

Chemical Analysis Report

WQAP-2016-07-20-04

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

Event Description: **Petty Gulf Lake and Lake Monkey Business**

Request ID: **RQ-2016-07-18-47**

Customer: **WQAP**

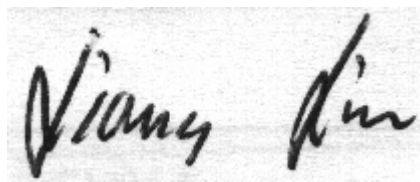
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
MS #3560
Tallahassee, FL 32399-2400
Attn: Benjamin 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: Liang Lin, Environmental Administrator

Date Certified: 09-AUG-2016 15:45

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

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 Monkey Business Middle

Collection Date/Time: 07/20/2016 09:55

Field ID: G1WA0036-07202016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1817718	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P308326	
	EPA 300.0 Rev. 2.1	Chloride	7.4		mg Cl/L	P309181	
	SM 2120 B	Color (true)	8.4		PCU	P308304	
	SM 2320 B-97	Total Alkalinity	23		mg CaCO3/L	P308752	
	SM 2540 C-97	TDS	40		mg/L	P308986	
	SM 2540 D-97	TSS	5	I	mg/L	P308972	
	SM 4500 F-C-97	Fluoride	0.073	I	mg F/L	P308756	
1817720	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P308503	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P308782	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P308887	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P308460	
	SM 5310 B-00	Organic Carbon	4.3		mg C/L	P308720	
1817722	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P308377	

Ref. Method and Comment:

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

Sample Location: Petty Gulf Lake

Collection Date/Time: 07/20/2016 12:15

Field ID: G1WA0022-07202016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1817719	EPA 180.1 Rev. 2.0	Turbidity	4.0	A	NTU	P308327	
	EPA 300.0 Rev. 2.1	Chloride	5.4		mg Cl/L	P309181	
	SM 2120 B	Color (true)	11		PCU	P308304	
	SM 2320 B-97	Total Alkalinity	20		mg CaCO3/L	P308752	
	SM 2540 C-97	TDS	38		mg/L	P308985	
	SM 2540 D-97	TSS	4	I	mg/L	P308971	
	SM 4500 F-C-97	Fluoride	0.053	I	mg F/L	P308756	
1817721	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P308503	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P308783	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P308888	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P308461	
	SM 5310 B-00	Organic Carbon	5.4		mg C/L	P308720	
1817723	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P308378	

Ref. Method and Comment:

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P308326

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P308327

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P309181

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308503

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308782

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308783

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308887

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308888

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308460

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308461

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308377

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308378

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

Reference Method: SM 2120 B
Batch ID: P308304

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P308752

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

Reference Method: SM 2540 C-97
Batch ID: P308985

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P308986

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P308971

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P308972

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P308756

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P308720

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: P309181

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308503

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308782

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308783

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308887

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308888

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308460

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308461

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308461

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308377

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308378

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

Reference Method: SM 2320 B-97
Batch ID: P308752

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P308756

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P308720

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P309181

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1818087	Chloride	98.4		P	90 - 110
1818088	Chloride	98.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308503

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1817589	Ammonia-N	95.8	98.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308782

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1817590	Kjeldahl Nitrogen	96.5	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308783

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1817721	Kjeldahl Nitrogen	110	99.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308887

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1817589	NO2NO3-N	97.5	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308888

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1817721	NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308460

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1817590	Total-P	99.7	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308461

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1817721	Total-P	97.7	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308377

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1817722	O-Phosphate-P	99.5	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308378

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1817723	O-Phosphate-P	94.7	96.0	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P308756

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1817588	Fluoride	96.2	96.8	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P308720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1817589	Organic Carbon	102	104	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P308326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817587	Turbidity	5.70	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P308327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817719	Turbidity	1.25	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P309181

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1818088	Chloride	0.0777	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P308503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817589	Ammonia-N	2.63	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P308782

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817590	Kjeldahl Nitrogen	3.08	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P308783

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817721	Kjeldahl Nitrogen	6.30	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308887

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817589	NO2NO3-N	1.17	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308888

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817721	NO2NO3-N	1.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817590	Total-P	0.914	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308461

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817721	Total-P	3.03	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308377

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817722	O-Phosphate-P	1.89	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308378

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817723	O-Phosphate-P	1.36	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P308304

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817656	Color (true)	0.817	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P308752

