

Chemical Analysis Report

WQAP-2017-01-11-02

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

Event Description: **Gainesville Lakes**
Request ID: **RQ-2017-01-09-14**
Customer: **WQAP**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 31-JAN-2017 11:17

A handwritten signature in black ink, appearing to read "Colin Wright", is written on a light-colored rectangular background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Lake Wauberg at Center

Collection Date/Time: 01/10/2017 10:50

Field ID: G1NE0114 01102017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1862938	EPA 180.1 Rev. 2.0	Turbidity	40		NTU	P318110	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P318274	
		Sulfate	0.23	I	mg SO4/L	P318402	
	SM 2120 B	Color (true)	17		PCU	P318101	
	SM 2320 B-97	Total Alkalinity	21		mg CaCO3/L	P318452	
	SM 2540 C-97	TDS	104		mg/L	P318599	
	SM 2540 D-97	TSS	60		mg/L	P318545	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P318456	
1862941	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P318210	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.2		mg N/L	P318124	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.35		mg N/L	P318558	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P318288	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P318258	
1862944	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P318084	

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: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Moon Lake Center

Collection Date/Time: 01/10/2017 12:45

Field ID: G1NE0197 01102017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1862939	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P318110	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P318274	
		Sulfate	15		mg SO4/L	P318402	
	SM 2120 B	Color (true)	35		PCU	P318101	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P318452	
	SM 2540 C-97	TDS	95		mg/L	P318599	
	SM 2540 D-97	TSS	2	I	mg/L	P318545	
	SM 4500 F-C-97	Fluoride	0.24		mg F/L	P318456	
1862942	EPA 350.1 Rev. 2.0	Ammonia-N	0.18		mg N/L	P318210	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.85		mg N/L	P318124	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.32		mg N/L	P318558	
	EPA 365.1 Rev. 2.0	Total-P	0.26		mg P/L	P318288	
	SM 5310 B-00	Organic Carbon	8.1		mg C/L	P318258	
1862945	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.24		mg P/L	P318084	

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: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Hammock Lake Center

Collection Date/Time: 01/10/2017 13:45

Field ID: G1NE0198 01102017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1862940	EPA 180.1 Rev. 2.0	Turbidity	15	A	NTU	P318111	

Field ID: G1NE0198 01102017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1862940	EPA 300.0 Rev. 2.1	Chloride	35		mg Cl/L	P318274	
		Sulfate	4.7		mg SO4/L	P318402	
	SM 2120 B	Color (true)	54		PCU	P318101	
	SM 2320 B-97	Total Alkalinity	92		mg CaCO3/L	P318452	
	SM 2540 C-97	TDS	185		mg/L	P318599	
	SM 2540 D-97	TSS	19		mg/L	P318545	
	SM 4500 F-C-97	Fluoride	0.27		mg F/L	P318456	
1862943	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P318210	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P318124	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P318558	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P318288	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P318258	
1862946	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.082		mg P/L	P318084	

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: Total-P: 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: P318110

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P318111

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P318274

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P318402

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P318210

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P318124

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P318558

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: P318288

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P318084

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

Reference Method: SM 2120 B
Batch ID: P318101

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P318452

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

Reference Method: SM 2540 C-97
Batch ID: P318599

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P318545

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P318456

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P318258

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: P318274

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P318402

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P318210

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: P318124

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: P318558

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P318288

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	92.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P318084

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

Reference Method: SM 2320 B-97
Batch ID: P318452

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
 Batch ID: P318452

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

Reference Method: SM 4500 F-C-97
 Batch ID: P318456

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.5		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P318258

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P318274

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1862694	Chloride	96.9		P	90 - 110
1862695	Chloride	96.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P318402

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1862694	Sulfate	99.4		P	90 - 110
1862695	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P318210

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1862930	Ammonia-N	100	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P318124

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1862955	Kjeldahl Nitrogen	102	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P318558

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1862700	NO2NO3-N	102	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P318084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1862801	O-Phosphate-P	97.2	98.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P318456

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1863443	Fluoride	95.9	95.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P318258

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1862502	Organic Carbon	97.6		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P318110

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1862694	Turbidity	1.10	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P318111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1862940	Turbidity	0.683	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P318274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1862694	Chloride	0.146	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P318402

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1862694	Sulfate	0.279	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P318210

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1862930	Ammonia-N	0.835	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P318124

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1862955	Kjeldahl Nitrogen	6.81	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P318558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1862700	NO2NO3-N	0.952	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P318288

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1862955	Total-P	0.0822	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P318084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1862801	O-Phosphate-P	1.44	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P318101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1862928	Color (true)	2.30	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P318452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863443	Total Alkalinity	0.401	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P318599

