

Chemical Analysis Report

WQAP-2016-06-01-02

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

Event Description: **East River, St. Marks River, Moriah Creek and Wakulla River**
Request ID: **RQ-2016-05-30-45**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
MS #3560
Tallahassee, FL 32399-2400
Attn: Ben Ralys

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: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 23-JUN-2016 08:36



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: St. Marks River @ Channel Marker 60

Collection Date/Time: 06/01/2016 10:45

Field ID: G1WA0055

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803780	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P305523	
	SM 2320 B-97	Total Alkalinity	138		mg CaCO3/L	P305935	
	SM 2540 D-97	TSS	2	I	mg/L	P305842	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P306034	
1803784	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P305872	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29		mg N/L	P305672	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P305642	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P305925	
	SM 5310 B-00	Organic Carbon	2.1		mg C/L	P306322	
1803788	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P305387	

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: St. Marks River @ Channel Marker 22

Collection Date/Time: 06/01/2016 11:11

Field ID: G1WA0008

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803781	EPA 180.1 Rev. 2.0	Turbidity	1.9	A	NTU	P305523	
	SM 2320 B-97	Total Alkalinity	124		mg CaCO3/L	P305935	
	SM 2540 D-97	TSS	4	I	mg/L	P305844	
	SM 4500 F-C-97	Fluoride	0.73		mg F/L	P305938	
1803785	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P305866	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P305671	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P305642	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P305924	
	SM 5310 B-00	Organic Carbon	3.5		mg C/L	P306147	
1803789	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P305388	

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: East River Downstream of Boggy Bayou

Collection Date/Time: 06/01/2016 12:00

Field ID: G1WA0056

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803782	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P305523	
	SM 2320 B-97	Total Alkalinity	123		mg CaCO3/L	P305935	
	SM 2540 D-97	TSS	4	I	mg/L	P305844	
	SM 4500 F-C-97	Fluoride	0.81		mg F/L	P305938	
1803786	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P305867	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P305671	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P305644	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P305924	
	SM 5310 B-00	Organic Carbon	3.9		mg C/L	P306147	
1803790	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P305388	

Field ID: G1WA0056

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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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: Mouth Of East River

Collection Date/Time: 06/01/2016 11:43

Field ID: G1WA0011

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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1803783	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P305523	
	SM 2320 B-97	Total Alkalinity	119		mg CaCO3/L	P305935	
	SM 2540 D-97	TSS	6	I	mg/L	P305844	
	SM 4500 F-C-97	Fluoride	0.94		mg F/L	P305938	
1803787	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P305867	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P305671	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P305644	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P305924	
	SM 5310 B-00	Organic Carbon	3.3		mg C/L	P306147	
1803791	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P305388	

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: Moriah Creek 100 Meters Upstream of Newport Rd.

Collection Date/Time: 06/01/2016 14:45

Field ID: G1WA0057

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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1803792	EPA 180.1 Rev. 2.0	Turbidity	0.65		NTU	P305523	
	EPA 300.0 Rev. 2.1	Chloride	4.5		mg Cl/L	P305623	
		Sulfate	2.7		mg SO4/L	P305626	
	SM 2120 B	Color (true)	39	A	PCU	P305479	
	SM 2320 B-97	Total Alkalinity	231		mg CaCO3/L	P305781	
	SM 2540 C-97	TDS	275		mg/L	P306105	
	SM 2540 D-97	TSS	4	I	mg/L	P305841	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P305784	
1803795	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P305872	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P305672	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P305536	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P305926	
	SM 5310 B-00	Organic Carbon	6.8		mg C/L	P306132	
1803798	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P305387	

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: Moriah Creek 100 Meters Upstream of Newport Rd.

