Chemical Analysis Report

SW-DIST-2019-05-15-01

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

Event Description: **Lakes Henry, Connie, Gibson**
Request ID: **RQ-2019-05-20-04**
Customer: **SW-DIST**
Project ID: **SMP**

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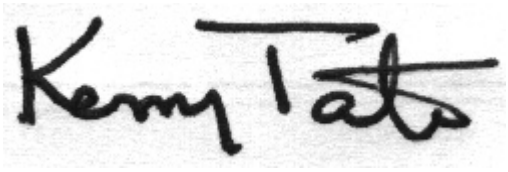
This Report replaces the previous Report Serial Number: 0113903

Report Comment: Spelling error corrected from CONNIE to CONINE

Revision certified by: Kerry Tate, Ph.D., Environmental Administrator Date Certified: 12-JUN-2019 11:09



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 by the Florida Department of Health Environmental Laboratory Certification Program 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 CONINE @ CENTER **Collection Date/Time: 05/14/2019 11:50**

Field ID: G3SW0044 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2086328	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P364015	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P364200	
	SM 2120 B	Color (true)	26	A	PCU	P364020	
	SM 2320 B-97	Total Alkalinity	57		mg CaCO3/L	P364310	
	SM 2540 C-97	TDS	130		mg/L	P364393	
	SM 2540 D-97	TSS	8	I	mg/L	P364399	
	SM 4500 F-C-97	Fluoride	0.21		mg F/L	P364314	
2086331	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P364285	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P364467	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P364298	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P364386	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P364413	
2086334	EPA 300.0 Rev. 2.1 dissolved	Sulfate	11		mg SO4/L	P364202	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P364006	

Sample Location: LAKE HENRY @ CENTER **Collection Date/Time: 05/14/2019 10:05**

Field ID: G3SW0048 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2086329	EPA 180.1 Rev. 2.0	Turbidity	6.0		NTU	P364015	
	EPA 300.0 Rev. 2.1	Chloride	30		mg Cl/L	P364200	
	SM 2120 B	Color (true)	150		PCU	P364020	
	SM 2320 B-97	Total Alkalinity	21		mg CaCO3/L	P364310	
	SM 2540 C-97	TDS	119		mg/L	P364393	
	SM 2540 D-97	TSS	4	I	mg/L	P364399	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P364314	
2086332	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P364285	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P364467	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.031		mg N/L	P364298	
	EPA 365.1 Rev. 2.0	Total-P	0.092		mg P/L	P364387	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P364413	
2086335	EPA 300.0 Rev. 2.1 dissolved	Sulfate	14		mg SO4/L	P364202	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.050		mg P/L	P364006	

Sample Location: LAKE GIBSON @ CENTER **Collection Date/Time: 05/14/2019 13:00**

Field ID: G3SW0046 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2086330	EPA 180.1 Rev. 2.0	Turbidity	15		NTU	P364015	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P364200	
	SM 2120 B	Color (true)	20		PCU	P364021	
	SM 2320 B-97	Total Alkalinity	72		mg CaCO3/L	P364310	
	SM 2540 C-97	TDS	121		mg/L	P364393	
	SM 2540 D-97	TSS	15	I	mg/L	P364399	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P364314	
2086333	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P364285	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P364468	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P364298	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P364387	
	SM 5310 B-00	Organic Carbon	9.1		mg C/L	P364413	
2086336	EPA 300.0 Rev. 2.1 dissolved	Sulfate	6.3		mg SO4/L	P364202	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P364007	

Ref. Method and Comment:
SM 2540 D-97: The PQL was elevated because of sample matrix interference.
EPA 351.2 Rev. 2.0: 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: P364015

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P364200

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P364202

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364285

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364467

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364468

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364298

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364386

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364387

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: P364006

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P364007

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

Reference Method: SM 2120 B
Batch ID: P364020

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P364021

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P364310

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

Reference Method: SM 2540 C-97
Batch ID: P364393

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P364399

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P364314

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P364413

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: P364200

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

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P364202

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364285

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364467

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364468

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364298

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364386

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364387

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P364006

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.0		P	90 - 110

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P364007

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

Reference Method: SM 2120 B
Batch ID: P364020

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P364021

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P364310

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P364314

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P364413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P364200

