

Chemical Analysis Report

SO-DIST-2016-06-02-04

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

Event Description: **SMP: Howard Cr, Howard Br, Indian Creek**

Request ID: **RQ-2016-05-23-09**

Customer: **SO-DIST**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901
Attn: Ben Paswater

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Date Certified: 24-JUN-2016 14:01



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: HOWARD CREEK @ MYAKKA VALLEY TRAIL **Collection Date/Time: 06/01/2016 09:25**

Field ID: G3SD060116-1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1804159	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P305527	
	EPA 300.0 Rev. 2.1	Chloride	45		mg Cl/L	P305849	
		Sulfate	230		mg SO4/L	P305851	
	SM 2120 B	Color (true)	140		PCU	P305491	
	SM 2320 B-97	Total Alkalinity	93		mg CaCO3/L	P305933	
	SM 2540 C-97	TDS	583		mg/L	P306190	
	SM 2540 D-97	TSS	3	I	mg/L	P306041	
	SM 4500 F-C-97	Fluoride	0.46		mg F/L	P305936	
1804162	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P305908	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P305721	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P305540	
	EPA 365.1 Rev. 2.0	Total-P	0.82		mg P/L	P306002	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P306214	
1804165	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.67		mg P/L	P305486	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Matrix spike recovery data for one of two spiked samples is unavailable due to high analyte concentration in the QC sample.

Sample Location: INDIAN CREEK @ FRUITVILLE RD.

Collection Date/Time: 06/01/2016 11:25

Field ID: G3SD060116-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1804160	EPA 180.1 Rev. 2.0	Turbidity	11	A	NTU	P305528	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P305849	
		Sulfate	120		mg SO4/L	P305851	
	SM 2120 B	Color (true)	62	A	PCU	P305491	
	SM 2320 B-97	Total Alkalinity	45		mg CaCO3/L	P305933	
	SM 2540 C-97	TDS	276		mg/L	P306190	
	SM 2540 D-97	TSS	7	I	mg/L	P306041	
	SM 4500 F-C-97	Fluoride	0.56		mg F/L	P305936	
1804163	EPA 350.1 Rev. 2.0	Ammonia-N	0.055		mg N/L	P305908	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P305721	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P305697	
	EPA 365.1 Rev. 2.0	Total-P	0.92		mg P/L	P306004	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P306214	
1804166	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.54		mg P/L	P305486	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Matrix spike recovery data for one of two spiked samples is unavailable due to high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: HOWARD CREEK NE BRANCH LOT 185

Collection Date/Time: 06/01/2016 09:35

Field ID: G3SD060116-3

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1804161	EPA 180.1 Rev. 2.0	Turbidity	29		NTU	P305528	

Field ID: G3SD060116-3

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1804161	EPA 300.0 Rev. 2.1	Chloride	40		mg Cl/L	P305849	
		Sulfate	13		mg SO4/L	P305851	
	SM 2120 B	Color (true)	69	A	PCU	P305492	
	SM 2320 B-97	Total Alkalinity	46		mg CaCO3/L	P305933	
	SM 2540 C-97	TDS	183		mg/L	P306190	
	SM 2540 D-97	TSS	2	I	mg/L	P306041	
	SM 4500 F-C-97	Fluoride	0.56		mg F/L	P305936	
1804164	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P305908	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P305724	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P305697	
	EPA 365.1 Rev. 2.0	Total-P	0.94		mg P/L	P306004	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P306214	
1804167	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.63		mg P/L	P305486	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Matrix spike recovery data for one of two spiked samples is unavailable due to high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P305527

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P305528

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P305849

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P305851

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P305908

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: P305721

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305724

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305540

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305697

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306002

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306004

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305486

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

Reference Method: SM 2120 B
Batch ID: P305491

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P305492

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P305933

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

Reference Method: SM 2540 C-97
Batch ID: P306190

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P306041

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P305936

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P306214

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: P305849

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305851

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305908

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: P305721

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305721

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305724

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.9		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305540

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305697

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306002

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306004

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305486

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

Reference Method: SM 2320 B-97
Batch ID: P305933

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P305936

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P306214

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305849

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804078	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305851

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804078	Sulfate	99.0		P	90 - 110
1804161	Sulfate	99.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305908

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804144	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305721

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804110	Kjeldahl Nitrogen	91.7	92.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305724

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804164	Kjeldahl Nitrogen	90.8	98.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305540

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804098	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305697

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804164	NO2NO3-N	95.0	96.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306002

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804109	Total-P	100	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305486

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804195	O-Phosphate-P	98.0	98.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P305936

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1806044	Fluoride	98.4	98.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P306214

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804162	Organic Carbon	105		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P305527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804115	Turbidity	4.05	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P305528

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804160	Turbidity	5.50	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305849

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804078	Chloride	0.160	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804078	Sulfate	0.158	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305908

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804144	Ammonia-N	0.0780	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305721

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804110	Kjeldahl Nitrogen	0.590	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305724

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804164	Kjeldahl Nitrogen	5.17	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305540

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804098	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305697

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804164	NO2NO3-N	0.669	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306002

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804109	Total-P	2.65	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804163	Total-P	2.36	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804195	O-Phosphate-P	0.466	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P305491

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804160	Color (true)	4.41	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P305492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804161	Color (true)	0.548	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P305933

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1806044	Total Alkalinity	0.122	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P306190

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804142	TDS	4.65	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P306041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804142	TSS	6.67	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P305936

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1806044	Fluoride	0.479	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P306214

