

Chemical Analysis Report

NW-DIST-2016-08-18-01

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

Event Description: **WBID 778A 843 786 874A 754**

Request ID: **RQ-2016-08-08-53**

Customer: **NW-DIST**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208A
Pensacola, FL 32502-5794
Attn: Michael King

For additional information please contact
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Certified by: Colin Wright, Environmental Administrator

Date Certified: 09-SEP-2016 16:15

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: CINCO BAYOU 1 MI W OF BRID CEN

Collection Date/Time: 08/17/2016 10:50

Field ID: G3NW0088

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1824742	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P310009	
	SM 2320 B-97	Total Alkalinity	66	A	mg CaCO3/L	P310237	
	SM 2540 D-97	TSS	6	I	mg/L	P310503	
	SM 4500 F-C-97	Fluoride	0.51		mg F/L	P310365	
1824747	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P310062	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P310085	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P310238	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P309994	
	SM 5310 B-00	Organic Carbon	3.9		mg C/L	P310369	
1824752	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P309984	

Ref. Method and Comment:

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

Sample Location: GARNIER BAYOU AT PARADISE POINT

Collection Date/Time: 08/17/2016 11:05

Field ID: G3NW0087

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1824743	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P310009	
	SM 2320 B-97	Total Alkalinity	61		mg CaCO3/L	P310237	
	SM 2540 D-97	TSS	4	I	mg/L	P310503	
	SM 4500 F-C-97	Fluoride	0.47		mg F/L	P310684	
1824748	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P310062	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29	I	mg N/L	P310123	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.029		mg N/L	P310238	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P309994	
	SM 5310 B-00	Organic Carbon	4.0		mg C/L	P310369	
1824753	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P309984	

Ref. Method and Comment:

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

Sample Location: POQUITO BAYOU MIDDLE

Collection Date/Time: 08/17/2016 11:15

Field ID: G3NW0086

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1824744	EPA 180.1 Rev. 2.0	Turbidity	1.3	A	NTU	P310009	
	SM 2320 B-97	Total Alkalinity	65		mg CaCO3/L	P310237	
	SM 2540 D-97	TSS	8	I	mg/L	P310503	
	SM 4500 F-C-97	Fluoride	0.55		mg F/L	P310365	
1824749	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P310062	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38	I	mg N/L	P310123	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P310238	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P309994	
	SM 5310 B-00	Organic Carbon	3.3		mg C/L	P310369	
1824754	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P309984	

Field ID: G3NW0086

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:

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

Sample Location: CHOCTAWHATCHEE BAY SEC B BACKGRN Collection Date/Time: 08/17/2016 11:35

Field ID: G3NW0089

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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1824745	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P310009	
	SM 2320 B-97	Total Alkalinity	65		mg CaCO3/L	P310364	
	SM 2540 D-97	TSS	8	I	mg/L	P310503	
	SM 4500 F-C-97	Fluoride	0.51		mg F/L	P310366	
1824750	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P310062	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36	I	mg N/L	P310123	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P310238	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P309994	
	SM 5310 B-00	Organic Carbon	3.5		mg C/L	P310557	
1824755	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P309984	

Ref. Method and Comment:

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

Sample Location: LAKE EARL CENTER Collection Date/Time: 08/17/2016 11:45

Field ID: G3NW0090

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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1824746	EPA 180.1 Rev. 2.0	Turbidity	3.3	A	NTU	P310010	
	SM 2320 B-97	Total Alkalinity	76		mg CaCO3/L	P310364	
	SM 2540 D-97	TSS	6	I	mg/L	P310503	
	SM 4500 F-C-97	Fluoride	0.54		mg F/L	P310366	
1824751	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P310062	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P310123	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P310238	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P310106	
	SM 5310 B-00	Organic Carbon	6.8		mg C/L	P310557	
1824756	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P309984	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P310009

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: P310010

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310062

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310085

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310123

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310238

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P309994

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310106

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P309984

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

Reference Method: SM 2320 B-97
Batch ID: P310237

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P310364

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

Reference Method: SM 2540 D-97
Batch ID: P310503

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P310365

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P310366

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P310684

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P310369

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-00
Batch ID: P310557

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310062

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310085

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: P310085

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310123

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310238

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P309994

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310106

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P309984

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

Reference Method: SM 2320 B-97
Batch ID: P310237

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

Reference Method: SM 2320 B-97
Batch ID: P310364

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P310365

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.1		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P310366

