

Chemical Analysis Report

CEN-DIST-2019-02-27-01

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

Event Description: **Ellen / Concord / Searcy / Noname**

Request ID: **RQ-2019-02-25-35**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

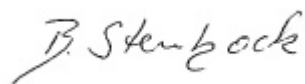
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 15-MAR-2019 16:10



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 Searcy @ center

Collection Date/Time: 02/25/2019 11:55

Field ID: G2CE0137

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2065459	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P359634	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P360196	
		Sulfate	4.3		mg SO4/L	P360198	
	SM 2120 B	Color (true)	63	A	PCU	P359991	
	SM 2320 B-97	Total Alkalinity	26		mg CaCO3/L	P359773	
	SM 2540 C-97	TDS	85		mg/L	P360080	
	SM 2540 D-97	TSS	7	I	mg/L	P359984	
	SM 4500 F-C-97	Fluoride	0.074	I	mg F/L	P359776	
2065463	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P359940	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.90		mg N/L	P359937	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P359734	
	EPA 365.1 Rev. 2.0	Total-P	0.077		mg P/L	P359703	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P359862	
2065467	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	IQ	mg P/L	P359641	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

Sample Location: Lake Concord @ Center

Collection Date/Time: 02/25/2019 11:15

Field ID: G2CE0059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2065460	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P359634	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P360196	
		Sulfate	7.3		mg SO4/L	P360198	
	SM 2120 B	Color (true)	15		PCU	P359991	
	SM 2320 B-97	Total Alkalinity	72		mg CaCO3/L	P359773	
	SM 2540 C-97	TDS	111	A	mg/L	P360081	
	SM 2540 D-97	TSS	3	IA	mg/L	P359985	
	SM 4500 F-C-97	Fluoride	0.057	I	mg F/L	P359776	
2065464	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P359940	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P359937	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P359734	
	EPA 365.1 Rev. 2.0	Total-P	0.036		mg P/L	P359703	
	SM 5310 B-00	Organic Carbon	4.8		mg C/L	P359862	
2065468	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	UQ	mg P/L	P359641	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

Sample Location: Lake Ellen @ Center

Collection Date/Time: 02/25/2019 10:40

Field ID: G2CE0060

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2065461	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P359634	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P360196	
		Sulfate	13		mg SO4/L	P360198	
	SM 2120 B	Color (true)	28	Q	PCU	P359991	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P359773	
	SM 2540 C-97	TDS	57		mg/L	P360081	
	SM 2540 D-97	TSS	2	I	mg/L	P359985	
	SM 4500 F-C-97	Fluoride	0.056	I	mg F/L	P359776	
2065465	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P359940	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P359937	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P359734	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P359703	
	SM 5310 B-00	Organic Carbon	5.5		mg C/L	P359862	
2065469	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	UQ	mg P/L	P359641	

Ref. Method and Comment:

SM 2120 B: The sample expired upon receipt.

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

Sample Location: Noname Lake @ Center

Collection Date/Time: 02/25/2019 12:45

Field ID: G2CE0068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2065462	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P359634	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P360196	
		Sulfate	10		mg SO4/L	P360198	
	SM 2120 B	Color (true)	15		PCU	P359991	
	SM 2320 B-97	Total Alkalinity	18		mg CaCO3/L	P359773	
	SM 2540 C-97	TDS	66		mg/L	P360081	
	SM 2540 D-97	TSS	2	I	mg/L	P359985	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P359776	
2065466	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P359940	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P359937	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P359734	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P359703	
	SM 5310 B-00	Organic Carbon	5.2		mg C/L	P359863	
2065470	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: P359634

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360196

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360198

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359940

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359937

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359734

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: P359703

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359641

Component	Result	Code	Units
O-Phosphate-P	0.004	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

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P359991

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P359773

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

Reference Method: SM 2540 C-97
Batch ID: P360080

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 D-97
Batch ID: P359984

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

Reference Method: SM 4500 F-C-97
Batch ID: P359776

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P359862

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/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: P360196

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360198

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359940

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359937

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359734

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: P359703

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359641

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

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: P359991

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.4		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P359773

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

Reference Method: SM 4500 F-C-97
Batch ID: P359776

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359862

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	90.6		P	85 - 115

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: P360196

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065276	Chloride	105		P	90 - 110
2065451	Chloride	99.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360198

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065276	Sulfate	104		P	90 - 110
2065451	Sulfate	99.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065410	Ammonia-N	98.2	95.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065465	Kjeldahl Nitrogen	101	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359734

