

Chemical Analysis Report

CEN-DIST-2019-02-27-02

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

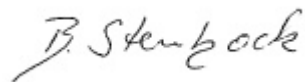
Event Description: **Hope / Park / Yvonne**
Request ID: **RQ-2019-02-25-36**
Customer: **CEN-DIST**
Project ID: **SMP**

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Date Certified: 21-MAR-2019 17:13



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 Hope @ Center

Collection Date/Time: 02/26/2019 09:52

Field ID: G2CE0106

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2065541	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P359635	
	EPA 300.0 Rev. 2.1	Chloride	52		mg Cl/L	P360197	
		Sulfate	23		mg SO4/L	P360199	
	SM 2120 B	Color (true)	21		PCU	P359666	
	SM 2320 B-97	Total Alkalinity	44		mg CaCO3/L	P360159	
	SM 2540 C-97	TDS	151		mg/L	P360081	
	SM 2540 D-97	TSS	2	I	mg/L	P359985	
	SM 4500 F-C-97	Fluoride	0.064	I	mg F/L	P360162	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P360050	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P359795	
2065544	EPA 353.2 Rev. 2.0	NO2NO3-N	0.044		mg N/L	P359735	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P359704	
	SM 5310 B-00	Organic Carbon	5.4		mg C/L	P359863	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P359642	
	dissolved						

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries and relative percent difference are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Lake Yvonne (Lake Vonna) at center

Collection Date/Time: 02/26/2019 09:08

Field ID: G2CE0095

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2065542	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P359635	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P360197	
		Sulfate	9.0		mg SO4/L	P360199	
	SM 2120 B	Color (true)	39		PCU	P359666	
	SM 2320 B-97	Total Alkalinity	43		mg CaCO3/L	P360159	
	SM 2540 C-97	TDS	95		mg/L	P360081	
	SM 2540 D-97	TSS	2	U	mg/L	P359985	
	SM 4500 F-C-97	Fluoride	0.30		mg F/L	P360162	
2065545	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P360050	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P359795	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P359735	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P359704	
	SM 5310 B-00	Organic Carbon	7.2		mg C/L	P359863	
2065548	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P359642	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries and relative percent difference are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Lake Park @ Center

Collection Date/Time: 02/26/2019 10:27

Field ID: G2CE0009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2065543	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P359635	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P360197	
		Sulfate	11		mg SO4/L	P360199	
	SM 2120 B	Color (true)	15		PCU	P359666	
	SM 2320 B-97	Total Alkalinity	66		mg CaCO3/L	P360159	
	SM 2540 C-97	TDS	107		mg/L	P360081	
	SM 2540 D-97	TSS	3	I	mg/L	P359985	
	SM 4500 F-C-97	Fluoride	0.057	I	mg F/L	P360162	
2065546	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P360050	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P359795	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P359735	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P359704	
	SM 5310 B-00	Organic Carbon	5.4		mg C/L	P359863	
2065549	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P359642	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries and relative percent difference are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Lake Park @ Center

Collection Date/Time: 02/26/2019 10:30

Field ID: G2CE0009_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2065550	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P359635	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P360197	
		Sulfate	11		mg SO4/L	P360199	
	SM 2120 B	Color (true)	15		PCU	P359666	
	SM 2320 B-97	Total Alkalinity	67		mg CaCO3/L	P360159	
	SM 2540 C-97	TDS	111		mg/L	P360082	
	SM 2540 D-97	TSS	2	I	mg/L	P359986	
	SM 4500 F-C-97	Fluoride	0.056	I	mg F/L	P360162	
2065552	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P360050	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P359795	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P359735	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P359704	
	SM 5310 B-00	Organic Carbon	5.6		mg C/L	P359863	
2065554	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P359642	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries and relative percent difference are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Field Blank

Collection Date/Time: 02/26/2019 10:40

Field ID: FB_02262019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2065551	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P359635	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P360202	
		Sulfate	0.20	U	mg SO4/L	P360207	
	SM 2120 B	Color (true)	2.5	U	PCU	P359666	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P360159	
	SM 2540 C-97	TDS	15	U	mg/L	P360079	
	SM 2540 D-97	TSS	2	U	mg/L	P359983	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P360162	
2065553	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P360050	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P359796	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P359735	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P359704	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P359863	
2065555	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P359642	

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: P359635

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360197

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360199

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360202

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360207

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360050

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359795

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359796

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359735

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359704

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359642

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

Reference Method: SM 2120 B
Batch ID: P359666

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P360159

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

Reference Method: SM 2540 C-97
Batch ID: P360079

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P360081

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P360082

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P359983

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P359985

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P359986

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P360162

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P359863

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: P360197

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360199

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360202

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360207

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360050

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359795

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359796

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: P359735

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359704

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359642

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

Reference Method: SM 2120 B
Batch ID: P359666

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P360159

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P360162

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	93.9		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359863

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	91.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360197

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065493	Chloride	103	105	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065633	Chloride	102		P	90 - 110
2065714	Chloride	99.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360207