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086311	Chloride	100		P	90 - 110
2086635	Chloride	98.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P364202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086311	Sulfate	99.1		P	90 - 110
2086635	Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364285

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086297	Ammonia-N	103	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086224	Kjeldahl Nitrogen	101	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086309	NO2NO3-N	98.5	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364386

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086216	Total-P	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364387

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086332	Total-P	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P364006

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086310	O-Phosphate-P	94.6	93.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P364007

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086336	O-Phosphate-P	93.5	96.0	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P364314

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086656	Fluoride	98.4	98.4	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P364413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086216	Organic Carbon	97.9	96.7	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P364015

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086270	Turbidity	2.23	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P364200

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086635	Chloride	0.467	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P364202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086635	Sulfate	0.447	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364285

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086297	Ammonia-N	1.66	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086224	Kjeldahl Nitrogen	0.625	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364468

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086333	Kjeldahl Nitrogen	1.78	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086309	NO2NO3-N	0.881	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364386

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086216	Total-P	1.29	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364387

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086332	Total-P	0.478	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P364006

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086310	O-Phosphate-P	1.56	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P364007

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086336	O-Phosphate-P	2.64	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P364020

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086328	Color (true)	1.71	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P364021

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086158	Color (true)	7.87	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P364310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086656	Total Alkalinity	0.578	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P364393

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086295	TDS	3.06	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P364399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086295	TSS	7.41	Sample	P	0 - 10

Quality Assurance Report
Precision

Reference Method: SM 4500 F-C-97
Batch ID: P364314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086656	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P364413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086216	Organic Carbon	0.727	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 300.0 Rev. 2.1
Run ID: A91404
Included Lab Sample IDs: 2086328, 2086329, 2086330

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.2	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Run ID: A91404
Included Lab Sample IDs: 2086334, 2086335, 2086336

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A91453
Included Lab Sample IDs: 2086334, 2086335, 2086336

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.1	97.5	P/P	90 - 110
O-Phosphate-P	98.2	97.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A91457
Included Lab Sample IDs: 2086328, 2086329, 2086330

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

Reference Method: SM 2120 B
Run ID: A91460
Included Lab Sample IDs: 2086328, 2086329, 2086330

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 115
Color (true)	103	103	P/P	90 - 115

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A91558
Included Lab Sample IDs: 2086331, 2086332, 2086333

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A91563
Included Lab Sample IDs: 2086331, 2086332, 2086333

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	98.5	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A91564
Included Lab Sample IDs: 2086328, 2086329, 2086330

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

Quality Assurance Report
Calibration Verification

Reference Method: SM 2320 B-97
Run ID: A91564
Included Lab Sample IDs: 2086328, 2086329, 2086330

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A91564
Included Lab Sample IDs: 2086328, 2086329, 2086330

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	99.0	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A91605
Included Lab Sample IDs: 2086331, 2086332, 2086333

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A91619
Included Lab Sample IDs: 2086332, 2086333

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A91621
Included Lab Sample IDs: 2086331

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A91693
Included Lab Sample IDs: 2086331, 2086332, 2086333

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.9	95.4	P/P	90 - 110

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

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					2.23	
EPA 300.0 Rev. 2.1	Chloride	99.0	98.8	100		0.467	
EPA 300.0 Rev. 2.1 dissolved	Sulfate	98.4	104	99.1		0.447	
EPA 350.1 Rev. 2.0	Ammonia-N	103	103	105			1.66
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.8	101	100			0.625
	Kjeldahl Nitrogen	100					1.78
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	98.5	97.0			0.881
EPA 365.1 Rev. 2.0	Total-P	100	102	101			1.29
	Total-P	104	103	102			0.478
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.0	94.6	93.0			1.56
	O-Phosphate-P	100	93.5	96.0			2.64
SM 2120 B	Color (true)	101				1.71	
	Color (true)	102				7.87	
SM 2320 B-97	Total Alkalinity	102				0.578	
SM 2540 C-97	TDS					3.06	
SM 2540 D-97	TSS					7.41	
SM 4500 F-C-97	Fluoride	97.2	98.4	98.4			0.0
SM 5310 B-00	Organic Carbon	98.2	97.9	96.7			0.727

