

Chemical Analysis Report

NE-DIST-2016-06-16-01

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

Event Description: **Alachua Lakes**
Request ID: **RQ-2016-06-13-08**
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.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 12-JUL-2016 15:25

A handwritten signature in black ink, appearing to read 'Timothy W. Fitzpatrick', with a stylized flourish at the end.

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: LAKE WAUBERG-CENTER

Collection Date/Time: 06/15/2016 11:15

Field ID: LAKE WAUBERG-CENTER

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1809000	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P306454	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P306879	
		Sulfate	0.20	U	mg SO4/L	P306881	
	SM 2120 B	Color (true)	28		PCU	P306398	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P306822	
	SM 2540 C-97	TDS	59		mg/L	P307025	
	SM 2540 D-97	TSS	17		mg/L	P306965	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P306902	
1809003	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P306689	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P306420	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P306587	
	EPA 365.1 Rev. 2.0	Total-P	0.081		mg P/L	P306545	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P307065	
1809006	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P306338	

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: MOON LAKE

Collection Date/Time: 06/15/2016 12:35

Field ID: MOON LAKE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1809001	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P306454	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P306879	
		Sulfate	14		mg SO4/L	P306881	
	SM 2120 B	Color (true)	38		PCU	P306399	
	SM 2320 B-97	Total Alkalinity	26	A	mg CaCO3/L	P306822	
	SM 2540 C-97	TDS	75		mg/L	P307025	
	SM 2540 D-97	TSS	2	I	mg/L	P306965	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P307272	MS
1809004	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P306689	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P306420	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P306834	
	EPA 365.1 Rev. 2.0	Total-P	0.29		mg P/L	P306545	
	SM 5310 B-00	Organic Carbon	8.2		mg C/L	P307065	
1809007	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.24		mg P/L	P306338	

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: HAMMOCK LAKE

Collection Date/Time: 06/15/2016 13:30

Field ID: HAMMOCK LAKE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1809002	EPA 180.1 Rev. 2.0	Turbidity	14		NTU	P306454	
	EPA 300.0 Rev. 2.1	Chloride	36		mg Cl/L	P306879	
		Sulfate	6.1		mg SO4/L	P306881	

Field ID: HAMMOCK LAKE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1809002	SM 2120 B	Color (true)	51	A	PCU	P306399	
	SM 2320 B-97	Total Alkalinity	76		mg CaCO3/L	P306822	
	SM 2540 C-97	TDS	161	A	mg/L	P307026	
	SM 2540 D-97	TSS	17	A	mg/L	P306983	
	SM 4500 F-C-97	Fluoride	0.28		mg F/L	P306902	
1809005	EPA 350.1 Rev. 2.0	Ammonia-N	0.14		mg N/L	P306689	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P306420	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.038		mg N/L	P306834	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P306545	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P306808	
1809008	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P306338	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P306454

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P306879

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P306881

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P306689

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P306420

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P306587

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306834

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306545

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P306338

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

Reference Method: SM 2120 B
Batch ID: P306398

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P306399

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P306822

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

Reference Method: SM 2540 C-97
Batch ID: P307025

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P307026

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P306965

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P306983

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P306902

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P307272

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P306808

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

Reference Method: SM 5310 B-00
Batch ID: P307065

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: P306879

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306881

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P306689

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	93.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306420

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
-----------	---------	---------	-----------	----------------

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306420

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306587

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306834

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: P306545

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	92.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P306338

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

Reference Method: SM 2320 B-97
Batch ID: P306822

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P306902

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

Reference Method: SM 4500 F-C-97
Batch ID: P307272

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P306808

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P307065

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306879

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1808950	Chloride	103		P	90 - 110
1809000	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306881

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1808950	Sulfate	102		P	90 - 110
1809000	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P306689

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1808951	Ammonia-N	95.3	93.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306420

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1808977	Kjeldahl Nitrogen	93.7	95.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306587

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1808821	NO2NO3-N	96.5	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306834

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1808753	NO2NO3-N	99.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306545

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1808960	Total-P	97.8	97.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P306338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1808961	O-Phosphate-P	95.7	98.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P306902

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1809001	Fluoride	102	103	P/P	91 - 105

Reference Method: SM 4500 F-C-97
 Batch ID: P307272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1809401	Fluoride	105	106	F/F	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P306808

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1809049	Organic Carbon	103		P	85 - 115

Reference Method: SM 5310 B-00
 Batch ID: P307065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1809003	Organic Carbon	96.6	103	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P306454

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1808964	Turbidity	3.02	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P306879

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1808950	Chloride	0.0794	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P306881

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1808950	Sulfate	2.57	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P306689

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1808951	Ammonia-N	1.21	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306420

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1808977	Kjeldahl Nitrogen	1.24	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1808821	NO2NO3-N	1.35	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1808753	NO2NO3-N	0.196	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306545

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1808960	Total-P	0.683	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P306338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1808961	O-Phosphate-P	2.02	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P306398

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1808964	Color (true)	5.51	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P306399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1809002	Color (true)	3.73	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P306822

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1809001	Total Alkalinity	0.130	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P307025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1808959	TDS	0.539	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P307026

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1809002	TDS	1.24	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P306983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1809002	TSS	0.0	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P306902

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1809001	Fluoride	0.473	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P307272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1809401	Fluoride	0.484	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P306808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1809049	Organic Carbon	0.442	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P307065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1809003	Organic Carbon	3.51	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: A70081
Included Lab Sample IDs: 1809006, 1809007, 1809008

