Chemical Analysis Report

NW-DIST-2019-01-08-01

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

Event Description: **Eglin Run West**
Request ID: **RQ-2019-01-07-33**
Customer: **NW-DIST**
Project ID: **SMP**

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160 Government Center
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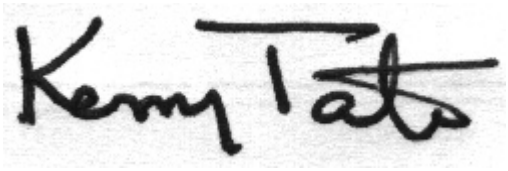
Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 28-JAN-2019 13:16



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: Toms Creek upstream of Hwy 85 **Collection Date/Time: 01/07/2019 11:25**

Field ID: G3NW0150 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2052076	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P356981	
	EPA 300.0 Rev. 2.1	Chloride	2.6		mg Cl/L	P356992	
		Sulfate	1.3		mg SO4/L	P356994	
	SM 2120 B	Color (true)	18		PCU	P356963	
	SM 2320 B-97	Total Alkalinity	3.3		mg CaCO3/L	P357388	
	SM 2540 C-97	TDS	15	U	mg/L	P357441	
	SM 2540 D-97	TSS	2	I	mg/L	P357569	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P357521	
2052080	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P357122	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	I	mg N/L	P357431	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P357003	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P357023	
	SM 5310 B-00	Organic Carbon	1.5		mg C/L	P357192	
2052084	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P356962	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Mill Creek upstream of Bayshore Dr **Collection Date/Time: 01/07/2019 11:45**

Field ID: G3NW0141 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2052077	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P356981	
	EPA 300.0 Rev. 2.1	Chloride	4.7		mg Cl/L	P356992	
		Sulfate	5.6		mg SO4/L	P356994	
	SM 2120 B	Color (true)	28		PCU	P356963	
	SM 2320 B-97	Total Alkalinity	15		mg CaCO3/L	P357388	
	SM 2540 C-97	TDS	32		mg/L	P357441	
	SM 2540 D-97	TSS	3	I	mg/L	P357569	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P357521	
2052081	EPA 350.1 Rev. 2.0	Ammonia-N	0.043		mg N/L	P357123	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P357431	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.37		mg N/L	P357003	
	EPA 365.1 Rev. 2.0	Total-P	0.01		mg P/L	P357023	
	SM 5310 B-00	Organic Carbon	3.2		mg C/L	P357192	
2052085	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P356962	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Gap Creek powerline South of Overbrook Drive Collection Date/Time: 01/07/2019 12:25

Field ID: G3NW0142 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2052078	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P356981	
	EPA 300.0 Rev. 2.1	Chloride	9.8		mg Cl/L	P356992	
		Sulfate	3.1		mg SO4/L	P356994	
	SM 2120 B	Color (true)	120	A	PCU	P356963	
	SM 2320 B-97	Total Alkalinity	21		mg CaCO3/L	P357388	
	SM 2540 C-97	TDS	64		mg/L	P357441	
	SM 2540 D-97	TSS	5	I	mg/L	P357569	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P357521	
2052082	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P357123	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P357128	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.068		mg N/L	P357003	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P357023	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P357192	
2052086	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P356962	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Direct Runnoff to Choctawhatchee Bay below Oregon Drive **Collection Date/Time: 01/07/2019 12:50**

Field ID: G3NW0001 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2052079	EPA 180.1 Rev. 2.0	Turbidity	8.1	A	NTU	P356981	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P356992	
		Sulfate	7.1		mg SO4/L	P356994	
	SM 2120 B	Color (true)	74		PCU	P356963	
	SM 2320 B-97	Total Alkalinity	55		mg CaCO3/L	P357388	
	SM 2540 C-97	TDS	100	A	mg/L	P357441	
	SM 2540 D-97	TSS	3	IA	mg/L	P357569	
	SM 4500 F-C-97	Fluoride	0.061	I	mg F/L	P357521	
2052083	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P357123	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37		mg N/L	P357431	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P357004	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P357023	
	SM 5310 B-00	Organic Carbon	8.0		mg C/L	P357192	
2052087	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.018		mg P/L	P356962	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P356981

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P356992

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P356994

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357122

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357123

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357128

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357431

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357003

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357004

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357023

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356962

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

Reference Method: SM 2120 B
Batch ID: P356963

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P357388

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P357441

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P357569

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P357521

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P357192

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: P356992

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: P356994

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357122

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357123

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357128

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	108		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357431

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: P357003

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357004

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357023

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356962

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.5		P	90 - 110

Reference Method: SM 2120 B
Batch ID: P356963

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P357388

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

Reference Method: SM 4500 F-C-97
Batch ID: P357521

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P357192

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.3		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P356992

