

Chemical Analysis Report

NW-DIST-2018-06-26-01

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

Event Description: **South SR County Run**

Request ID: **RQ-2018-06-25-10**

Customer: **NW-DIST**

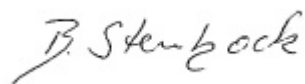
Project ID: **SMP**

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Date Certified: 16-JUL-2018 17:19



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: TOM KING CREEK

Collection Date/Time: 06/25/2018 10:25

Field ID: G4NW0193

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2003137	EPA 180.1 Rev. 2.0	Turbidity	0.55		NTU	P347533	
	EPA 300.0 Rev. 2.1	Chloride	27		mg Cl/L	P347643	
		Sulfate	9.6		mg SO4/L	P347644	
	SM 2120 B	Color (true)	42	A	PCU	P347513	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P347844	
	SM 2540 C-97	TDS	72		mg/L	P347908	
	SM 2540 D-97	TSS	3	I	mg/L	P347903	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P347848	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P347939	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29		mg N/L	P348024	
2003141	EPA 353.2 Rev. 2.0	NO2NO3-N	1.0		mg N/L	P347682	
	EPA 365.1 Rev. 2.0	Total-P	0.022	J	mg P/L	P347716	MS
	SM 5310 B-00	Organic Carbon	3.8		mg C/L	P347985	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.012		mg P/L	P347566	
2003145	EPA 365.1 Rev. 2.0 dissolved						

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.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Refer to the narrative for an explanation of QC Codes.

Sample Location: Dean Creek upstream of SR 87

Collection Date/Time: 06/25/2018 10:50

Field ID: G4NW0362

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2003138	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P347533	
	EPA 300.0 Rev. 2.1	Chloride	3.9		mg Cl/L	P347643	
		Sulfate	1.2		mg SO4/L	P347644	
	SM 2120 B	Color (true)	17		PCU	P347513	
	SM 2320 B-97	Total Alkalinity	1.0	I	mg CaCO3/L	P347844	
	SM 2540 C-97	TDS	15	U	mg/L	P347908	
	SM 2540 D-97	TSS	2	I	mg/L	P347903	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P347848	
2003142	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P347939	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P348024	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P347682	
	EPA 365.1 Rev. 2.0	Total-P	0.002	I	mg P/L	P347716	MS
	SM 5310 B-00	Organic Carbon	1.3		mg C/L	P347985	
2003146	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P347566	

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.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Boiling Creek at Boat Launch

Collection Date/Time: 06/25/2018 11:25

Field ID: G4NW0385

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2003139	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P347533	
	EPA 300.0 Rev. 2.1	Chloride	3.0		mg Cl/L	P347643	
		Sulfate	0.50		mg SO4/L	P347644	
	SM 2120 B	Color (true)	23		PCU	P347513	
	SM 2320 B-97	Total Alkalinity	1.0	I	mg CaCO3/L	P347844	
	SM 2540 C-97	TDS	15	U	mg/L	P347908	
	SM 2540 D-97	TSS	3	I	mg/L	P347903	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P347848	
2003143	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P347939	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.17	I	mg N/L	P348024	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.057		mg N/L	P347682	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P347716	MS
	SM 5310 B-00	Organic Carbon	2.2		mg C/L	P347985	
2003147	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P347566	

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.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Sandy Point Creek below Sandy Point Street Collection Date/Time: 06/25/2018 12:15

Field ID: G4NW0080

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2003140	EPA 180.1 Rev. 2.0	Turbidity	5.5		NTU	P347533	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P347643	
		Sulfate	0.83		mg SO4/L	P347644	
	SM 2120 B	Color (true)	540		PCU	P347513	
	SM 2320 B-97	Total Alkalinity	13		mg CaCO3/L	P347844	
	SM 2540 C-97	TDS	80		mg/L	P347909	
	SM 2540 D-97	TSS	18	I	mg/L	P347904	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P347848	
2003144	EPA 350.1 Rev. 2.0	Ammonia-N	0.38		mg N/L	P347939	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P348024	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P347682	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P347716	MS
	SM 5310 B-00	Organic Carbon	34		mg C/L	P347985	
2003148	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P347566	