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817588	Total Alkalinity	0.265	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P308985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817297	TDS	2.51	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P308986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817421	TDS	4.48	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P308756

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817588	Fluoride	0.482	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P308720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817589	Organic Carbon	1.60	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: SM 2120 B
Run ID: A70656
Included Lab Sample IDs: 1817718, 1817719

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	95.8	95.4	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A70668
Included Lab Sample IDs: 1817718, 1817719

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A70684
Included Lab Sample IDs: 1817722, 1817723

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	99.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A70684

Included Lab Sample IDs: 1817722, 1817723

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.6	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A70718

Included Lab Sample IDs: 1817720, 1817721

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70776

Included Lab Sample IDs: 1817720, 1817721

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	102	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A70790

Included Lab Sample IDs: 1817720, 1817721

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

Reference Method: SM 2320 B-97

Run ID: A70797

Included Lab Sample IDs: 1817718, 1817719

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A70797

Included Lab Sample IDs: 1817718, 1817719

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A70838

Included Lab Sample IDs: 1817720, 1817721

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A70876

Included Lab Sample IDs: 1817720, 1817721

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.1	95.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A70876
Included Lab Sample IDs: 1817720, 1817721

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.1	96.7	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A70885
Included Lab Sample IDs: 1817718, 1817719

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	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				5.70	
	Turbidity				1.25	
EPA 300.0 Rev. 2.1	Chloride	99.8	98.8 98.4		0.0777	
EPA 350.1 Rev. 2.0	Ammonia-N	97.6	95.8 98.8			2.63
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	96.5 99.8			3.08
	Kjeldahl Nitrogen	102	110 99.7			6.30
EPA 353.2 Rev. 2.0	NO2NO3-N	104	97.5 99.5			1.17
	NO2NO3-N	104	99.5 100			1.00
EPA 365.1 Rev. 2.0	Total-P	103	99.7 101			0.914
	Total-P	97.6	97.7 101			3.03
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	99.5 101			1.89
	O-Phosphate-P	101	94.7 96.0			1.36
SM 2120 B	Color (true)				0.817	
SM 2320 B-97	Total Alkalinity	104			0.265	
SM 2540 C-97	TDS				2.51	
	TDS				4.48	
SM 4500 F-C-97	Fluoride	99.8	96.2 96.8			0.482
SM 5310 B-00	Organic Carbon	99.0	102 104			1.60

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1817718, 1817719
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1817718, 1817719
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1817720, 1817721
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1817720, 1817721
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1817720, 1817721

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1817720, 1817721
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1817722, 1817723
SM 2120 B / E31780	True Color measured at 450 nm	1817718, 1817719
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1817718, 1817719
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1817718, 1817719
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1817718, 1817719
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1817718, 1817719
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1817720, 1817721

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	07/20/2016			07/20/2016 15:43	Blanca Fach	1817718, 1817719
EPA 300.0 Rev. 2.1	07/20/2016			08/04/2016	Ping Hua	1817718, 1817719
EPA 350.1 Rev. 2.0	07/20/2016			07/22/2016	Diana M. Turner	1817720, 1817721
EPA 351.2 Rev. 2.0	07/20/2016	07/28/2016	Sofia Elnemr	08/01/2016	Christopher Armour	1817720, 1817721
EPA 353.2 Rev. 2.0	07/20/2016			07/29/2016	Peter D. Kaus	1817720, 1817721
EPA 365.1 Rev. 2.0	07/20/2016	07/22/2016	Vijayalakshmi Reddy	07/27/2016	Lipi Saha	1817720, 1817721
EPA 365.1 Rev. 2.0 dissolved	07/20/2016			07/21/2016 13:20	Julia Storbeck	1817722
	07/20/2016			07/21/2016 13:28	Julia Storbeck	1817723
SM 2120 B	07/20/2016			07/20/2016 15:53	Rochelle Y Jackson	1817718
	07/20/2016			07/20/2016 15:54	Rochelle Y Jackson	1817719
SM 2320 B-97	07/20/2016			07/27/2016	Dale L. Simmons	1817718, 1817719
SM 2540 C-97	07/20/2016			07/25/2016	Yijie Li	1817718, 1817719
SM 2540 D-97	07/20/2016			07/25/2016	Yijie Li	1817718, 1817719
SM 4500 F-C-97	07/20/2016			07/27/2016	Dale L. Simmons	1817718, 1817719
SM 5310 B-00	07/20/2016			07/27/2016	Sofia Elnemr	1817720, 1817721