Collection Date/Time: 06/01/2016 14:55

Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803801	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P305523	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P305623	
		Sulfate	0.20	U	mg SO4/L	P305626	
	SM 2120 B	Color (true)	2.5	U	PCU	P305479	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P305781	
	SM 2540 C-97	TDS	15	U	mg/L	P306106	
	SM 2540 D-97	TSS	2	U	mg/L	P305842	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P305784	
1803802	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P305873	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P305672	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P305536	
	EPA 365.1 Rev. 2.0	Total-P	0.002	I	mg P/L	P306220	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P306132	
1803803	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P305387	

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: Moriah Creek 100 Meters Upstream of Newport Rd. **Collection Date/Time: 06/01/2016 14:45**

Field ID: Duplicate

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803804	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P305523	
	EPA 300.0 Rev. 2.1	Chloride	4.4		mg Cl/L	P305623	
		Sulfate	2.4		mg SO4/L	P305626	
	SM 2120 B	Color (true)	40		PCU	P305479	
	SM 2320 B-97	Total Alkalinity	229		mg CaCO3/L	P305781	
	SM 2540 C-97	TDS	260		mg/L	P306106	
	SM 2540 D-97	TSS	5	I	mg/L	P305842	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P305784	
1803805	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P305873	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P305672	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P305537	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P305926	
	SM 5310 B-00	Organic Carbon	6.8		mg C/L	P306132	
1803806	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P305387	

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: Wakulla River Below US 98

Collection Date/Time: 06/01/2016 10:10

Field ID: G1WA0028

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803793	EPA 180.1 Rev. 2.0	Turbidity	0.65		NTU	P305523	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P305623	
		Sulfate	12		mg SO4/L	P305626	

Field ID: G1WA0028

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803793	SM 2120 B	Color (true)	4.9	I	PCU	P305479	
	SM 2320 B-97	Total Alkalinity	145		mg CaCO3/L	P305781	
	SM 2540 C-97	TDS	216		mg/L	P306105	
	SM 2540 D-97	TSS	3	I	mg/L	P305841	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P305784	
1803796	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P305872	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.11	I	mg N/L	P305672	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P305536	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P305926	
	SM 5310 B-00	Organic Carbon	0.88	I	mg C/L	P306132	
1803799	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P305387	

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: Moriah Creek @ St. Marks River

Collection Date/Time: 06/01/2016 13:10

Field ID: G1WA0037

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803794	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P305523	
	EPA 300.0 Rev. 2.1	Chloride	10		mg Cl/L	P305623	
		Sulfate	9.4		mg SO4/L	P305626	
	SM 2120 B	Color (true)	18		PCU	P305479	
	SM 2320 B-97	Total Alkalinity	127		mg CaCO3/L	P305781	
	SM 2540 C-97	TDS	171		mg/L	P306105	
	SM 2540 D-97	TSS	3	I	mg/L	P305841	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P305784	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P305872	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P305672	
1803797	EPA 353.2 Rev. 2.0	NO2NO3-N	0.047		mg N/L	P305536	
	EPA 365.1 Rev. 2.0	Total-P	0.047		mg P/L	P305926	
	SM 5310 B-00	Organic Carbon	2.5		mg C/L	P306132	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.033		mg P/L	P305387	
1803800							

Ref. Method and Comment:

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P305523

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P305623

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305623

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305626

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305866

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305867

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305872

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305873

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305671

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305672

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305536

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: P305537

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305642

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305644

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305924

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305925

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305926

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306220

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305387

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305388

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P305479

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P305781

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

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

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97
Batch ID: P306105

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P306106

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P305841

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P305842

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P305844

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P305784

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

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

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P306034

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P306132

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

Reference Method: SM 5310 B-00
Batch ID: P306147

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

Reference Method: SM 5310 B-00
Batch ID: P306322

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: P305623

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305626

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305866

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: P305867

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: P305867

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: P305872

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305873

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: P305671

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305536

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: P305537

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: P305642

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: P305644

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305924

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305925

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305926

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306220

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305387

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305388

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

Reference Method: SM 2320 B-97
Batch ID: P305781

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

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: P305784

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.0		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

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 4500 F-C-97
Batch ID: P306034

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

Reference Method: SM 5310 B-00
Batch ID: P306132

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	102		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P306147

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

Reference Method: SM 5310 B-00
Batch ID: P306322

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	105		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305623

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803621	Chloride	100		P	90 - 110
1803794	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305626