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. The PQL was elevated due to sample matrix interference.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Jakes Bayou upstream of Robinson Point Rd Collection Date/Time: 06/25/2018 12:35

Field ID: G4NW0394

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2003149	EPA 180.1 Rev. 2.0	Turbidity	5.5	A	NTU	P347534	
	SM 2320 B-97	Total Alkalinity	9.9		mg CaCO3/L	P347844	
	SM 2540 D-97	TSS	3	I	mg/L	P347906	
	SM 4500 F-C-97	Fluoride	0.056	I	mg F/L	P347848	
2003150	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P347943	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P348024	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P347682	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P347715	
	SM 5310 B-00	Organic Carbon	9.5		mg C/L	P347985	
2003151	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P347566	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: 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: P347533

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347534

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347643

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347644

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347939

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347943

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348024

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347682

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347715

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
Batch ID: P347716

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347566

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

Reference Method: SM 2120 B
Batch ID: P347513

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P347844

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

Reference Method: SM 2540 C-97
Batch ID: P347908

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P347909

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P347903

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P347904

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P347906

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P347848

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P347985

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: P347643

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	95.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347644

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347939

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347943

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348024

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347682

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: P347715

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347716

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	92.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347566

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P347513

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

Reference Method: SM 2320 B-97
Batch ID: P347844

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P347848

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P347985

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347643

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003101	Chloride	96.6		P	90 - 110
2003159	Chloride	106		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003101	Sulfate	99.6		P	90 - 110
2003159	Sulfate	106		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347939

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003121	Ammonia-N	97.1	99.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003164	Ammonia-N	104	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347682

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003540	NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003150	Total-P	93.1	94.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347716

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003141	Total-P	87.9	90.3	F/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347566

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003107	O-Phosphate-P	98.6	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P347848

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002800	Fluoride	97.7	98.2	P/P	91 - 105

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P347985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002957	Organic Carbon	107		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003101	Turbidity	10.3	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003149	Turbidity	8.23	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003101	Chloride	2.70	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347939

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003121	Ammonia-N	2.11	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003164	Ammonia-N	1.07	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348024

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003104	Kjeldahl Nitrogen	0.00319	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347682

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003540	NO2NO3-N	1.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003150	Total-P	1.19	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003141	Total-P	2.57	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347566

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003107	O-Phosphate-P	1.31	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P347513

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003137	Color (true)	3.02	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P347844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002800	Total Alkalinity	0.238	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P347908

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003280	TDS	3.68	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P347909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003429	TDS	3.49	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P347848

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002800	Fluoride	0.472	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P347985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002957	Organic Carbon	0.929	Spike	P	0 - 20

Quality Assurance Report

Precision

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A84843

Included Lab Sample IDs: 2003137, 2003138, 2003139, 2003140

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	102	P/P	90 - 115
Color (true)	99.7	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A84846

Included Lab Sample IDs: 2003137, 2003138, 2003139, 2003140, 2003149

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	98.5	P/P	95 - 105
Turbidity	99.0	99.0	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A84847

Included Lab Sample IDs: 2003137, 2003138, 2003139, 2003140

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	92.9	97.9	P/P	90 - 110
Chloride	97.9	96.6	P/P	90 - 110
Sulfate	100	99.2	P/P	90 - 110
Sulfate	95.9	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A84855

Included Lab Sample IDs: 2003145, 2003146, 2003147, 2003148, 2003151

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.3	P/P	90 - 110
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84911

Included Lab Sample IDs: 2003141, 2003142, 2003143, 2003144, 2003150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A84969

