

Chemical Analysis Report

NE-DIST-2016-07-14-02

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

Event Description: **Hawthorne/Suwannee**

Request ID: **RQ-2016-07-11-14**

Customer: **NE-DIST**

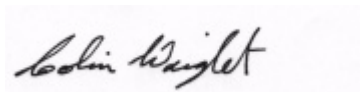
Project ID: **SMP**

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Certified by: Colin Wright, Environmental Administrator

Date Certified: 05-AUG-2016 15:11

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

Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: 20020054LITTLE ORANGE LAKE CTR

Collection Date/Time: 07/13/2016 09:55

Field ID: 20020054LITTLE ORANGE LAKE CTR

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815959	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P307974	
	EPA 300.0 Rev. 2.1	Chloride	8.3		mg Cl/L	P308926	
		Sulfate	0.64		mg SO4/L	P308930	
	SM 2120 B	Color (true)	350		PCU	P307964	
	SM 2320 B-97	Total Alkalinity	3.9		mg CaCO3/L	P308420	
	SM 2540 C-97	TDS	73		mg/L	P308836	
	SM 2540 D-97	TSS	2	U	mg/L	P308473	
	SM 4500 F-C-97	Fluoride	0.083	I	mg F/L	P308424	
1815963	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P308346	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P308167	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P308707	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P308129	
	SM 5310 B-00	Organic Carbon	31		mg C/L	P308414	
1815967	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.20		mg P/L	P307958	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: G3NE0003 Holdens Pond Center

Collection Date/Time: 07/13/2016 10:20

Field ID: G3NE0003 Holdens Pond Center

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815960	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P307974	
	EPA 300.0 Rev. 2.1	Chloride	8.8		mg Cl/L	P308926	
		Sulfate	0.36	I	mg SO4/L	P308930	
	SM 2120 B	Color (true)	320		PCU	P307964	
	SM 2320 B-97	Total Alkalinity	3.7		mg CaCO3/L	P308420	
	SM 2540 C-97	TDS	70		mg/L	P308836	
	SM 2540 D-97	TSS	2	I	mg/L	P308473	
	SM 4500 F-C-97	Fluoride	0.083	I	mg F/L	P308424	
1815964	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P308346	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P308167	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P308707	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P308129	
	SM 5310 B-00	Organic Carbon	31		mg C/L	P308414	
1815968	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P307958	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: 21030027LAKE SAMPSON NEAR E SH

Collection Date/Time: 07/13/2016 11:50

Field ID: 21030027LAKE SAMPSON NEAR E SH

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815961	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P307974	

Field ID: 21030027LAKE SAMPSON NEAR E SH

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815961	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P308926	
		Sulfate	7.8		mg SO4/L	P308930	
	SM 2120 B	Color (true)	39	A	PCU	P307964	
	SM 2320 B-97	Total Alkalinity	24		mg CaCO3/L	P308420	
	SM 2540 C-97	TDS	103		mg/L	P308836	
	SM 2540 D-97	TSS	4	I	mg/L	P308473	
	SM 4500 F-C-97	Fluoride	0.077	I	mg F/L	P308424	
1815965	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P308347	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P308167	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P308715	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P308129	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P308414	
1815969	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P307958	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: FIELD BLANK

Collection Date/Time: 07/13/2016 09:15

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815962	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P307970	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P308926	
		Sulfate	0.20	U	mg SO4/L	P308930	
	SM 2120 B	Color (true)	2.5	U	PCU	P307965	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P308420	
	SM 2540 C-97	TDS	15	U	mg/L	P308837	
	SM 2540 D-97	TSS	2	U	mg/L	P308474	
1815966	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P308424	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P308347	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P308167	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P308715	
	EPA 365.1 Rev. 2.0	Total-P	0.002	I	mg P/L	P308129	
1815970	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P308414	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P307958	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