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803621	Sulfate	99.9		P	90 - 110
1803794	Sulfate	97.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305866

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803609	Ammonia-N	103	105	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305867

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803786	Ammonia-N	103	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305872

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803699	Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305873

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803805	Ammonia-N	102	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305671

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803663	Kjeldahl Nitrogen	98.1	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803795	Kjeldahl Nitrogen	97.0	94.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803795	NO2NO3-N	100	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305537

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803805	NO2NO3-N	101	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803659	NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803786	NO2NO3-N	100	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305924

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803664	Total-P	99.7	97.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305925

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803694	Total-P	109	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803795	Total-P	104	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306220

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1806914	Total-P	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305387

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803706	O-Phosphate-P	97.8	99.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803789	O-Phosphate-P	98.8	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P305784

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803691	Fluoride	99.4	99.4	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 4500 F-C-97
Batch ID: P306034

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1806796	Fluoride	99.3	101	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P306132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803698	Organic Carbon	102	101	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P306147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803658	Organic Carbon	96.9	101	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P306322

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804803	Organic Carbon	111	107	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P305523

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803781	Turbidity	1.56	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803621	Chloride	0.327	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803621	Sulfate	0.253	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305866

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803609	Ammonia-N	1.37	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305867

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803786	Ammonia-N	1.98	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803699	Ammonia-N	0.710	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305873

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803805	Ammonia-N	1.61	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305671

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803663	Kjeldahl Nitrogen	0.925	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803795	Kjeldahl Nitrogen	2.11	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803795	NO2NO3-N	2.19	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803805	NO2NO3-N	1.30	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803659	NO2NO3-N	1.00	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305644

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803786	NO2NO3-N	1.37	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305924

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803664	Total-P	1.74	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305925

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803694	Total-P	4.27	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803795	Total-P	4.25	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306220

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1806914	Total-P	0.650	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305387

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803706	O-Phosphate-P	1.64	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803789	O-Phosphate-P	4.55	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P305479

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803792	Color (true)	0.375	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P305781

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803691	Total Alkalinity	0.146	Sample	P	0 - 4.8

Quality Assurance Report Precision

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: P306105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803688	TDS	3.81	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P306106

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803826	TDS	4.57	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P305784

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803691	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 4500 F-C-97
Batch ID: P306034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1806796	Fluoride	1.43	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P306132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803698	Organic Carbon	1.62	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P306147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803658	Organic Carbon	2.90	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P306322

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804803	Organic Carbon	1.98	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: A69788
Included Lab Sample IDs: 1803788, 1803789, 1803790, 1803791, 1803798, 1803799, 1803800, 1803803, 1803806

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.6	P/P	90 - 110
O-Phosphate-P	100	99.1	P/P	90 - 110
O-Phosphate-P	99.1	100	P/P	90 - 110
O-Phosphate-P	99.1	99.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A69814
Included Lab Sample IDs: 1803792, 1803793, 1803794, 1803801, 1803804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Chloride	102	102	P/P	90 - 110
Chloride	102	102	P/P	90 - 110
Sulfate	100	96.4	P/P	90 - 110
Sulfate	96.0	100	P/P	90 - 110
Sulfate	99.6	96.0	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A69816
Included Lab Sample IDs: 1803792, 1803793, 1803794, 1803801, 1803804

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: A69828
Included Lab Sample IDs: 1803780, 1803781, 1803782, 1803783, 1803792, 1803793, 1803794, 1803801, 1803804

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A69831
Included Lab Sample IDs: 1803795, 1803796, 1803797, 1803802, 1803805

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69831

Included Lab Sample IDs: 1803795, 1803796, 1803797, 1803802, 1803805

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69857

Included Lab Sample IDs: 1803784, 1803785, 1803786, 1803787

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: A69907

Included Lab Sample IDs: 1803784, 1803785, 1803786, 1803787, 1803795, 1803796, 1803797, 1803802, 1803805

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	104	P/P	90 - 110
Kjeldahl Nitrogen	103	102	P/P	90 - 110
Kjeldahl Nitrogen	103	100	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A69913