Included Lab Sample IDs: 2003137, 2003138, 2003139, 2003140, 2003149

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

Reference Method: SM 4500 F-C-97

Run ID: A84969

Included Lab Sample IDs: 2003137, 2003138, 2003139, 2003140, 2003149

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A84969

Included Lab Sample IDs: 2003137, 2003138, 2003139, 2003140, 2003149

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84978

Included Lab Sample IDs: 2003141, 2003142, 2003143, 2003144, 2003150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	98.5	P/P	90 - 110
Total-P	98.2	97.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A85013

Included Lab Sample IDs: 2003141, 2003142, 2003143, 2003144, 2003150

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

Reference Method: SM 5310 B-00

Run ID: A85034

Included Lab Sample IDs: 2003141, 2003142, 2003143, 2003144, 2003150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A85090

Included Lab Sample IDs: 2003141, 2003142, 2003143, 2003144, 2003150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.4	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					10.3	
	Turbidity					8.23	
EPA 300.0 Rev. 2.1	Chloride	95.0	96.6	106		2.70	
	Sulfate	98.3	99.6	106			
EPA 350.1 Rev. 2.0	Ammonia-N	96.2	97.1	99.3			2.11
	Ammonia-N	101	104	105			1.07
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105					0.0031
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	99.5	100			1.00
EPA 365.1 Rev. 2.0	Total-P	96.8	93.1	94.3			1.19
	Total-P	92.0	87.9	90.3			2.57
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	98.6	100			1.31
SM 2120 B	Color (true)	100				3.02	
SM 2320 B-97	Total Alkalinity	104				0.238	
SM 2540 C-97	TDS					3.68	
	TDS					3.49	
SM 4500 F-C-97	Fluoride	98.8	97.7	98.2			0.472
SM 5310 B-00	Organic Carbon	93.0	107				0.929

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2003137, 2003138, 2003139, 2003140, 2003149
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2003137, 2003138, 2003139, 2003140
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2003137, 2003138, 2003139, 2003140
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2003141, 2003142, 2003143, 2003144, 2003150
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2003141, 2003142, 2003143, 2003144, 2003150
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2003141, 2003142, 2003143, 2003144, 2003150
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2003141, 2003142, 2003143, 2003144, 2003150
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2003145, 2003146, 2003147, 2003148, 2003151
SM 2120 B / E31780	True Color measured at 450 nm	2003137, 2003138, 2003139, 2003140
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2003137, 2003138, 2003139, 2003140, 2003149
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2003137, 2003138, 2003139, 2003140
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2003137, 2003138, 2003139, 2003140, 2003149
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2003137, 2003138, 2003139, 2003140, 2003149
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2003141, 2003142, 2003143, 2003144, 2003150