SM 5310 B-00: 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: P307970

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P307974

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308926

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308930

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308346

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308347

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308167

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308707

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308715

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308129

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: P307958

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

Reference Method: SM 2120 B
Batch ID: P307964

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P307965

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P308420

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

Reference Method: SM 2540 C-97
Batch ID: P308836

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P308837

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P308473

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P308474

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P308424

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P308414

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: P308926

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308930

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308346

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308347

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308167

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308707

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308715

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308129

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308129

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	93.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307958

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

Reference Method: SM 2320 B-97
Batch ID: P308420

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P308424

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P308414

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815826	Chloride	98.9		P	90 - 110
1820254	Chloride	98.8	99.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308930

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815826	Sulfate	95.8		P	90 - 110
1820254	Sulfate	95.2	95.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815875	Ammonia-N	97.2	98.7	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308347

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1816020	Ammonia-N	96.0	97.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815549	NO2NO3-N	96.4	97.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815984	NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308129

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815984	Total-P	96.4	95.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307958

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815969	O-Phosphate-P	97.3	98.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P308424

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815860	Fluoride	97.7	98.9	P/P	91 - 105

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P307970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815998	Turbidity	5.91	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P307974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815874	Turbidity	0.960	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1820254	Chloride	0.140	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308930

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1820254	Sulfate	0.229	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815875	Ammonia-N	1.27	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308347

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816020	Ammonia-N	1.78	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308167

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815963	Kjeldahl Nitrogen	2.97	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815549	NO2NO3-N	0.797	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815984	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308129

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815984	Total-P	0.762	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307958

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815969	O-Phosphate-P	1.02	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P307964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815961	Color (true)	0.550	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P307965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815983	Color (true)	6.19	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P308420

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815860	Total Alkalinity	0.0713	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P308836

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815874	TDS	0.322	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P308837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816026	TDS	0.905	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P308473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815874	TSS	0.0	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P308424

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815860	Fluoride	0.979	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P308414

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815941	Organic Carbon	0.246	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A70559
Included Lab Sample IDs: 1815967, 1815968, 1815969, 1815970

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	101	P/P	90 - 110
O-Phosphate-P	99.4	101	P/P	90 - 110
O-Phosphate-P	99.5	98.0	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A70560
Included Lab Sample IDs: 1815959, 1815960, 1815961, 1815962

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	94.4	93.9	P/P	90 - 115
Color (true)	95.2	96.5	P/P	90 - 115
Color (true)	95.5	94.4	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A70562
Included Lab Sample IDs: 1815962

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	100	P/P	95 - 105

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A70563
Included Lab Sample IDs: 1815959, 1815960, 1815961

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A70647
Included Lab Sample IDs: 1815963, 1815964

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70648

Included Lab Sample IDs: 1815965, 1815966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A70675

Included Lab Sample IDs: 1815963, 1815964, 1815965, 1815966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	101	P/P	90 - 110
Ammonia-N	101	103	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A70693

Included Lab Sample IDs: 1815963, 1815964, 1815965, 1815966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.3	98.4	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A70694

Included Lab Sample IDs: 1815959, 1815960, 1815961, 1815962

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

Reference Method: SM 4500 F-C-97

Run ID: A70694

Included Lab Sample IDs: 1815959, 1815960, 1815961, 1815962

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A70723

Included Lab Sample IDs: 1815963, 1815964, 1815965, 1815966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	95.9	P/P	90 - 110
Kjeldahl Nitrogen	102	98.2	P/P	90 - 110
Kjeldahl Nitrogen	95.9	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A70777

Included Lab Sample IDs: 1815963, 1815964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A70789
Included Lab Sample IDs: 1815965, 1815966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	106	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A70802
Included Lab Sample IDs: 1815959, 1815960, 1815961, 1815962

