

Chemical Analysis Report

NW-DIST-2019-10-11-01

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

Event Description: **Western Lakes**
Request ID: **RQ-2019-10-07-69**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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160 Government Center
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Certified by: Colin Wright, Program Administrator

Date Certified: 28-OCT-2019 10:45

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed 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 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 STONE CENTER

Collection Date/Time: 10/10/2019 10:50

Field ID: G4NW0426

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2127427	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P372376	
	EPA 300.0 Rev. 2.1	Chloride	3.1		mg Cl/L	P372762	
		Sulfate	1.2		mg SO4/L	P372766	
	SM 2120 B	Color (true)	9.4		PCU	P372533	
	SM 2320 B-97	Total Alkalinity	18		mg CaCO3/L	P372876	
	SM 2540 C-97	TDS	37		mg/L	P372900	
	SM 2540 D-97	TSS	4	I	mg/L	P372871	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P372880	
2127430	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P372774	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P372392	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P372728	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P372474	
	SM 5310 B-00	Organic Carbon	6.6		mg C/L	P372777	
2127433	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P372368	

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 Karick (Center) (also 33040210)

Collection Date/Time: 10/10/2019 12:30

Field ID: G4NW0274

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2127428	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P372376	
	EPA 300.0 Rev. 2.1	Chloride	2.7		mg Cl/L	P372762	
		Sulfate	0.48	I	mg SO4/L	P372766	
	SM 2120 B	Color (true)	19		PCU	P372533	
	SM 2320 B-97	Total Alkalinity	9.5		mg CaCO3/L	P372876	
	SM 2540 C-97	TDS	29		mg/L	P372900	
	SM 2540 D-97	TSS	2	I	mg/L	P372871	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P372880	
2127431	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P372774	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39		mg N/L	P372398	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P372729	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P372474	
	SM 5310 B-00	Organic Carbon	4.8		mg C/L	P372777	
2127434	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P372368	

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: LOCKLIN LAKE CENTER

Collection Date/Time: 10/10/2019 14:25

Field ID: G4NW0437

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2127429	EPA 180.1 Rev. 2.0	Turbidity	0.70		NTU	P372376	
	EPA 300.0 Rev. 2.1	Chloride	6.1		mg Cl/L	P372762	
		Sulfate	1.2		mg SO4/L	P372766	
	SM 2120 B	Color (true)	9.4		PCU	P372534	
	SM 2320 B-97	Total Alkalinity	9.1		mg CaCO3/L	P372876	
	SM 2540 C-97	TDS	22	I	mg/L	P372900	
	SM 2540 D-97	TSS	2	I	mg/L	P372871	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P372880	
2127432	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P372774	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21		mg N/L	P372398	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.35		mg N/L	P372729	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P372474	
	SM 5310 B-00	Organic Carbon	1.6		mg C/L	P372777	
2127435	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P372369	

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: P372376

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372762

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372766

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372774

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372392

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372398

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372728

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372729

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: P372474

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372368

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372369

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

Reference Method: SM 2120 B
Batch ID: P372533

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P372534

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P372876

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

Reference Method: SM 2540 C-97
Batch ID: P372900

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P372871

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P372880

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P372777

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: P372762

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372766

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372774

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372392

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372398

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372728

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372729

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372474

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372368

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372369

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

Reference Method: SM 2120 B
Batch ID: P372533

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.9		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P372534

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.9		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P372876

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P372880

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P372777

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	102		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372762

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127425	Chloride	100		P	90 - 110
2127770	Chloride	99.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127425	Sulfate	102		P	90 - 110
2127770	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372774

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127432	Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372392

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127426	Kjeldahl Nitrogen	96.3	97.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372398

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127432	Kjeldahl Nitrogen	98.7	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372728

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127325	NO2NO3-N	99.4	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372729

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127431	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372474

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127426	Total-P	97.1	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372368

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127433	O-Phosphate-P	97.9	99.7	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127435	O-Phosphate-P	98.2	99.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P372880

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2129055	Fluoride	102	102	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P372777

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127328	Organic Carbon	101	96.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P372376

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127389	Turbidity	6.33	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372762

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127425	Chloride	0.323	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127425	Sulfate	0.660	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372774

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127432	Ammonia-N	0.603	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127426	Kjeldahl Nitrogen	0.719	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372398

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127432	Kjeldahl Nitrogen	2.88	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372728

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127325	NO2NO3-N	0.730	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372729

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127431	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127426	Total-P	1.27	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372368

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127433	O-Phosphate-P	1.82	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127435	O-Phosphate-P	1.01	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P372533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127259	Color (true)	3.35	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P372534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127566	Color (true)	1.76	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P372876

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2129055	Total Alkalinity	0.541	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P372900

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127425	TDS	6.22	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P372880

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2129055	Fluoride	0.0	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P372777

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127328	Organic Carbon	3.23	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A94905

Included Lab Sample IDs: 2127433, 2127434, 2127435

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	98.7	P/P	90 - 110
O-Phosphate-P	99.1	99.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A94921

Included Lab Sample IDs: 2127427, 2127428, 2127429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.5	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A94980

Included Lab Sample IDs: 2127427, 2127428, 2127429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	98.8	P/P	90 - 115
Color (true)	98.8	101	P/P	90 - 115

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94982

Included Lab Sample IDs: 2127430, 2127431, 2127432

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	102	P/P	90 - 110
Kjeldahl Nitrogen	103	103	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A95003

Included Lab Sample IDs: 2127427, 2127428, 2127429

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95026

Included Lab Sample IDs: 2127430, 2127431, 2127432

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95031

Included Lab Sample IDs: 2127430, 2127431, 2127432

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95080

Included Lab Sample IDs: 2127430, 2127431, 2127432

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	100	P/P	90 - 110
Ammonia-N	99.5	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A95081