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065633	Sulfate	102		P	90 - 110
2065714	Sulfate	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360050

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065497	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359795

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065488	Kjeldahl Nitrogen	90.1	92.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359796

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065636	Kjeldahl Nitrogen	99.4	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359735

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065488	NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065546	Total-P	105	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065470	O-Phosphate-P	94.5	97.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P360162

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066000	Fluoride	96.3	96.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359863

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065466	Organic Carbon	93.2	93.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P359635

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065487	Turbidity	1.85	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360197

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065493	Chloride	0.674	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065714	Chloride	0.568	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360207

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065714	Sulfate	0.906	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065497	Ammonia-N	0.696	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065488	Kjeldahl Nitrogen	1.35	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359796

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065636	Kjeldahl Nitrogen	1.28	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359735

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065488	NO2NO3-N	0.173	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065546	Total-P	1.85	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065470	O-Phosphate-P	2.71	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P359666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065493	Color (true)	2.73	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P360159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066000	Total Alkalinity	0.803	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P360079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065388	TDS	2.68	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P360081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065460	TDS	0.0	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P360082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065661	TDS	5.73	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P360162

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066000	Fluoride	0.0	Spike	P	0 - 3.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P359863

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065466	Organic Carbon	0.0839	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 180.1 Rev. 2.0

Run ID: A89702

Included Lab Sample IDs: 2065541, 2065542, 2065543, 2065550, 2065551

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89703

Included Lab Sample IDs: 2065547, 2065548, 2065549, 2065554, 2065555

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.2	97.9	P/P	90 - 110
O-Phosphate-P	97.9	96.9	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A89714

Included Lab Sample IDs: 2065541, 2065542, 2065543, 2065550, 2065551

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89725

Included Lab Sample IDs: 2065544, 2065545, 2065546, 2065552, 2065553

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89755

Included Lab Sample IDs: 2065544, 2065545, 2065546, 2065552, 2065553

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89772

Included Lab Sample IDs: 2065544, 2065545, 2065546, 2065552, 2065553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.3	98.7	P/P	90 - 110
Kjeldahl Nitrogen	98.7	98.2	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A89791

Included Lab Sample IDs: 2065544, 2065545, 2065546, 2065552, 2065553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	91.4	90.0	P/P	90 - 110
Organic Carbon	91.6	91.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89868

Included Lab Sample IDs: 2065544, 2065545, 2065546, 2065552, 2065553

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89885

Included Lab Sample IDs: 2065541, 2065542, 2065543, 2065550, 2065551

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

Reference Method: SM 2320 B-97

Run ID: A89907

Included Lab Sample IDs: 2065541, 2065542, 2065543, 2065550, 2065551

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	98.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A89907

Included Lab Sample IDs: 2065541, 2065542, 2065543, 2065550, 2065551

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	98.6	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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					1.85	
EPA 300.0 Rev. 2.1	Chloride	107	103	105			0.674
	Chloride	103	99.8	102		0.568	
	Sulfate	107					
	Sulfate	103	99.4	102		0.906	
EPA 350.1 Rev. 2.0	Ammonia-N	101	102	101			0.696
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	90.1	92.6			1.35
	Kjeldahl Nitrogen	102	99.4	97.8			1.28
EPA 353.2 Rev. 2.0	NO2NO3-N	102	99.0				0.173
EPA 365.1 Rev. 2.0	Total-P	106	105	102			1.85
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	94.5	97.1			2.71
SM 2120 B	Color (true)	103				2.73	
SM 2320 B-97	Total Alkalinity	102				0.803	
SM 2540 C-97	TDS					2.68	
	TDS					0.0	
	TDS					5.73	
SM 4500 F-C-97	Fluoride	93.9	96.3	96.3			0.0
SM 5310 B-00	Organic Carbon	91.5	93.2	93.2			0.0839

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2065541, 2065542, 2065543, 2065550, 2065551
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2065541, 2065542, 2065543, 2065550, 2065551
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2065541, 2065542, 2065543, 2065550, 2065551
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2065544, 2065545, 2065546, 2065552, 2065553
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2065544, 2065545, 2065546, 2065552, 2065553
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2065544, 2065545, 2065546, 2065552, 2065553
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2065544, 2065545, 2065546, 2065552, 2065553
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2065547, 2065548, 2065549, 2065554, 2065555
SM 2120 B / E31780	True Color measured at 450 nm	2065541, 2065542, 2065543, 2065550, 2065551
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2065541, 2065542, 2065543, 2065550, 2065551
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2065541, 2065542, 2065543, 2065550, 2065551
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2065541, 2065542, 2065543, 2065550, 2065551
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2065541, 2065542, 2065543, 2065550, 2065551
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2065544, 2065545, 2065546, 2065552, 2065553