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	101	P/P	90 - 110
Sulfate	97.1	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			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						5.91	
	Turbidity						0.960	
EPA 300.0 Rev. 2.1	Chloride	99.3	98.8	99.0	98.9			0.140
	Sulfate	96.1	95.2	95.4	95.8			0.229
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	97.2	98.7				1.27
	Ammonia-N	96.5	96.0	97.9				1.78
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101						2.97
EPA 353.2 Rev. 2.0	NO2NO3-N	102	96.4	97.4				0.797
	NO2NO3-N	104	99.0	99.0				0.0
EPA 365.1 Rev. 2.0	Total-P	93.6	96.4	95.7				0.762
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.3	98.3				1.02
SM 2120 B	Color (true)						0.550	
	Color (true)						6.19	
SM 2320 B-97	Total Alkalinity	104					0.0713	
SM 2540 C-97	TDS						0.322	
	TDS						0.905	
SM 2540 D-97	TSS						0.0	
SM 4500 F-C-97	Fluoride	97.8	97.7	98.9				0.979
SM 5310 B-00	Organic Carbon	96.2						0.246

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1815959, 1815960, 1815961, 1815962
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1815959, 1815960, 1815961, 1815962
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1815959, 1815960, 1815961, 1815962
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1815963, 1815964, 1815965, 1815966

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1815963, 1815964, 1815965, 1815966
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1815963, 1815964, 1815965, 1815966
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1815963, 1815964, 1815965, 1815966
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1815967, 1815968, 1815969, 1815970
SM 2120 B / E31780	True Color measured at 450 nm	1815959, 1815960, 1815961, 1815962
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1815959, 1815960, 1815961, 1815962
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1815959, 1815960, 1815961, 1815962
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1815959, 1815960, 1815961, 1815962
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1815959, 1815960, 1815961, 1815962
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1815963, 1815964, 1815965, 1815966

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	07/14/2016			07/14/2016 14:48	Blanca Fach	1815959, 1815960, 1815961
	07/14/2016			07/14/2016 17:05	Rochelle Y Jackson	1815962
EPA 300.0 Rev. 2.1	07/14/2016			07/30/2016	Ping Hua	1815959, 1815960, 1815961, 1815962
EPA 350.1 Rev. 2.0	07/14/2016			07/20/2016	Diana M. Turner	1815963, 1815964, 1815965, 1815966
EPA 351.2 Rev. 2.0	07/14/2016	07/19/2016	Sofia Elnemr	07/21/2016	Christopher Armour	1815963, 1815964, 1815965, 1815966
EPA 353.2 Rev. 2.0	07/14/2016	07/18/2016	Vijayalakshmi Reddy	07/27/2016	Beverly Y. Sanders	1815963, 1815964, 1815965, 1815966
EPA 365.1 Rev. 2.0	07/14/2016			07/19/2016	Lipi Saha	1815963, 1815964
EPA 365.1 Rev. 2.0 dissolved	07/14/2016	07/18/2016	Vijayalakshmi Reddy	07/20/2016	Lipi Saha	1815965, 1815966
	07/14/2016			07/14/2016 14:00	Julia Storbeck	1815969
	07/14/2016			07/14/2016 14:32	Julia Storbeck	1815970
	07/14/2016			07/14/2016 14:36	Julia Storbeck	1815968
SM 2120 B	07/14/2016			07/14/2016 15:12	Julia Storbeck	1815967
	07/14/2016			07/14/2016 14:12	Rochelle Y Jackson	1815961
	07/14/2016			07/14/2016 14:15	Rochelle Y Jackson	1815962
	07/14/2016			07/14/2016 14:42	Rochelle Y Jackson	1815959
	07/14/2016			07/14/2016 14:43	Rochelle Y Jackson	1815960
SM 2320 B-97	07/14/2016			07/20/2016	Dale L. Simmons	1815959, 1815960, 1815961, 1815962
SM 2540 C-97	07/14/2016			07/18/2016	Sima Feizi	1815959, 1815960, 1815961, 1815962
SM 2540 D-97	07/14/2016			07/18/2016	Sima Feizi	1815959, 1815960, 1815961, 1815962
SM 4500 F-C-97	07/14/2016			07/20/2016	Dale L. Simmons	1815959, 1815960, 1815961, 1815962
SM 5310 B-00	07/14/2016			07/21/2016	Sofia Elnemr	1815963, 1815964, 1815965, 1815966