2018 13:51	Joseph Suarez	2011620
	07/27/2018	07/31/2018 11:15	Adrian Shelby	08/02/2018 13:52	Joseph Suarez	2011621
	07/27/2018	07/31/2018 11:15	Adrian Shelby	08/02/2018 13:54	Joseph Suarez	2011625
EPA 353.2 Rev. 2.0	07/27/2018			07/31/2018 11:50	Lauren Bottorf	2011612
	07/27/2018			07/31/2018 11:52	Lauren Bottorf	2011613
	07/27/2018			07/31/2018 11:59	Lauren Bottorf	2011614
	07/27/2018			07/31/2018 12:05	Lauren Bottorf	2011620
	07/27/2018			07/31/2018 12:06	Lauren Bottorf	2011621
	07/27/2018			07/31/2018 12:07	Lauren Bottorf	2011625
EPA 365.1 Rev. 2.0	07/27/2018	08/01/2018 12:35	Sima Feizi	08/02/2018 12:15	Beverly Y. Sanders	2011612
	07/27/2018	08/01/2018 12:35	Sima Feizi	08/02/2018 12:16	Beverly Y. Sanders	2011613
	07/27/2018	08/01/2018 12:35	Sima Feizi	08/02/2018 12:24	Beverly Y. Sanders	2011614
	07/27/2018	08/01/2018 12:35	Sima Feizi	08/02/2018 12:25	Beverly Y. Sanders	2011620
	07/27/2018	08/01/2018 12:35	Sima Feizi	08/02/2018 12:26	Beverly Y. Sanders	2011621
	07/27/2018	08/01/2018 12:35	Sima Feizi	08/02/2018 12:27	Beverly Y. Sanders	2011625
EPA 365.1 Rev. 2.0 dissolved	07/27/2018			07/27/2018 13:25	Julia Storbeck	2011615
	07/27/2018			07/27/2018 13:57	Julia Storbeck	2011616
	07/27/2018			07/27/2018 13:58	Julia Storbeck	2011617
	07/27/2018			07/27/2018 13:59	Julia Storbeck	2011622
	07/27/2018			07/27/2018 14:00	Julia Storbeck	2011623
	07/27/2018			07/27/2018 14:01	Julia Storbeck	2011626
SM 2320 B-97	07/27/2018			08/01/2018 06:49	Dale L. Simmons	2011609
	07/27/2018			08/01/2018 07:30	Dale L. Simmons	2011610
	07/27/2018			08/01/2018 07:39	Dale L. Simmons	2011611
	07/27/2018			08/01/2018 08:41	Dale L. Simmons	2011618
	07/27/2018			08/01/2018 08:51	Dale L. Simmons	2011619
	07/27/2018			08/01/2018 09:01	Dale L. Simmons	2011624
SM 2540 D-97	07/27/2018			07/28/2018 23:02	Yijie Li	2011609, 2011610, 2011611, 2011618, 2011619, 2011624

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-97	07/27/2018			08/01/2018 05:15	Dale L. Simmons	2011609
	07/27/2018			08/01/2018 06:17	Dale L. Simmons	2011610
	07/27/2018			08/01/2018 06:21	Dale L. Simmons	2011611
	07/27/2018			08/01/2018 06:25	Dale L. Simmons	2011618
	07/27/2018			08/01/2018 06:28	Dale L. Simmons	2011619
	07/27/2018			08/01/2018 06:32	Dale L. Simmons	2011624
SM 5310 B-00	07/27/2018			07/31/2018 06:26	Megan Treadwell	2011612
	07/27/2018			07/31/2018 06:41	Megan Treadwell	2011613
	07/27/2018			07/31/2018 07:07	Megan Treadwell	2011614
	07/27/2018			07/31/2018 07:48	Megan Treadwell	2011620
	07/27/2018			07/31/2018 08:01	Megan Treadwell	2011621
	07/27/2018			07/31/2018 08:16	Megan Treadwell	2011625