Included Lab Sample IDs: 1803792, 1803793, 1803794, 1803801, 1803804

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

Reference Method: SM 4500 F-C-97

Run ID: A69913

Included Lab Sample IDs: 1803792, 1803793, 1803794, 1803801, 1803804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69935

Included Lab Sample IDs: 1803784, 1803785, 1803786, 1803787, 1803795, 1803796, 1803797, 1803802, 1803805

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

Reference Method: SM 2320 B-97

Run ID: A69953

Included Lab Sample IDs: 1803780, 1803781, 1803782, 1803783

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A69953

Included Lab Sample IDs: 1803781, 1803782, 1803783

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

Reference Method: SM 4500 F-C-97

Run ID: A69989

Included Lab Sample IDs: 1803780

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70005

Included Lab Sample IDs: 1803784, 1803785, 1803786, 1803787, 1803795, 1803796, 1803797, 1803805

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

Reference Method: SM 5310 B-00

Run ID: A70017

Included Lab Sample IDs: 1803785, 1803786, 1803787, 1803795, 1803796, 1803797, 1803802, 1803805

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.0	97.0	P/P	90 - 110
Organic Carbon	98.4	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A70079

Included Lab Sample IDs: 1803784

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70093

Included Lab Sample IDs: 1803802

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	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	MS
				LCS	SMP
EPA 180.1 Rev. 2.0	Turbidity			1.56	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 300.0 Rev. 2.1	Chloride	101	100	101	0.327	
	Sulfate	99.4	99.9	97.5	0.253	
EPA 350.1 Rev. 2.0	Ammonia-N	102	103	105		1.37
	Ammonia-N	102	103	105		1.98
	Ammonia-N	101	103	103		0.710
	Ammonia-N	102	102	105		1.61
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.6	98.1	99.3		0.925
	Kjeldahl Nitrogen	94.6	97.0	94.2		2.11
EPA 353.2 Rev. 2.0	NO2NO3-N	102	100	103		2.19
	NO2NO3-N	102	101	103		1.30
	NO2NO3-N	102	99.5	100		1.00
	NO2NO3-N	102	100	102		1.37
EPA 365.1 Rev. 2.0	Total-P	101	99.7	97.9		1.74
	Total-P	105	109	104		4.27
	Total-P	101	104	99.6		4.25
	Total-P	99.9	102	101		0.650
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.8	99.9		1.64
	O-Phosphate-P	99.8	98.8	103		4.55
SM 2120 B	Color (true)				0.375	
SM 2320 B-97	Total Alkalinity	102			0.146	
	Total Alkalinity	103			1.14	
SM 2540 C-97	TDS				3.81	
	TDS				4.57	
SM 4500 F-C-97	Fluoride	99.0	99.4	99.4		0.0
	Fluoride	98.9	98.1	98.7		0.464
	Fluoride	98.5	99.3	101		1.43
SM 5310 B-00	Organic Carbon	102	102	101		1.62
	Organic Carbon	101	96.9	101		2.90
	Organic Carbon	105	111	107		1.98

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1803780, 1803781, 1803782, 1803783, 1803792, 1803793, 1803794, 1803801, 1803804
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1803792, 1803793, 1803794, 1803801, 1803804
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1803792, 1803793, 1803794, 1803801, 1803804
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1803784, 1803785, 1803786, 1803787, 1803795, 1803796, 1803797, 1803802, 1803805
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1803784, 1803785, 1803786, 1803787, 1803795, 1803796, 1803797, 1803802, 1803805
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1803784, 1803785, 1803786, 1803787, 1803795, 1803796, 1803797, 1803802, 1803805
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1803784, 1803785, 1803786, 1803787, 1803795, 1803796, 1803797, 1803802, 1803805
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1803788, 1803789, 1803790, 1803791, 1803798, 1803799, 1803800, 1803803, 1803806