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	06/26/2018			06/26/2018 16:09	William L. Brown IV	2003137, 2003138, 2003139, 2003140, 2003149
EPA 300.0 Rev. 2.1	06/26/2018			06/27/2018 15:37	Lipi Saha	2003137
	06/26/2018			06/27/2018 16:13	Lipi Saha	2003138
	06/26/2018			06/27/2018 16:25	Lipi Saha	2003139
	06/26/2018			06/27/2018 16:37	Lipi Saha	2003140
EPA 350.1 Rev. 2.0	06/26/2018			07/03/2018 13:26	Julia Storbeck	2003141
	06/26/2018			07/03/2018 13:28	Julia Storbeck	2003142
	06/26/2018			07/03/2018 13:29	Julia Storbeck	2003143
	06/26/2018			07/03/2018 15:41	Julia Storbeck	2003144
	06/26/2018			07/03/2018 15:58	Julia Storbeck	2003150
EPA 351.2 Rev. 2.0	06/26/2018	07/06/2018 14:45	Adrian Shelby	07/09/2018 14:01	Joseph Suarez	2003141
	06/26/2018	07/06/2018 14:45	Adrian Shelby	07/09/2018 14:03	Joseph Suarez	2003142
	06/26/2018	07/06/2018 14:45	Adrian Shelby	07/09/2018 14:04	Joseph Suarez	2003143
	06/26/2018	07/06/2018 14:45	Adrian Shelby	07/09/2018 14:06	Joseph Suarez	2003144
	06/26/2018	07/06/2018 14:45	Adrian Shelby	07/09/2018 14:07	Joseph Suarez	2003150
EPA 353.2 Rev. 2.0	06/26/2018			06/28/2018 12:16	Lauren Bottorf	2003141
	06/26/2018			06/28/2018 12:17	Lauren Bottorf	2003142
	06/26/2018			06/28/2018 12:19	Lauren Bottorf	2003143
	06/26/2018			06/28/2018 12:20	Lauren Bottorf	2003144
	06/26/2018			06/28/2018 12:21	Lauren Bottorf	2003150
EPA 365.1 Rev. 2.0	06/26/2018	06/28/2018 11:45	Sima Feizi	07/02/2018 17:30	Beverly Y. Sanders	2003150
	06/26/2018	06/28/2018 11:45	Sima Feizi	07/02/2018 17:40	Beverly Y. Sanders	2003141
	06/26/2018	06/28/2018 11:45	Sima Feizi	07/02/2018 17:41	Beverly Y. Sanders	2003142
	06/26/2018	06/28/2018 11:45	Sima Feizi	07/02/2018 17:42	Beverly Y. Sanders	2003143
	06/26/2018	06/28/2018 11:45	Sima Feizi	07/02/2018 17:43	Beverly Y. Sanders	2003144
EPA 365.1 Rev. 2.0 dissolved	06/26/2018			06/26/2018 14:54	Megan Treadwell	2003148
	06/26/2018			06/26/2018 15:03	Megan Treadwell	2003145
	06/26/2018			06/26/2018 15:04	Megan Treadwell	2003146
	06/26/2018			06/26/2018 15:05	Megan Treadwell	2003151
	06/26/2018			06/26/2018 15:14	Megan Treadwell	2003147
SM 2120 B	06/26/2018			06/26/2018 14:34	Tanya Welborn	2003137
	06/26/2018			06/26/2018 14:35	Tanya Welborn	2003138
	06/26/2018			06/26/2018 14:36	Tanya Welborn	2003139
	06/26/2018			06/26/2018 15:00	Tanya Welborn	2003140
SM 2320 B-97	06/26/2018			07/02/2018 11:01	Dale L. Simmons	2003137
	06/26/2018			07/02/2018 11:53	Dale L. Simmons	2003138
	06/26/2018			07/02/2018 12:06	Dale L. Simmons	2003139
	06/26/2018			07/02/2018 12:20	Dale L. Simmons	2003140
	06/26/2018			07/02/2018 12:31	Dale L. Simmons	2003149

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 C-97	06/26/2018			06/28/2018 15:21	Yijie Li	2003137, 2003138, 2003139, 2003140
SM 2540 D-97	06/26/2018			06/28/2018 15:21	Yijie Li	2003137, 2003138, 2003139, 2003140, 2003149
SM 4500 F-C-97	06/26/2018			07/02/2018 11:01	Dale L. Simmons	2003137
	06/26/2018			07/02/2018 11:53	Dale L. Simmons	2003138
	06/26/2018			07/02/2018 12:06	Dale L. Simmons	2003139
	06/26/2018			07/02/2018 12:20	Dale L. Simmons	2003140
SM 5310 B-00	06/26/2018			07/02/2018 12:31	Dale L. Simmons	2003149
	06/26/2018			07/03/2018 05:01	Megan Treadwell	2003141
	06/26/2018			07/03/2018 05:20	Megan Treadwell	2003142
	06/26/2018			07/03/2018 05:35	Megan Treadwell	2003143
	06/26/2018			07/03/2018 05:54	Megan Treadwell	2003144
	06/26/2018			07/03/2018 06:10	Megan Treadwell	2003150