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065463	NO2NO3-N	99.9	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359703

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065465	Total-P	101	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359641

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065467	O-Phosphate-P	94.1	97.3	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

Reference Method: SM 4500 F-C-97
Batch ID: P359776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065392	Fluoride	94.3	95.4	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P359862

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062440	Organic Carbon	92.3	95.5	P/P	85 - 115

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: P359634

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065482	Turbidity	2.31	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360196

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065276	Chloride	0.899	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360198

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065276	Sulfate	0.00940	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065410	Ammonia-N	3.18	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065465	Kjeldahl Nitrogen	3.57	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359734

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065463	NO2NO3-N	1.46	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359703

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065465	Total-P	2.09	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359641

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065467	O-Phosphate-P	3.07	Spike	P	0 - 20

Quality Assurance Report Precision

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: P359991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065459	Color (true)	0.164	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P359773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065392	Total Alkalinity	0.336	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P360080

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065389	TDS	6.70	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 4500 F-C-97
Batch ID: P359776

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065392	Fluoride	0.998	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P359862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062440	Organic Carbon	3.24	Spike	P	0 - 20

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

Quality Assurance Report

Precision

* 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: 2065459, 2065460, 2065461, 2065462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89703

Included Lab Sample IDs: 2065467, 2065468, 2065469, 2065470

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	97.2	P/P	90 - 110
O-Phosphate-P	99.7	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89725

Included Lab Sample IDs: 2065463, 2065464, 2065465, 2065466

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	102	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A89746

Included Lab Sample IDs: 2065459, 2065460, 2065461, 2065462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A89746

Included Lab Sample IDs: 2065459, 2065460, 2065461, 2065462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89751

Included Lab Sample IDs: 2065463

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89755

Included Lab Sample IDs: 2065464, 2065465, 2065466

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

Reference Method: SM 5310 B-00

Run ID: A89791

Included Lab Sample IDs: 2065463, 2065464, 2065465, 2065466

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	92.5	91.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89814

Included Lab Sample IDs: 2065463, 2065464, 2065465, 2065466

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	104	P/P	90 - 110
Ammonia-N	99.9	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89835

Included Lab Sample IDs: 2065463, 2065464, 2065465, 2065466

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	96.7	P/P	90 - 110
Kjeldahl Nitrogen	96.7	102	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A89838

Included Lab Sample IDs: 2065459, 2065460, 2065461, 2065462

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89885

Included Lab Sample IDs: 2065459, 2065460, 2065461, 2065462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	103	P/P	90 - 110
Chloride	103	100	P/P	90 - 110
Sulfate	103	103	P/P	90 - 110
Sulfate	103	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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					2.31	
EPA 300.0 Rev. 2.1	Chloride	105	105	99.6		0.899	
	Sulfate	105	104	99.8		0.0094	
EPA 350.1 Rev. 2.0	Ammonia-N	95.5	98.2	95.1			3.18
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	101	106			3.57
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	99.9	101			1.46
EPA 365.1 Rev. 2.0	Total-P	105	101	104			2.09
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6	94.1	97.3			3.07
	O-Phosphate-P	100	94.5	97.1			2.71
SM 2120 B	Color (true)	98.4				0.164	
SM 2320 B-97	Total Alkalinity	102				0.336	
SM 2540 C-97	TDS					6.70	
	TDS					0.0	
SM 4500 F-C-97	Fluoride	97.0	94.3	95.4			0.998
SM 5310 B-00	Organic Carbon	90.6	92.3	95.5			3.24
	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	2065459, 2065460, 2065461, 2065462
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2065459, 2065460, 2065461, 2065462
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2065459, 2065460, 2065461, 2065462
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2065463, 2065464, 2065465, 2065466
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2065463, 2065464, 2065465, 2065466
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2065463, 2065464, 2065465, 2065466
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2065463, 2065464, 2065465, 2065466
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2065467, 2065468, 2065469, 2065470
SM 2120 B / E31780	True Color measured at 450 nm	2065459, 2065460, 2065461, 2065462
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2065459, 2065460, 2065461, 2065462
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2065459, 2065460, 2065461, 2065462
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2065459, 2065460, 2065461, 2065462
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2065459, 2065460, 2065461, 2065462
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2065463, 2065464, 2065465, 2065466