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 2120 B / E31780	True Color measured at 450 nm	1803792, 1803793, 1803794, 1803801, 1803804
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1803780, 1803781, 1803782, 1803783, 1803792, 1803793, 1803794, 1803801, 1803804
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1803792, 1803793, 1803794, 1803801, 1803804
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1803780, 1803781, 1803782, 1803783, 1803792, 1803793, 1803794, 1803801, 1803804
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1803780, 1803781, 1803782, 1803783, 1803792, 1803793, 1803794, 1803801, 1803804
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1803784, 1803785, 1803786, 1803787, 1803795, 1803796, 1803797, 1803802, 1803805

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	06/01/2016			06/02/2016 16:44	Blanca Fach	1803780, 1803781, 1803782, 1803783, 1803792, 1803793, 1803794, 1803801, 1803804
EPA 300.0 Rev. 2.1	06/01/2016			06/04/2016	Elisa J Lutz	1803792, 1803793, 1803794, 1803801, 1803804
EPA 350.1 Rev. 2.0	06/01/2016			06/08/2016	Diana M. Turner	1803784, 1803785, 1803786, 1803787, 1803795, 1803796, 1803797, 1803802, 1803805
EPA 351.2 Rev. 2.0	06/01/2016	06/07/2016	Sofia Elnemr	06/08/2016	Christopher Armour	1803784, 1803785, 1803786, 1803787, 1803795, 1803796, 1803797, 1803802, 1803805
EPA 353.2 Rev. 2.0	06/01/2016			06/03/2016	Peter D. Kaus	1803795, 1803796, 1803797, 1803802, 1803805
EPA 365.1 Rev. 2.0	06/01/2016	06/09/2016	Vijayalakshmi Reddy	06/06/2016	Peter D. Kaus	1803784, 1803785, 1803786, 1803787
	06/01/2016			06/13/2016	Virginia P. Brown	1803784, 1803785, 1803786, 1803787, 1803795, 1803796, 1803797, 1803805
EPA 365.1 Rev. 2.0 dissolved	06/01/2016	06/15/2016	Vijayalakshmi Reddy	06/16/2016	Lipi Saha	1803802
	06/01/2016			06/01/2016 17:13	Julia Storbeck	1803789
	06/01/2016			06/01/2016 17:18	Julia Storbeck	1803803
	06/01/2016			06/01/2016 17:26	Julia Storbeck	1803798
	06/01/2016			06/01/2016 17:27	Julia Storbeck	1803806
	06/01/2016			06/01/2016 17:56	Julia Storbeck	1803788
	06/01/2016			06/01/2016 17:57	Julia Storbeck	1803799
	06/01/2016			06/01/2016 18:02	Julia Storbeck	1803800
	06/01/2016			06/01/2016 18:06	Julia Storbeck	1803790
	06/01/2016			06/01/2016 18:07	Julia Storbeck	1803791
SM 2120 B	06/01/2016			06/02/2016 16:45	Chrisoulla Rakowski	1803792
	06/01/2016			06/02/2016 16:46	Chrisoulla Rakowski	1803793, 1803794
	06/01/2016			06/02/2016 16:47	Chrisoulla Rakowski	1803801
	06/01/2016			06/02/2016 16:48	Chrisoulla Rakowski	1803804
SM 2320 B-97	06/01/2016			06/08/2016	Dale L. Simmons	1803792, 1803793, 1803794, 1803801, 1803804
	06/01/2016			06/09/2016	Dale L. Simmons	1803780, 1803781, 1803782, 1803783
SM 2540 C-97	06/01/2016			06/03/2016	Yijie Li	1803792, 1803793, 1803794, 1803801, 1803804
SM 2540 D-97	06/01/2016			06/03/2016	Yijie Li	1803780, 1803781, 1803782, 1803783, 1803792, 1803793, 1803794, 1803801, 1803804
SM 4500 F-C-97	06/01/2016			06/08/2016	Dale L. Simmons	1803792, 1803793, 1803794, 1803801, 1803804
	06/01/2016			06/09/2016	Dale L. Simmons	1803781, 1803782, 1803783
	06/01/2016			06/11/2016	Dale L. Simmons	1803780

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	06/01/2016			06/14/2016	Diana M. Turner	1803785, 1803786, 1803787, 1803795, 1803796, 1803797, 1803802, 1803805
	06/01/2016			06/15/2016	Sofia Elnemr	1803784