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.0	96.8	P/P	90 - 110
O-Phosphate-P	97.7	97.0	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A70102
Included Lab Sample IDs: 1809000, 1809001, 1809002

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115
Color (true)	101	100	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A70118
Included Lab Sample IDs: 1809000, 1809001, 1809002

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A70150
Included Lab Sample IDs: 1809003

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	96.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A70155
Included Lab Sample IDs: 1809003, 1809004, 1809005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.1	98.0	P/P	90 - 110
Kjeldahl Nitrogen	99.5	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A70159
Included Lab Sample IDs: 1809003

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70167

Included Lab Sample IDs: 1809004, 1809005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A70173

Included Lab Sample IDs: 1809003, 1809004, 1809005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.0	98.1	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A70211

Included Lab Sample IDs: 1809005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	104	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A70213

Included Lab Sample IDs: 1809004, 1809005

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

Reference Method: SM 2320 B-97

Run ID: A70215

Included Lab Sample IDs: 1809000, 1809001, 1809002

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	105	P/P	90 - 110
Total Alkalinity	104	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A70215

Included Lab Sample IDs: 1809000, 1809002

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A70233

Included Lab Sample IDs: 1809000, 1809001, 1809002

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.9	100	P/P	90 - 110
Chloride	99.0	100	P/P	90 - 110
Sulfate	95.4	99.8	P/P	90 - 110
Sulfate	96.4	99.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A70300

Included Lab Sample IDs: 1809003, 1809004

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	104	105	P/P	90 - 110
Organic Carbon	105	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A70370

Included Lab Sample IDs: 1809001

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	99.5	P/P	90 - 110

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				3.02	
EPA 300.0 Rev. 2.1	Chloride	102	103 102		0.0794	
	Sulfate	101	102 103		2.57	
EPA 350.1 Rev. 2.0	Ammonia-N	93.1	95.3 93.8			1.21
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.1	93.7 95.7			1.24
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	96.5 98.0			1.35
	NO2NO3-N	102	99.2			0.196
EPA 365.1 Rev. 2.0	Total-P	92.9	97.8 97.1			0.683
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	95.7 98.2			2.02
SM 2120 B	Color (true)				5.51	
	Color (true)				3.73	
SM 2320 B-97	Total Alkalinity	102			0.130	
SM 2540 C-97	TDS				0.539	
	TDS				1.24	
SM 2540 D-97	TSS				0.0	
SM 4500 F-C-97	Fluoride	103	102 103			0.473
	Fluoride	97.7	105 106			0.484
SM 5310 B-00	Organic Carbon	97.8	103			0.442
	Organic Carbon	101	96.6 103			3.51

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1809000, 1809001, 1809002
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1809000, 1809001, 1809002
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1809000, 1809001, 1809002
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1809003, 1809004, 1809005

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1809003, 1809004, 1809005
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1809003, 1809004, 1809005
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1809003, 1809004, 1809005
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1809006, 1809007, 1809008
SM 2120 B / E31780	True Color measured at 450 nm	1809000, 1809001, 1809002
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1809000, 1809001, 1809002
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1809000, 1809001, 1809002
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1809000, 1809001, 1809002
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1809000, 1809001, 1809002
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1809003, 1809004, 1809005

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	06/16/2016			06/16/2016 16:07	Rochelle Y Jackson	1809000, 1809001, 1809002
EPA 300.0 Rev. 2.1	06/16/2016			06/24/2016	Julia Storbeck	1809000
	06/16/2016			06/25/2016	Julia Storbeck	1809001, 1809002
EPA 350.1 Rev. 2.0	06/16/2016			06/22/2016	Diana M. Turner	1809003, 1809004, 1809005
EPA 351.2 Rev. 2.0	06/16/2016	06/20/2016	Sofia Elnemr	06/21/2016	Christopher Armour	1809003, 1809004, 1809005
EPA 353.2 Rev. 2.0	06/16/2016			06/21/2016	Beverly Y. Sanders	1809003
	06/16/2016			06/24/2016	Virginia P. Brown	1809004, 1809005
EPA 365.1 Rev. 2.0	06/16/2016	06/21/2016	Vijayalakshmi Reddy	06/22/2016	Lipi Saha	1809003, 1809004, 1809005
EPA 365.1 Rev. 2.0 dissolved	06/16/2016			06/16/2016 12:56	Virginia P. Brown	1809006
	06/16/2016			06/16/2016 13:01	Virginia P. Brown	1809007
	06/16/2016			06/16/2016 13:02	Virginia P. Brown	1809008
SM 2120 B	06/16/2016			06/16/2016 15:59	Chrisoulla Rakowski	1809000
	06/16/2016			06/16/2016 16:02	Chrisoulla Rakowski	1809001
	06/16/2016			06/16/2016 16:03	Chrisoulla Rakowski	1809002
SM 2320 B-97	06/16/2016			06/23/2016	Rochelle Y Jackson	1809000, 1809001, 1809002
SM 2540 C-97	06/16/2016			06/20/2016	Sima Feizi	1809000, 1809001, 1809002
SM 2540 D-97	06/16/2016			06/20/2016	Sima Feizi	1809000, 1809001, 1809002
SM 4500 F-C-97	06/16/2016			06/23/2016	Rochelle Y Jackson	1809000, 1809002
	06/16/2016			07/01/2016	Dale L. Simmons	1809001
SM 5310 B-00	06/16/2016			06/23/2016	Diana M. Turner	1809005
	06/16/2016			06/28/2016	Diana M. Turner	1809003, 1809004