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	02/27/2019			02/27/2019 17:05	Adrian Shelby	2065541, 2065542, 2065543, 2065550, 2065551
EPA 300.0 Rev. 2.1	02/27/2019			03/08/2019 14:55	Lipi Saha	2065541
	02/27/2019			03/08/2019 15:09	Lipi Saha	2065542
	02/27/2019			03/08/2019 15:24	Lipi Saha	2065543
	02/27/2019			03/08/2019 15:39	Lipi Saha	2065550
	02/27/2019			03/09/2019 00:31	Lipi Saha	2065551
EPA 350.1 Rev. 2.0	02/27/2019			03/06/2019 11:08	Ping Hua	2065544
	02/27/2019			03/06/2019 11:15	Ping Hua	2065545
	02/27/2019			03/06/2019 11:17	Ping Hua	2065546
	02/27/2019			03/06/2019 11:18	Ping Hua	2065552
	02/27/2019			03/06/2019 11:20	Ping Hua	2065553
EPA 351.2 Rev. 2.0	02/27/2019	03/01/2019 14:15	Adrian Shelby	03/04/2019 12:50	Joseph Suarez	2065544
	02/27/2019	03/01/2019 14:15	Adrian Shelby	03/04/2019 12:52	Joseph Suarez	2065545
	02/27/2019	03/01/2019 14:15	Adrian Shelby	03/04/2019 12:54	Joseph Suarez	2065546
	02/27/2019	03/01/2019 14:15	Adrian Shelby	03/04/2019 12:55	Joseph Suarez	2065552
	02/27/2019	03/01/2019 14:15	Adrian Shelby	03/04/2019 13:03	Joseph Suarez	2065553
EPA 353.2 Rev. 2.0	02/27/2019			02/28/2019 11:48	Beverly Y. Sanders	2065544
	02/27/2019			02/28/2019 11:50	Beverly Y. Sanders	2065545
	02/27/2019			02/28/2019 11:51	Beverly Y. Sanders	2065546
	02/27/2019			02/28/2019 11:52	Beverly Y. Sanders	2065552
	02/27/2019			02/28/2019 11:53	Beverly Y. Sanders	2065553
EPA 365.1 Rev. 2.0	02/27/2019	02/28/2019 13:00	Sima Feizi	03/01/2019 16:36	Rosalyn Ballman	2065544
	02/27/2019	02/28/2019 13:00	Sima Feizi	03/01/2019 16:37	Rosalyn Ballman	2065545
	02/27/2019	02/28/2019 13:00	Sima Feizi	03/01/2019 16:38	Rosalyn Ballman	2065546, 2065552
	02/27/2019	02/28/2019 13:00	Sima Feizi	03/01/2019 16:39	Rosalyn Ballman	2065553
EPA 365.1 Rev. 2.0 dissolved	02/27/2019			02/27/2019 12:37	Jhamieka S. Greenwood	2065547
	02/27/2019			02/27/2019 12:38	Jhamieka S. Greenwood	2065548
	02/27/2019			02/27/2019 12:39	Jhamieka S. Greenwood	2065549
	02/27/2019			02/27/2019 12:40	Jhamieka S. Greenwood	2065554
	02/27/2019			02/27/2019 12:45	Jhamieka S. Greenwood	2065555
SM 2120 B	02/27/2019			02/27/2019 16:18	Chelsea Hernandez	2065541, 2065542
	02/27/2019			02/27/2019 16:19	Chelsea Hernandez	2065543
	02/27/2019			02/27/2019 16:20	Chelsea Hernandez	2065550
	02/27/2019			02/27/2019 16:21	Chelsea Hernandez	2065551
SM 2320 B-97	02/27/2019			03/07/2019 15:37	Dale L. Simmons	2065541
	02/27/2019			03/07/2019 15:49	Dale L. Simmons	2065542
	02/27/2019			03/07/2019 16:02	Dale L. Simmons	2065543
	02/27/2019			03/07/2019 16:15	Dale L. Simmons	2065550
	02/27/2019			03/07/2019 16:29	Dale L. Simmons	2065551

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 C-97	02/27/2019			03/01/2019 15:19	Yijie Li	2065541, 2065542, 2065543, 2065550, 2065551
SM 2540 D-97	02/27/2019			03/01/2019 15:19	Yijie Li	2065541, 2065542, 2065543, 2065550, 2065551
SM 4500 F-C-97	02/27/2019			03/07/2019 15:37	Dale L. Simmons	2065541
	02/27/2019			03/07/2019 15:49	Dale L. Simmons	2065542
	02/27/2019			03/07/2019 16:02	Dale L. Simmons	2065543
	02/27/2019			03/07/2019 16:15	Dale L. Simmons	2065550
	02/27/2019			03/07/2019 16:29	Dale L. Simmons	2065551
SM 5310 B-00	02/27/2019			03/04/2019 10:32	Chelsea Hernandez	2065544
	02/27/2019			03/04/2019 10:46	Chelsea Hernandez	2065545
	02/27/2019			03/04/2019 11:27	Chelsea Hernandez	2065546
	02/27/2019			03/04/2019 11:40	Chelsea Hernandez	2065552
	02/27/2019			03/04/2019 11:53	Chelsea Hernandez	2065553