Included Lab Sample IDs: 2127430, 2127431, 2127432

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	104	104	P/P	90 - 110
Organic Carbon	95.8	94.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A95130

Included Lab Sample IDs: 2127427, 2127428, 2127429

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

Reference Method: SM 4500 F-C-97

Run ID: A95130

Included Lab Sample IDs: 2127427, 2127428, 2127429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	99.0	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					6.33	
EPA 300.0 Rev. 2.1	Chloride	102	100	99.4		0.323	
	Sulfate	102	102	103		0.660	
EPA 350.1 Rev. 2.0	Ammonia-N	99.6	101	100			0.603
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.9	96.3	97.3			0.719
	Kjeldahl Nitrogen	98.8	98.7	102			2.88
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	99.4	100			0.730
	NO2NO3-N	100	100	100			0.0
EPA 365.1 Rev. 2.0	Total-P	98.2	97.1	95.8			1.27
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.1	97.9	99.7			1.82
	O-Phosphate-P	100	98.2	99.2			1.01
SM 2120 B	Color (true)	98.9				3.35	
	Color (true)	99.9				1.76	
SM 2320 B-97	Total Alkalinity	104				0.541	
SM 2540 C-97	TDS					6.22	
SM 4500 F-C-97	Fluoride	94.8	102	102			0.0
SM 5310 B-00	Organic Carbon	102	101	96.0			3.23

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2127427, 2127428, 2127429
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2127427, 2127428, 2127429
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2127427, 2127428, 2127429
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2127430, 2127431, 2127432
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2127430, 2127431, 2127432
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2127430, 2127431, 2127432
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2127430, 2127431, 2127432
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2127433, 2127434, 2127435
SM 2120 B / E31780	True Color measured at 450 nm	2127427, 2127428, 2127429
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2127427, 2127428, 2127429
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2127427, 2127428, 2127429
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2127427, 2127428, 2127429
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2127427, 2127428, 2127429
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2127430, 2127431, 2127432

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	10/11/2019			10/11/2019 15:36	Blanca Fach	2127427, 2127428, 2127429
EPA 300.0 Rev. 2.1	10/11/2019			10/17/2019 16:21	Jhamieka S. Greenwood	2127427
	10/11/2019			10/17/2019 16:33	Jhamieka S. Greenwood	2127428
	10/11/2019			10/17/2019 16:45	Jhamieka S. Greenwood	2127429
EPA 350.1 Rev. 2.0	10/11/2019			10/18/2019 13:13	Ping Hua	2127432
	10/11/2019			10/18/2019 13:29	Ping Hua	2127430
	10/11/2019			10/18/2019 13:31	Ping Hua	2127431
EPA 351.2 Rev. 2.0	10/11/2019	10/14/2019 13:01	Sima Feizi	10/15/2019 18:08	Jhamieka S. Greenwood	2127430
	10/11/2019	10/14/2019 13:01	Sima Feizi	10/15/2019 18:41	Jhamieka S. Greenwood	2127432
	10/11/2019	10/14/2019 13:01	Sima Feizi	10/15/2019 18:46	Jhamieka S. Greenwood	2127431
EPA 353.2 Rev. 2.0	10/11/2019			10/17/2019 10:50	Beverly Y. Sanders	2127430
	10/11/2019			10/17/2019 10:57	Beverly Y. Sanders	2127431
	10/11/2019			10/17/2019 11:02	Beverly Y. Sanders	2127432
EPA 365.1 Rev. 2.0	10/11/2019	10/15/2019 13:09	Lipi Saha	10/16/2019 15:46	Rosalyn Ballman	2127430
	10/11/2019	10/15/2019 13:09	Lipi Saha	10/16/2019 15:47	Rosalyn Ballman	2127431
	10/11/2019	10/15/2019 13:09	Lipi Saha	10/16/2019 15:48	Rosalyn Ballman	2127432
EPA 365.1 Rev. 2.0 dissolved	10/11/2019			10/11/2019 15:35	Jhamieka S. Greenwood	2127433
	10/11/2019			10/11/2019 15:39	Jhamieka S. Greenwood	2127435
	10/11/2019			10/11/2019 16:07	Jhamieka S. Greenwood	2127434
SM 2120 B	10/11/2019			10/11/2019 17:10	Madeline Funaro	2127427
	10/11/2019			10/11/2019 17:11	Madeline Funaro	2127428
	10/11/2019			10/11/2019 17:15	Madeline Funaro	2127429
SM 2320 B-97	10/11/2019			10/19/2019 04:58	Dale L. Simmons	2127427
	10/11/2019			10/19/2019 05:10	Dale L. Simmons	2127428
	10/11/2019			10/19/2019 05:23	Dale L. Simmons	2127429
SM 2540 C-97	10/11/2019			10/16/2019 13:25	Yijie Li	2127427, 2127428, 2127429
SM 2540 D-97	10/11/2019			10/16/2019 13:25	Yijie Li	2127427, 2127428, 2127429
SM 4500 F-C-97	10/11/2019			10/19/2019 04:58	Dale L. Simmons	2127427
	10/11/2019			10/19/2019 05:10	Dale L. Simmons	2127428
	10/11/2019			10/19/2019 05:23	Dale L. Simmons	2127429
SM 5310 B-00	10/11/2019			10/17/2019 20:32	Madeline Funaro	2127430
	10/11/2019			10/18/2019 00:41	Madeline Funaro	2127431
	10/11/2019			10/18/2019 00:54	Madeline Funaro	2127432