

Chemical Analysis Report

NW-DIST-2017-05-03-01

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

Event Description: **LAKES WBID 145 179A**
Request ID: **RQ-2017-04-17-21**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government St
Suite 208A
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 26-MAY-2017 13:30



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: BEAR LAKE (CENTER)

Collection Date/Time: 05/02/2017 10:50

Field ID: G4NW0361

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895670	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P324597	
	EPA 300.0 Rev. 2.1	Chloride	3.0		mg Cl/L	P324965	
		Sulfate	0.64		mg SO4/L	P324968	
	SM 2120 B	Color (true)	12		PCU	P324503	
	SM 2320 B-97	Total Alkalinity	9.7		mg CaCO3/L	P325237	
	SM 2540 C-97	TDS	19	I	mg/L	P325016	
	SM 2540 D-97	TSS	4	I	mg/L	P325257	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P325275	
1895673	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P324528	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P324757	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324674	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P324543	
	SM 5310 B-00	Organic Carbon	5.5		mg C/L	P324626	
1895676	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324561	

Ref. Method and Comment:

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE KARIC (CENER)

Collection Date/Time: 05/02/2017 11:55

Field ID: G4NW0274

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895671	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P324597	
	EPA 300.0 Rev. 2.1	Chloride	2.6		mg Cl/L	P324965	
		Sulfate	1.0		mg SO4/L	P324968	
	SM 2120 B	Color (true)	11		PCU	P324503	
	SM 2320 B-97	Total Alkalinity	8.8		mg CaCO3/L	P325237	
	SM 2540 C-97	TDS	16	I	mg/L	P325016	
	SM 2540 D-97	TSS	4	I	mg/L	P325257	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P325275	
1895674	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P324528	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P324757	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324675	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P324543	
	SM 5310 B-00	Organic Carbon	3.5		mg C/L	P324626	
1895677	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324561	

Ref. Method and Comment:

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: SAND HAMMOCK POND (CENTER)

Collection Date/Time: 05/02/2017 14:25

Field ID: G3NW0077

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895672	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P324597	
	EPA 300.0 Rev. 2.1	Chloride	3.3		mg Cl/L	P324965	
		Sulfate	0.25	I	mg SO4/L	P324968	

Field ID: G3NW0077

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895672	SM 2120 B	Color (true)	41	A	PCU	P324503	
	SM 2320 B-97	Total Alkalinity	4.0		mg CaCO3/L	P325237	
	SM 2540 C-97	TDS	19	I	mg/L	P325016	
	SM 2540 D-97	TSS	2	I	mg/L	P325257	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P325406	
1895675	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P324528	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P324757	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324675	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P324543	
	SM 5310 B-00	Organic Carbon	5.2		mg C/L	P324626	
1895678	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324561	

Ref. Method and Comment:

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P324597

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P324965

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P324968

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P324528

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P324757

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P324674

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: P324675

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324543

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324561

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

Reference Method: SM 2120 B
Batch ID: P324503

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P325237

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

Reference Method: SM 2540 C-97
Batch ID: P325016

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P325257

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P325275

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P325406

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: P324626

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: P324965

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P324968

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P324528

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	106		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P324757

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P324674

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: P324675

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: P324543

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P324561

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 dissolved
Batch ID: P324561

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

Reference Method: SM 2320 B-97
Batch ID: P325237

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P325275

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

Reference Method: SM 4500 F-C-97
Batch ID: P325406

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P324626

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324965

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895492	Chloride	96.7		P	90 - 110
1895642	Chloride	96.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324968

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895492	Sulfate	93.3		P	90 - 110
1895642	Sulfate	95.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324528

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895619	Ammonia-N	97.5	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324757

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895673	Kjeldahl Nitrogen	101	99.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324674

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895602	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324675

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895674	NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895645	Total-P	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895676	O-Phosphate-P	97.5	96.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P325275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895643	Fluoride	102	102	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P325406

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896956	Fluoride	102	104	P/P	91 - 105

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P324597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895617	Turbidity	2.05	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895492	Chloride	1.15	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895492	Sulfate	1.89	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324528

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895619	Ammonia-N	2.68	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324757

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895673	Kjeldahl Nitrogen	0.779	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324674

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895602	NO2NO3-N	0.990	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324675

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895674	NO2NO3-N	1.93	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895645	Total-P	0.764	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895676	O-Phosphate-P	0.824	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P324503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895672	Color (true)	12.1	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P325237

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895643	Total Alkalinity	0.358	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P325016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895618	TDS	5.15	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P325257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895618	TSS	6.67	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P325275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895643	Fluoride	0.480	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P325406

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896956	Fluoride	1.61	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P324626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895504	Organic Carbon	0.255	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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A76157

Included Lab Sample IDs: 1895670, 1895671, 1895672

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.2	100	P/P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A76160