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2052020	Chloride	98.5		P	90 - 110
2052100	Chloride	97.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P356994

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2052020	Sulfate	93.8		P	90 - 110
2052100	Sulfate	97.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357122

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2052080	Ammonia-N	97.5	97.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357123

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2052081	Ammonia-N	101	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357128

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2052083	Kjeldahl Nitrogen	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357431

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2052081	Kjeldahl Nitrogen	107	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357003

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2052015	NO2NO3-N	97.5	97.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357004

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2052083	NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357023

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2052118	Total-P	101	102	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356962

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2052084	O-Phosphate-P	97.3	98.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P357521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2052977	Fluoride	98.1	99.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P357192

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2051832	Organic Carbon	97.4		P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P356981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2052079	Turbidity	0.737	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P356992

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2052020	Chloride	0.341	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2052080	Ammonia-N	0.172	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357123

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2052081	Ammonia-N	0.465	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2052083	Kjeldahl Nitrogen	1.58	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357431

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2052081	Kjeldahl Nitrogen	0.997	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357003

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2052015	NO2NO3-N	0.265	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2052083	NO2NO3-N	0.245	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357023

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2052118	Total-P	1.28	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2052084	O-Phosphate-P	1.33	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P356963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2052078	Color (true)	0.251	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P357388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2052977	Total Alkalinity	0.539	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P357441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2052079	TDS	2.00	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P357521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2052977	Fluoride	0.968	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P357192

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2051832	Organic Carbon	0.518	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 300.0 Rev. 2.1
Run ID: A88626
Included Lab Sample IDs: 2052076, 2052077, 2052078, 2052079

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A88703
Included Lab Sample IDs: 2052084, 2052085, 2052086, 2052087

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.8	P/P	90 - 110
O-Phosphate-P	98.0	98.3	P/P	90 - 110
O-Phosphate-P	98.3	98.2	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A88704
Included Lab Sample IDs: 2052076, 2052077, 2052078, 2052079

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.8	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A88710
Included Lab Sample IDs: 2052076, 2052077, 2052078, 2052079

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A88716
Included Lab Sample IDs: 2052080, 2052081, 2052082, 2052083

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.0	P/P	90 - 110
NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A88760
Included Lab Sample IDs: 2052080, 2052081, 2052082, 2052083

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.0	P/P	90 - 110
Ammonia-N	99.7	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A88769
Included Lab Sample IDs: 2052080, 2052081, 2052082, 2052083

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

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A88785
Included Lab Sample IDs: 2052080, 2052081, 2052082, 2052083

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.9	95.6	P/P	90 - 110
Organic Carbon	95.6	96.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A88815
Included Lab Sample IDs: 2052082

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	97.6	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A88858
Included Lab Sample IDs: 2052076, 2052077, 2052078, 2052079

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

Reference Method: SM 4500 F-C-97
Run ID: A88903
Included Lab Sample IDs: 2052076, 2052077, 2052078, 2052079

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	99.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A88908
Included Lab Sample IDs: 2052080, 2052081, 2052083

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	104	P/P	90 - 110
Kjeldahl Nitrogen	104	105	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		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					0.737	
EPA 300.0 Rev. 2.1	Chloride	99.4	98.5	97.6		0.341	
	Sulfate	97.4	93.8	97.0			
EPA 350.1 Rev. 2.0	Ammonia-N	97.2	97.5	97.7			0.172
	Ammonia-N	97.9	101	99.9			0.465
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	103	101			1.58
	Kjeldahl Nitrogen	102	107	108			0.997
EPA 353.2 Rev. 2.0	NO2NO3-N	100	97.5	97.0			0.265
	NO2NO3-N	99.5	99.0				0.245
EPA 365.1 Rev. 2.0	Total-P	101	101	102			1.28
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.5	97.3	98.6			1.33
SM 2120 B	Color (true)	101				0.251	
SM 2320 B-97	Total Alkalinity	102				0.539	
SM 2540 C-97	TDS					2.00	
SM 4500 F-C-97	Fluoride	94.9	98.1	99.2			0.968
SM 5310 B-00	Organic Carbon	96.3	97.4				0.518

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2052076, 2052077, 2052078, 2052079
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2052076, 2052077, 2052078, 2052079
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2052076, 2052077, 2052078, 2052079
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2052080, 2052081, 2052082, 2052083
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2052080, 2052081, 2052082, 2052083
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2052080, 2052081, 2052082, 2052083
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2052080, 2052081, 2052082, 2052083
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2052084, 2052085, 2052086, 2052087
SM 2120 B / E31780	True Color measured at 450 nm	2052076, 2052077, 2052078, 2052079
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2052076, 2052077, 2052078, 2052079
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2052076, 2052077, 2052078, 2052079
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2052076, 2052077, 2052078, 2052079
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2052076, 2052077, 2052078, 2052079
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2052080, 2052081, 2052082, 2052083

