

Chemical Analysis Report

SE-DIST-2019-03-21-01

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

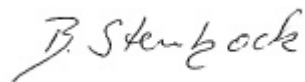
Event Description: **SMP-PSL**
Request ID: **RQ-2019-03-04-72**
Customer: **SE-DIST**
Project ID: **SMP**

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

Date Certified: 09-APR-2019 18:47



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: Henderson Pond @ Center

Collection Date/Time: 03/20/2019 11:15

Field ID: G2SE0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2071690	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P360866	
	EPA 300.0 Rev. 2.1	Chloride	41		mg Cl/L	P361185	
		Sulfate	2.5		mg SO4/L	P361188	
	SM 2120 B	Color (true)	110		PCU	P360953	
	SM 2320 B-97	Total Alkalinity	7.4		mg CaCO3/L	P361324	RPD
	SM 2540 C-97	TDS	117		mg/L	P361290	
	SM 2540 D-97	TSS	2	U	mg/L	P361104	
	SM 4500 F-C-97	Fluoride	0.051	I	mg F/L	P361328	
2071691	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P361250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P361075	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P360974	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P361193	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P361054	
2071692	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P360859	

Ref. Method and Comment:

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

Sample Location: Henderson Pond @ Center

Collection Date/Time: 03/20/2019 11:20

Field ID: G2SE0050_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2071696	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P360866	
	EPA 300.0 Rev. 2.1	Chloride	41		mg Cl/L	P361185	
		Sulfate	2.5		mg SO4/L	P361188	
	SM 2120 B	Color (true)	110		PCU	P360953	
	SM 2320 B-97	Total Alkalinity	7.1		mg CaCO3/L	P361324	RPD
	SM 2540 C-97	TDS	121		mg/L	P361290	
	SM 2540 D-97	TSS	2	U	mg/L	P361104	
	SM 4500 F-C-97	Fluoride	0.053	I	mg F/L	P361328	
2071697	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P361250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P361075	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P360974	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P361193	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P361054	
2071698	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P360860	

Ref. Method and Comment:

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

Sample Location: Lake Eden

Collection Date/Time: 03/20/2019 12:50

Field ID: G2SE0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2071693	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P360865	
	EPA 300.0 Rev. 2.1	Chloride	35		mg Cl/L	P361185	
		Sulfate	1.7		mg SO4/L	P361188	
	SM 2120 B	Color (true)	120		PCU	P360953	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P361324	RPD
	SM 2540 C-97	TDS	120		mg/L	P361290	
	SM 2540 D-97	TSS	2	U	mg/L	P361104	
	SM 4500 F-C-97	Fluoride	0.059	I	mg F/L	P361328	
2071694	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P361250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P361075	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.030		mg N/L	P360974	
	EPA 365.1 Rev. 2.0	Total-P	0.043		mg P/L	P361193	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P361054	
2071695	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P360859	

Ref. Method and Comment:

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

Sample Location: Lake Eden

Collection Date/Time: 03/20/2019 13:00

Field ID: FB_03202019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2071699	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P360865	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P361185	
		Sulfate	0.20	U	mg SO4/L	P361188	
	SM 2120 B	Color (true)	2.5	U	PCU	P360953	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P361324	RPD
	SM 2540 C-97	TDS	15	U	mg/L	P361290	
	SM 2540 D-97	TSS	2	U	mg/L	P361104	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P361328	
2071700	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P361250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P361075	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P360974	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P361193	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P361054	
2071701	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P360860	

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: P360865

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360866

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361185

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361188

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361250

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361075

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360974

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361193

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360859

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360860

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

Reference Method: SM 2120 B
Batch ID: P360953

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P361324

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

Reference Method: SM 2540 C-97
Batch ID: P361290

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361104

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P361328

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P361054

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: P361185

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361188

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361250

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361075

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360974

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361193

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360859

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360860

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

Reference Method: SM 2120 B
Batch ID: P360953

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	105		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P361324

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.4		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P361328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P361054

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071639	Chloride	101		P	90 - 110
2071702	Chloride	99.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361188

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071639	Sulfate	101		P	90 - 110
2071702	Sulfate	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071676	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361075

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071676	Kjeldahl Nitrogen	101	98.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071643	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361193

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071703	Total-P	91.4	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360859