Included Lab Sample IDs: 1895673, 1895674, 1895675

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	103	P/P	90 - 110
Ammonia-N	97.3	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A76165

Included Lab Sample IDs: 1895676, 1895677, 1895678

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	97.3	P/P	90 - 110
O-Phosphate-P	99.4	98.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A76176

Included Lab Sample IDs: 1895670, 1895671, 1895672

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

Reference Method: SM 5310 B-00

Run ID: A76189

Included Lab Sample IDs: 1895673, 1895674, 1895675

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.0	94.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76200

Included Lab Sample IDs: 1895673, 1895674, 1895675

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76240

Included Lab Sample IDs: 1895673, 1895674, 1895675

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	97.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A76269

Included Lab Sample IDs: 1895670, 1895671, 1895672

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	99.8	P/P	90 - 110
Chloride	102	101	P/P	90 - 110
Sulfate	96.3	93.7	P/P	90 - 110
Sulfate	97.2	96.3	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A76396

Included Lab Sample IDs: 1895670, 1895671, 1895672

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

Reference Method: SM 4500 F-C-97

Run ID: A76418

Included Lab Sample IDs: 1895670, 1895671

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A76469

Included Lab Sample IDs: 1895672

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	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		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					2.05	
EPA 300.0 Rev. 2.1	Chloride	97.9	96.7	96.8		1.15	
	Sulfate	94.2	93.3	95.3		1.89	
EPA 350.1 Rev. 2.0	Ammonia-N	106	97.5	101			2.68
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	101	99.3			0.779
EPA 353.2 Rev. 2.0	NO2NO3-N	102	100	102			0.990
	NO2NO3-N	104	102	104			1.93
EPA 365.1 Rev. 2.0	Total-P	106	101	102			0.764
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.5	96.7			0.824
SM 2120 B	Color (true)					12.1	
SM 2320 B-97	Total Alkalinity	103				0.358	
SM 2540 C-97	TDS					5.15	
SM 2540 D-97	TSS					6.67	
SM 4500 F-C-97	Fluoride	98.5	102	102			0.480
	Fluoride	96.8	102	104			1.61

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision
			LCS	SMP
SM 5310 B-00	Organic Carbon	97.0		MS
				0.255

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1895670, 1895671, 1895672
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1895670, 1895671, 1895672
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1895670, 1895671, 1895672
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1895673, 1895674, 1895675
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1895673, 1895674, 1895675
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1895673, 1895674, 1895675
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1895673, 1895674, 1895675
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1895676, 1895677, 1895678
SM 2120 B / E31780	True Color measured at 450 nm	1895670, 1895671, 1895672
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1895670, 1895671, 1895672
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1895670, 1895671, 1895672
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1895670, 1895671, 1895672
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1895670, 1895671, 1895672
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1895673, 1895674, 1895675

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	05/03/2017			05/03/2017 16:36	Blanca Fach	1895670, 1895671, 1895672
EPA 300.0 Rev. 2.1	05/03/2017			05/09/2017	Ping Hua	1895670
	05/03/2017			05/10/2017	Ping Hua	1895671, 1895672
EPA 350.1 Rev. 2.0	05/03/2017			05/03/2017	Julie Michelle Frank	1895673, 1895674, 1895675
EPA 351.2 Rev. 2.0	05/03/2017	05/08/2017	Adrian Shelby	05/10/2017	Joseph Suarez	1895673, 1895674, 1895675
EPA 353.2 Rev. 2.0	05/03/2017			05/05/2017	Beverly Y. Sanders	1895673, 1895674, 1895675
EPA 365.1 Rev. 2.0	05/03/2017	05/04/2017	Adrian Shelby	05/08/2017	Lipi Saha	1895673, 1895674, 1895675
EPA 365.1 Rev. 2.0 dissolved	05/03/2017			05/03/2017 14:41	Anthony C. Onicha	1895676
	05/03/2017			05/03/2017 15:07	Anthony C. Onicha	1895677, 1895678
SM 2120 B	05/03/2017			05/03/2017 15:45	Julia Storbeck	1895672
	05/03/2017			05/03/2017 15:48	Julia Storbeck	1895670
	05/03/2017			05/03/2017 15:49	Julia Storbeck	1895671
SM 2320 B-97	05/03/2017			05/12/2017	Dale L. Simmons	1895670, 1895671, 1895672
SM 2540 C-97	05/03/2017			05/05/2017	Yijie Li	1895670, 1895671, 1895672
SM 2540 D-97	05/03/2017			05/05/2017	Yijie Li	1895670, 1895671, 1895672
SM 4500 F-C-97	05/03/2017			05/15/2017	Dale L. Simmons	1895670, 1895671
	05/03/2017			05/16/2017	Dale L. Simmons	1895672
SM 5310 B-00	05/03/2017			05/04/2017	Julie Michelle Frank	1895673, 1895674, 1895675