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	01/08/2019			01/08/2019 17:18	Megan Treadwell	2052076, 2052077, 2052078, 2052079
EPA 300.0 Rev. 2.1	01/08/2019			01/08/2019 18:40	Lipi Saha	2052076
	01/08/2019			01/08/2019 18:52	Lipi Saha	2052077
	01/08/2019			01/08/2019 19:04	Lipi Saha	2052078
	01/08/2019			01/08/2019 19:16	Lipi Saha	2052079
EPA 350.1 Rev. 2.0	01/08/2019			01/10/2019 11:59	Ping Hua	2052080
	01/08/2019			01/10/2019 12:32	Ping Hua	2052081
	01/08/2019			01/10/2019 12:37	Ping Hua	2052082
	01/08/2019			01/10/2019 12:38	Ping Hua	2052083
EPA 351.2 Rev. 2.0	01/08/2019	01/11/2019 10:45	Adrian Shelby	01/15/2019 13:22	Joseph Suarez	2052082
	01/08/2019	01/17/2019 11:30	Adrian Shelby	01/18/2019 13:35	Joseph Suarez	2052080
	01/08/2019	01/17/2019 11:30	Adrian Shelby	01/18/2019 13:37	Joseph Suarez	2052081
	01/08/2019	01/17/2019 11:30	Adrian Shelby	01/18/2019 13:44	Joseph Suarez	2052083
EPA 353.2 Rev. 2.0	01/08/2019			01/09/2019 09:57	Beverly Y. Sanders	2052080
	01/08/2019			01/09/2019 09:58	Beverly Y. Sanders	2052081
	01/08/2019			01/09/2019 09:59	Beverly Y. Sanders	2052082
	01/08/2019			01/09/2019 10:06	Beverly Y. Sanders	2052083
EPA 365.1 Rev. 2.0	01/08/2019	01/09/2019 12:35	Sima Feizi	01/11/2019 13:05	Rosalyn Ballman	2052080
	01/08/2019	01/09/2019 12:35	Sima Feizi	01/11/2019 13:06	Rosalyn Ballman	2052081
	01/08/2019	01/09/2019 12:35	Sima Feizi	01/11/2019 13:07	Rosalyn Ballman	2052082
	01/08/2019	01/09/2019 12:35	Sima Feizi	01/11/2019 13:08	Rosalyn Ballman	2052083
EPA 365.1 Rev. 2.0 dissolved	01/08/2019			01/08/2019 15:14	Jhamieka S. Greenwood	2052084
	01/08/2019			01/08/2019 15:59	Jhamieka S. Greenwood	2052086
	01/08/2019			01/08/2019 16:05	Jhamieka S. Greenwood	2052085
	01/08/2019			01/08/2019 16:06	Jhamieka S. Greenwood	2052087
SM 2120 B	01/08/2019			01/08/2019 15:32	Chelsea Hernandez	2052076
	01/08/2019			01/08/2019 15:33	Chelsea Hernandez	2052077
	01/08/2019			01/08/2019 15:35	Chelsea Hernandez	2052078, 2052079
SM 2320 B-97	01/08/2019			01/16/2019 05:48	Dale L. Simmons	2052076
	01/08/2019			01/16/2019 06:03	Dale L. Simmons	2052077
	01/08/2019			01/16/2019 06:17	Dale L. Simmons	2052078
	01/08/2019			01/16/2019 06:33	Dale L. Simmons	2052079
SM 2540 C-97	01/08/2019			01/10/2019 14:35	Yijie Li	2052076, 2052077, 2052078, 2052079
SM 2540 D-97	01/08/2019			01/10/2019 14:35	Yijie Li	2052076, 2052077, 2052078, 2052079
SM 4500 F-C-97	01/08/2019			01/17/2019 21:11	Dale L. Simmons	2052076
	01/08/2019			01/17/2019 21:18	Dale L. Simmons	2052077
	01/08/2019			01/17/2019 21:26	Dale L. Simmons	2052078
	01/08/2019			01/17/2019 21:34	Dale L. Simmons	2052079
SM 5310 B-00	01/08/2019			01/11/2019 09:33	Megan Treadwell	2052080
	01/08/2019			01/11/2019 10:13	Megan Treadwell	2052081

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	01/08/2019			01/11/2019 10:26	Megan Treadwell	2052082
	01/08/2019			01/11/2019 10:40	Megan Treadwell	2052083