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2086328, 2086329, 2086330
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2086328, 2086329, 2086330
EPA 300.0 Rev. 2.1 dissolved / E31780	Sulfate, dissolved, in filtered, aqueous matrices	2086334, 2086335, 2086336
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2086331, 2086332, 2086333
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2086331, 2086332, 2086333
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2086331, 2086332, 2086333
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2086331, 2086332, 2086333
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2086334, 2086335, 2086336
SM 2120 B / E31780	True Color measured at 450 nm	2086328, 2086329, 2086330
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2086328, 2086329, 2086330
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2086328, 2086329, 2086330
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2086328, 2086329, 2086330
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2086328, 2086329, 2086330
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2086331, 2086332, 2086333

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	05/15/2019			05/15/2019 15:04	Sima Feizi	2086328, 2086329, 2086330
EPA 300.0 Rev. 2.1	05/15/2019			05/17/2019 16:37	Lipi Saha	2086328
	05/15/2019			05/17/2019 16:49	Lipi Saha	2086329
	05/15/2019			05/17/2019 17:01	Lipi Saha	2086330
EPA 300.0 Rev. 2.1 dissolved	05/15/2019			05/17/2019 20:27	Lipi Saha	2086334
	05/15/2019			05/17/2019 20:39	Lipi Saha	2086335
	05/15/2019			05/17/2019 20:52	Lipi Saha	2086336
EPA 350.1 Rev. 2.0	05/15/2019			05/17/2019 13:32	Ping Hua	2086331
	05/15/2019			05/17/2019 13:34	Ping Hua	2086332
	05/15/2019			05/17/2019 13:35	Ping Hua	2086333
EPA 351.2 Rev. 2.0	05/15/2019	05/23/2019 13:15	Adrian Shelby	05/28/2019 14:28	Joseph Suarez	2086331
	05/15/2019	05/23/2019 13:15	Adrian Shelby	05/28/2019 14:29	Joseph Suarez	2086332
	05/15/2019	05/23/2019 13:15	Adrian Shelby	05/28/2019 14:34	Joseph Suarez	2086333
EPA 353.2 Rev. 2.0	05/15/2019			05/21/2019 11:55	Beverly Y. Sanders	2086331
	05/15/2019			05/21/2019 11:56	Beverly Y. Sanders	2086332
	05/15/2019			05/21/2019 11:57	Beverly Y. Sanders	2086333
EPA 365.1 Rev. 2.0	05/15/2019	05/22/2019 02:01	Lipi Saha	05/22/2019 19:52	Rosalyn Ballman	2086332
	05/15/2019	05/22/2019 02:01	Lipi Saha	05/22/2019 19:55	Rosalyn Ballman	2086333
	05/15/2019	05/22/2019 02:01	Lipi Saha	05/23/2019 12:55	Rosalyn Ballman	2086331
EPA 365.1 Rev. 2.0 dissolved	05/15/2019			05/15/2019 16:05	Jhamieka S. Greenwood	2086336
	05/15/2019			05/15/2019 16:26	Jhamieka S. Greenwood	2086334
	05/15/2019			05/15/2019 16:27	Jhamieka S. Greenwood	2086335
SM 2120 B	05/15/2019			05/15/2019 16:56	Madeline Funaro	2086328
	05/15/2019			05/15/2019 17:10	Madeline Funaro	2086330
	05/15/2019			05/15/2019 17:11	Madeline Funaro	2086329
SM 2320 B-97	05/15/2019			05/21/2019 07:30	Dale L. Simmons	2086328
	05/15/2019			05/21/2019 07:41	Dale L. Simmons	2086329
	05/15/2019			05/21/2019 07:54	Dale L. Simmons	2086330
SM 2540 C-97	05/15/2019			05/16/2019 15:31	Yijie Li	2086328, 2086329, 2086330
SM 2540 D-97	05/15/2019			05/16/2019 15:31	Yijie Li	2086328, 2086329, 2086330
SM 4500 F-C-97	05/15/2019			05/21/2019 07:30	Dale L. Simmons	2086328
	05/15/2019			05/21/2019 07:41	Dale L. Simmons	2086329
	05/15/2019			05/21/2019 07:54	Dale L. Simmons	2086330
SM 5310 B-00	05/15/2019			05/22/2019 09:46	Julia Storbeck	2086331
	05/15/2019			05/22/2019 10:00	Julia Storbeck	2086332
	05/15/2019			05/22/2019 10:13	Julia Storbeck	2086333