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863033	TDS	8.24	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P318456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1863443	Fluoride	0.530	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P318258

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1862502	Organic Carbon	0.576	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: A73869
Included Lab Sample IDs: 1862944, 1862945, 1862946

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.7	97.9	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A73880
Included Lab Sample IDs: 1862938, 1862939, 1862940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	103	P/P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A73881
Included Lab Sample IDs: 1862938, 1862939, 1862940

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A73882
Included Lab Sample IDs: 1862938, 1862939, 1862940

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A73916
Included Lab Sample IDs: 1862941, 1862942, 1862943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.4	96.8	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A73930
Included Lab Sample IDs: 1862941, 1862942, 1862943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	97.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A73940

Included Lab Sample IDs: 1862941, 1862942, 1862943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	107	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A73974

Included Lab Sample IDs: 1862941, 1862942, 1862943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A73993

Included Lab Sample IDs: 1862938, 1862939, 1862940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	93.5	98.4	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A74010

Included Lab Sample IDs: 1862938, 1862939, 1862940

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

Reference Method: SM 4500 F-C-97

Run ID: A74010

Included Lab Sample IDs: 1862938, 1862939, 1862940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74046

Included Lab Sample IDs: 1862941, 1862942, 1862943

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

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				1.10	
	Turbidity				0.683	
EPA 300.0 Rev. 2.1	Chloride	98.8	96.9	96.6	0.146	
	Sulfate	99.4	99.4	100	0.279	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 350.1 Rev. 2.0	Ammonia-N	102	100	99.0		0.835
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	102	109		6.81
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	102	101		0.952
EPA 365.1 Rev. 2.0	Total-P	92.4				0.0822
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	97.2	98.7		1.44
SM 2120 B	Color (true)				2.30	
SM 2320 B-97	Total Alkalinity	103			0.401	
SM 2540 C-97	TDS				8.24	
SM 4500 F-C-97	Fluoride	95.5	95.9	95.2		0.530
SM 5310 B-00	Organic Carbon	95.0	97.6			0.576

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1862938, 1862939, 1862940
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1862938, 1862939, 1862940
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1862938, 1862939, 1862940
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1862941, 1862942, 1862943
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1862941, 1862942, 1862943
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1862941, 1862942, 1862943
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1862941, 1862942, 1862943
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1862944, 1862945, 1862946
SM 2120 B / E31780	True Color measured at 450 nm	1862938, 1862939, 1862940
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1862938, 1862939, 1862940
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1862938, 1862939, 1862940
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1862938, 1862939, 1862940
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1862938, 1862939, 1862940
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1862941, 1862942, 1862943

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	01/11/2017			01/11/2017 15:58	Sima Feizi	1862938, 1862939, 1862940
EPA 300.0 Rev. 2.1	01/11/2017			01/14/2017	Ping Hua	1862938, 1862939, 1862940
	01/11/2017			01/19/2017	Ping Hua	1862938, 1862939, 1862940
EPA 350.1 Rev. 2.0	01/11/2017			01/12/2017	Sofia Elnemr	1862941, 1862942, 1862943
EPA 351.2 Rev. 2.0	01/11/2017	01/12/2017	Adrian Shelby	01/17/2017	Joseph Suarez	1862941, 1862942, 1862943
EPA 353.2 Rev. 2.0	01/11/2017			01/23/2017	Beverly Y. Sanders	1862941, 1862942, 1862943
EPA 365.1 Rev. 2.0	01/11/2017	01/17/2017	Vijayalakshmi Reddy	01/18/2017	Lipi Saha	1862941, 1862942, 1862943
EPA 365.1 Rev. 2.0 dissolved	01/11/2017			01/11/2017 12:24	Julia Storbeck	1862944
	01/11/2017			01/11/2017 12:25	Julia Storbeck	1862945
	01/11/2017			01/11/2017 12:26	Julia Storbeck	1862946
SM 2120 B	01/11/2017			01/11/2017 15:02	Jared I. Manley	1862938
	01/11/2017			01/11/2017 15:03	Jared I. Manley	1862939
	01/11/2017			01/11/2017 15:04	Jared I. Manley	1862940
SM 2320 B-97	01/11/2017			01/19/2017	Dale L. Simmons	1862938, 1862939, 1862940
SM 2540 C-97	01/11/2017			01/13/2017	Yijie Li	1862938, 1862939, 1862940
SM 2540 D-97	01/11/2017			01/13/2017	Yijie Li	1862938, 1862939, 1862940
SM 4500 F-C-97	01/11/2017			01/19/2017	Dale L. Simmons	1862938, 1862939, 1862940
SM 5310 B-00	01/11/2017			01/13/2017	Julie Michelle Frank	1862941, 1862942, 1862943