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 10:38	Adrian Shelby	2065461
	02/27/2019			02/27/2019 10:45	Adrian Shelby	2065460
	02/27/2019			02/27/2019 10:46	Adrian Shelby	2065459
	02/27/2019			02/27/2019 10:48	Adrian Shelby	2065462
EPA 300.0 Rev. 2.1	02/27/2019			03/08/2019 10:58	Lipi Saha	2065459
	02/27/2019			03/08/2019 11:13	Lipi Saha	2065460
	02/27/2019			03/08/2019 11:28	Lipi Saha	2065461
	02/27/2019			03/08/2019 12:12	Lipi Saha	2065462
EPA 350.1 Rev. 2.0	02/27/2019			03/05/2019 11:41	Ping Hua	2065463
	02/27/2019			03/05/2019 11:49	Ping Hua	2065464
	02/27/2019			03/05/2019 11:50	Ping Hua	2065465
	02/27/2019			03/05/2019 11:52	Ping Hua	2065466
EPA 351.2 Rev. 2.0	02/27/2019	03/05/2019 12:00	Adrian Shelby	03/06/2019 12:09	Joseph Suarez	2065463
	02/27/2019	03/05/2019 12:00	Adrian Shelby	03/06/2019 12:10	Joseph Suarez	2065464
	02/27/2019	03/05/2019 12:00	Adrian Shelby	03/06/2019 12:15	Joseph Suarez	2065465
	02/27/2019	03/05/2019 12:00	Adrian Shelby	03/06/2019 12:20	Joseph Suarez	2065466
EPA 353.2 Rev. 2.0	02/27/2019			02/28/2019 11:26	Beverly Y. Sanders	2065463
	02/27/2019			02/28/2019 11:27	Beverly Y. Sanders	2065464
	02/27/2019			02/28/2019 11:28	Beverly Y. Sanders	2065465
	02/27/2019			02/28/2019 11:30	Beverly Y. Sanders	2065466
EPA 365.1 Rev. 2.0	02/27/2019	02/28/2019 13:00	Sima Feizi	03/01/2019 14:42	Rosalyn Ballman	2065463
	02/27/2019	02/28/2019 13:00	Sima Feizi	03/01/2019 16:32	Rosalyn Ballman	2065464
	02/27/2019	02/28/2019 13:00	Sima Feizi	03/01/2019 16:33	Rosalyn Ballman	2065465
	02/27/2019	02/28/2019 13:00	Sima Feizi	03/01/2019 16:34	Rosalyn Ballman	2065466
EPA 365.1 Rev. 2.0 dissolved	02/27/2019			02/27/2019 11:56	Jhamieka S. Greenwood	2065467
	02/27/2019			02/27/2019 12:00	Jhamieka S. Greenwood	2065470
	02/27/2019			02/27/2019 12:20	Jhamieka S. Greenwood	2065468
	02/27/2019			02/27/2019 12:21	Jhamieka S. Greenwood	2065469
SM 2120 B	02/27/2019			02/27/2019 11:00	Chelsea Hernandez	2065459
	02/27/2019			02/27/2019 11:01	Chelsea Hernandez	2065460
	02/27/2019			02/27/2019 11:02	Chelsea Hernandez	2065461, 2065462
SM 2320 B-97	02/27/2019			03/01/2019 03:08	Dale L. Simmons	2065459
	02/27/2019			03/01/2019 03:21	Dale L. Simmons	2065460
	02/27/2019			03/01/2019 03:32	Dale L. Simmons	2065461
	02/27/2019			03/01/2019 03:45	Dale L. Simmons	2065462
SM 2540 C-97	02/27/2019			03/01/2019 15:19	Yijie Li	2065459, 2065460, 2065461, 2065462
SM 2540 D-97	02/27/2019			03/01/2019 15:19	Yijie Li	2065459, 2065460, 2065461, 2065462
SM 4500 F-C-97	02/27/2019			03/01/2019 03:08	Dale L. Simmons	2065459
	02/27/2019			03/01/2019 03:21	Dale L. Simmons	2065460
	02/27/2019			03/01/2019 03:32	Dale L. Simmons	2065461

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-97	02/27/2019			03/01/2019 03:45	Dale L. Simmons	2065462
SM 5310 B-00	02/27/2019			03/04/2019 06:32	Chelsea Hernandez	2065463
	02/27/2019			03/04/2019 06:45	Chelsea Hernandez	2065464
	02/27/2019			03/04/2019 06:59	Chelsea Hernandez	2065465
	02/27/2019			03/04/2019 07:42	Chelsea Hernandez	2065466