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071611	O-Phosphate-P	95.8	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071704	O-Phosphate-P	96.0	97.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P361328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072023	Fluoride	103	104	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P361054

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070675	Organic Carbon	99.9	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360865

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071708	Turbidity	1.48	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360866

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071871	Turbidity	6.01	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071639	Chloride	1.50	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361188

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071639	Sulfate	0.942	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071676	Ammonia-N	0.256	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361075

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071676	Kjeldahl Nitrogen	1.66	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071643	NO2NO3-N	0.826	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361193

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071703	Total-P	3.45	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P360859

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071611	O-Phosphate-P	1.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P360860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071704	O-Phosphate-P	0.908	Spike	P	0 - 20

Reference Method: SM 2120 B
 Batch ID: P360953

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071674	Color (true)	0.288	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P361324

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072023	Total Alkalinity	3.79	Sample	F	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P361290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071705	TDS	1.49	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P361328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072023	Fluoride	0.484	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
 Batch ID: P361054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070675	Organic Carbon	0.863	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 365.1 Rev. 2.0 dissolved

Run ID: A90164

Included Lab Sample IDs: 2071692, 2071695, 2071698, 2071701

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	99.6	P/P	90 - 110
O-Phosphate-P	99.6	98.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90165

Included Lab Sample IDs: 2071690, 2071693, 2071696, 2071699

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

Reference Method: SM 2120 B

Run ID: A90212

Included Lab Sample IDs: 2071690, 2071693, 2071696, 2071699

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90217

Included Lab Sample IDs: 2071691, 2071694, 2071697, 2071700

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

Reference Method: SM 5310 B-00

Run ID: A90237

Included Lab Sample IDs: 2071691, 2071694, 2071697, 2071700

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.7	97.3	P/P	90 - 110
Organic Carbon	97.3	97.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90259

Included Lab Sample IDs: 2071690, 2071693, 2071696, 2071699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	103	P/P	90 - 110
Sulfate	104	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90268

Included Lab Sample IDs: 2071691, 2071694, 2071697, 2071700

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	106	P/P	90 - 110
Kjeldahl Nitrogen	106	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90315

Included Lab Sample IDs: 2071691, 2071694, 2071697, 2071700

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90331

Included Lab Sample IDs: 2071691, 2071694, 2071697, 2071700

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

Reference Method: SM 2320 B-97

Run ID: A90337

Included Lab Sample IDs: 2071690, 2071693, 2071696, 2071699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.4	98.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90337

Included Lab Sample IDs: 2071690, 2071693, 2071696, 2071699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	104	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					1.48	
	Turbidity					6.01	
EPA 300.0 Rev. 2.1	Chloride	99.4	101	99.6		1.50	
	Sulfate	99.8	101	99.4		0.942	
EPA 350.1 Rev. 2.0	Ammonia-N	102	102	101			0.256
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	101	98.7			1.66
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	106	103	102			0.826
EPA 365.1 Rev. 2.0	Total-P	98.1	91.4	95.8			3.45
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.8	95.8	97.0			1.02
	O-Phosphate-P	104	96.0	97.4			0.908
SM 2120 B	Color (true)	105				0.288	
SM 2320 B-97	Total Alkalinity	98.4				3.79	
SM 2540 C-97	TDS					1.49	
SM 4500 F-C-97	Fluoride	100	103	104			0.484
SM 5310 B-00	Organic Carbon	99.8	99.9	101			0.863

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2071690, 2071693, 2071696, 2071699
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2071690, 2071693, 2071696, 2071699
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2071690, 2071693, 2071696, 2071699
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2071691, 2071694, 2071697, 2071700
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2071691, 2071694, 2071697, 2071700
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2071691, 2071694, 2071697, 2071700
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2071691, 2071694, 2071697, 2071700
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2071692, 2071695, 2071698, 2071701
SM 2120 B / E31780	True Color measured at 450 nm	2071690, 2071693, 2071696, 2071699
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2071690, 2071693, 2071696, 2071699
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2071690, 2071693, 2071696, 2071699
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2071690, 2071693, 2071696, 2071699
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2071690, 2071693, 2071696, 2071699
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2071691, 2071694, 2071697, 2071700