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804162	Organic Carbon	4.45	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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A69817

Included Lab Sample IDs: 1804165, 1804166, 1804167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.6	P/P	90 - 110
O-Phosphate-P	98.6	97.8	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A69818

Included Lab Sample IDs: 1804159, 1804160, 1804161

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A69828

Included Lab Sample IDs: 1804159, 1804160, 1804161

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69831

Included Lab Sample IDs: 1804162

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69898

Included Lab Sample IDs: 1804163, 1804164

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69916

Included Lab Sample IDs: 1804162, 1804163, 1804164

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	100	P/P	90 - 110
Kjeldahl Nitrogen	99.9	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A69924

Included Lab Sample IDs: 1804159, 1804160, 1804161

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Chloride	101	101	P/P	90 - 110
Chloride	101	101	P/P	90 - 110
Sulfate	98.7	99.9	P/P	90 - 110
Sulfate	98.9	99.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69948

Included Lab Sample IDs: 1804162, 1804163, 1804164

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

Reference Method: SM 2320 B-97

Run ID: A69953

Included Lab Sample IDs: 1804159, 1804160, 1804161

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	99.7	P/P	90 - 110
Total Alkalinity	99.7	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A69953

Included Lab Sample IDs: 1804159, 1804160, 1804161

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69991

Included Lab Sample IDs: 1804162, 1804163, 1804164

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

Reference Method: SM 5310 B-00

Run ID: A70048

Included Lab Sample IDs: 1804162, 1804163, 1804164

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	104	P/P	90 - 110
Organic Carbon	104	96.6	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	MS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				4.05	
	Turbidity				5.50	
EPA 300.0 Rev. 2.1	Chloride	102	100		0.160	
	Sulfate	100	99.0	99.0	0.158	
EPA 350.1 Rev. 2.0	Ammonia-N	99.6	101	101		0.0780
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.0	91.7	92.3		0.590
	Kjeldahl Nitrogen	96.9	90.8	98.4		5.17
EPA 353.2 Rev. 2.0	NO2NO3-N	104	100	100		0.0

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	95.0	96.0		0.669
EPA 365.1 Rev. 2.0	Total-P	98.8	100	103		2.65
	Total-P	97.0				2.36
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	98.0	98.8		0.466
SM 2120 B	Color (true)				4.41	
	Color (true)				0.548	
SM 2320 B-97	Total Alkalinity	103			0.122	
SM 2540 C-97	TDS				4.65	
SM 2540 D-97	TSS				6.67	
SM 4500 F-C-97	Fluoride	98.9	98.4	98.9		0.479
SM 5310 B-00	Organic Carbon	103	105			4.45

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1804159, 1804160, 1804161
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1804159, 1804160, 1804161
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1804159, 1804160, 1804161
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1804162, 1804163, 1804164
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1804162, 1804163, 1804164
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1804162, 1804163, 1804164
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1804162, 1804163, 1804164
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1804165, 1804166, 1804167
SM 2120 B / E31780	True Color measured at 450 nm	1804159, 1804160, 1804161
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1804159, 1804160, 1804161
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1804159, 1804160, 1804161
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1804159, 1804160, 1804161
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1804159, 1804160, 1804161
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1804162, 1804163, 1804164

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	06/02/2016			06/02/2016 16:44	Blanca Fach	1804159, 1804160, 1804161
EPA 300.0 Rev. 2.1	06/02/2016			06/08/2016	Julia Storbeck	1804161
	06/02/2016			06/09/2016	Julia Storbeck	1804159, 1804160
EPA 350.1 Rev. 2.0	06/02/2016			06/09/2016	Diana M. Turner	1804162, 1804163, 1804164
EPA 351.2 Rev. 2.0	06/02/2016	06/07/2016	Sofia Elnemr	06/08/2016	Christopher Armour	1804162, 1804163, 1804164
EPA 353.2 Rev. 2.0	06/02/2016			06/03/2016	Peter D. Kaus	1804162
	06/02/2016			06/07/2016	Beverly Y. Sanders	1804163, 1804164
EPA 365.1 Rev. 2.0	06/02/2016	06/10/2016	Vijayalakshmi Reddy	06/13/2016	Peter D. Kaus	1804162, 1804163, 1804164
EPA 365.1 Rev. 2.0 dissolved	06/02/2016			06/02/2016 18:20	Julia Storbeck	1804167
	06/02/2016			06/02/2016 18:27	Julia Storbeck	1804165
	06/02/2016			06/02/2016 18:28	Julia Storbeck	1804166
SM 2120 B	06/02/2016			06/02/2016 19:36	Chrisoulla Rakowski	1804159
	06/02/2016			06/02/2016 19:38	Chrisoulla Rakowski	1804160
	06/02/2016			06/02/2016 19:43	Chrisoulla Rakowski	1804161
SM 2320 B-97	06/02/2016			06/09/2016	Dale L. Simmons	1804159, 1804160, 1804161
SM 2540 C-97	06/02/2016			06/06/2016	Blanca Fach	1804159, 1804160, 1804161
SM 2540 D-97	06/02/2016			06/06/2016	Blanca Fach	1804159, 1804160, 1804161
SM 4500 F-C-97	06/02/2016			06/09/2016	Dale L. Simmons	1804159, 1804160, 1804161
SM 5310 B-00	06/02/2016			06/14/2016	Diana M. Turner	1804162
	06/02/2016			06/15/2016	Diana M. Turner	1804163, 1804164