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	03/21/2019			03/21/2019 15:47	Adrian Shelby	2071690, 2071693, 2071696, 2071699
EPA 300.0 Rev. 2.1	03/21/2019			03/28/2019 00:33	Lipi Saha	2071690
	03/21/2019			03/28/2019 00:45	Lipi Saha	2071693
	03/21/2019			03/28/2019 00:57	Lipi Saha	2071696
	03/21/2019			03/28/2019 01:09	Lipi Saha	2071699
EPA 350.1 Rev. 2.0	03/21/2019			03/28/2019 11:19	Ping Hua	2071691
	03/21/2019			03/28/2019 11:20	Ping Hua	2071694
	03/21/2019			03/28/2019 11:22	Ping Hua	2071697
	03/21/2019			03/28/2019 11:29	Ping Hua	2071700
EPA 351.2 Rev. 2.0	03/21/2019	03/26/2019 12:00	Adrian Shelby	03/27/2019 12:08	Joseph Suarez	2071691
	03/21/2019	03/26/2019 12:00	Adrian Shelby	03/27/2019 12:13	Joseph Suarez	2071694
	03/21/2019	03/26/2019 12:00	Adrian Shelby	03/27/2019 12:14	Joseph Suarez	2071697
	03/21/2019	03/26/2019 12:00	Adrian Shelby	03/27/2019 12:16	Joseph Suarez	2071700
EPA 353.2 Rev. 2.0	03/21/2019			03/25/2019 11:12	Beverly Y. Sanders	2071691
	03/21/2019			03/25/2019 11:13	Beverly Y. Sanders	2071694
	03/21/2019			03/25/2019 11:14	Beverly Y. Sanders	2071697
	03/21/2019			03/25/2019 11:15	Beverly Y. Sanders	2071700
EPA 365.1 Rev. 2.0	03/21/2019	03/28/2019 13:10	Adrian Shelby	03/29/2019 13:48	Rosalyn Ballman	2071691
	03/21/2019	03/28/2019 13:10	Adrian Shelby	03/29/2019 13:49	Rosalyn Ballman	2071694
	03/21/2019	03/28/2019 13:10	Adrian Shelby	03/29/2019 13:50	Rosalyn Ballman	2071697
	03/21/2019	03/28/2019 13:10	Adrian Shelby	03/29/2019 13:51	Rosalyn Ballman	2071700
EPA 365.1 Rev. 2.0 dissolved	03/21/2019			03/21/2019 15:45	Julia Storbeck	2071701
	03/21/2019			03/21/2019 15:53	Julia Storbeck	2071692
	03/21/2019			03/21/2019 15:54	Julia Storbeck	2071698
	03/21/2019			03/21/2019 15:57	Julia Storbeck	2071695
SM 2120 B	03/21/2019			03/21/2019 16:02	Mariam Hanna	2071690, 2071693
	03/21/2019			03/21/2019 16:03	Mariam Hanna	2071696
	03/21/2019			03/21/2019 16:04	Mariam Hanna	2071699
SM 2320 B-97	03/21/2019			03/30/2019 07:01	Samantha Davila	2071690
	03/21/2019			03/30/2019 07:11	Samantha Davila	2071693
	03/21/2019			03/30/2019 07:22	Samantha Davila	2071696
	03/21/2019			03/30/2019 07:34	Samantha Davila	2071699
SM 2540 C-97	03/21/2019			03/25/2019 17:20	Mariam Hanna	2071690, 2071693, 2071696, 2071699
SM 2540 D-97	03/21/2019			03/25/2019 17:00	Mariam Hanna	2071690, 2071693, 2071696, 2071699
SM 4500 F-C-97	03/21/2019			03/30/2019 07:01	Samantha Davila	2071690
	03/21/2019			03/30/2019 07:11	Samantha Davila	2071693
	03/21/2019			03/30/2019 07:22	Samantha Davila	2071696
	03/21/2019			03/30/2019 07:34	Samantha Davila	2071699
SM 5310 B-00	03/21/2019			03/25/2019 19:10	Julia Storbeck	2071691
	03/21/2019			03/25/2019 19:46	Julia Storbeck	2071694

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	03/21/2019			03/25/2019 19:59	Julia Storbeck	2071697
	03/21/2019			03/25/2019 20:11	Julia Storbeck	2071700