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P310684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P310369

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P310557

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310062

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1825123	Ammonia-N	103	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310085

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824630	Kjeldahl Nitrogen	93.7	93.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310123

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824748	Kjeldahl Nitrogen	98.5	95.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310238

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824747	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P309994

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P309994

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1823943	Total-P	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310106

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1825123	Total-P	99.8	95.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P309984

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824752	O-Phosphate-P	100	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P310365

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824742	Fluoride	98.5	99.7	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P310366

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1825648	Fluoride	93.9	93.9	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P310684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824743	Fluoride	96.1	96.1	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P310369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824009	Organic Carbon	93.6	95.6	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P310557

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1824750	Organic Carbon	93.5	95.8	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P310009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824744	Turbidity	3.77	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P310010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824746	Turbidity	0.900	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310062

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1825123	Ammonia-N	2.92	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310085

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824630	Kjeldahl Nitrogen	0.0751	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310123

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824748	Kjeldahl Nitrogen	2.96	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824747	NO2NO3-N	0.466	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P309994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1823943	Total-P	1.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310106

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1825123	Total-P	3.97	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P309984

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824752	O-Phosphate-P	0.399	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P310237

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824742	Total Alkalinity	0.0265	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P310364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1825648	Total Alkalinity	0.629	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
Batch ID: P310365

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824742	Fluoride	1.01	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P310366

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1825648	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P310684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824743	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P310369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824009	Organic Carbon	1.10	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P310557

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1824750	Organic Carbon	2.22	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: EPA 365.1 Rev. 2.0 dissolved

Run ID: A71210

Included Lab Sample IDs: 1824752, 1824753, 1824754, 1824755, 1824756

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A71225

Included Lab Sample IDs: 1824742, 1824743, 1824744, 1824745, 1824746

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.0	P/P	95 - 105
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A71238

Included Lab Sample IDs: 1824747, 1824748, 1824749, 1824750, 1824751

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A71263

Included Lab Sample IDs: 1824747, 1824748, 1824749, 1824750

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A71276

Included Lab Sample IDs: 1824747

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A71286

Included Lab Sample IDs: 1824748, 1824749, 1824750, 1824751

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	103	P/P	90 - 110
Kjeldahl Nitrogen	103	107	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A71287

Included Lab Sample IDs: 1824747, 1824748, 1824749, 1824750, 1824751

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A71290

Included Lab Sample IDs: 1824751

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	99.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A71291

Included Lab Sample IDs: 1824742, 1824743, 1824744

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

Reference Method: SM 2320 B-97

Run ID: A71330

Included Lab Sample IDs: 1824745, 1824746

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A71330

Included Lab Sample IDs: 1824742, 1824744, 1824745, 1824746

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	98.1	P/P	90 - 110
Fluoride	98.6	97.6	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A71332

Included Lab Sample IDs: 1824747, 1824748, 1824749

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.3	94.4	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A71405

Included Lab Sample IDs: 1824750, 1824751

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	90.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A71451

Included Lab Sample IDs: 1824743

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

Quality Assurance Report Calibration Verification

* 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					3.77	
	Turbidity					0.900	
EPA 350.1 Rev. 2.0	Ammonia-N	104	103	107			2.92
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	93.7	93.6			0.0751
	Kjeldahl Nitrogen	99.6	98.5	95.3			2.96
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	101	101			0.466
EPA 365.1 Rev. 2.0	Total-P	101	101	102			1.00
	Total-P	98.7	99.8	95.6			3.97
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	100	100			0.399
SM 2320 B-97	Total Alkalinity	104				0.0265	
	Total Alkalinity	103				0.629	
SM 4500 F-C-97	Fluoride	98.1	98.5	99.7			1.01
	Fluoride	96.6	93.9	93.9			0.0
	Fluoride	97.6	96.1	96.1			0.0
SM 5310 B-00	Organic Carbon	95.8	93.6	95.6			1.10
	Organic Carbon	102	93.5	95.8			2.22

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1824742, 1824743, 1824744, 1824745, 1824746
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1824747, 1824748, 1824749, 1824750, 1824751
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1824747, 1824748, 1824749, 1824750, 1824751
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1824747, 1824748, 1824749, 1824750, 1824751
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1824747, 1824748, 1824749, 1824750, 1824751
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1824752, 1824753, 1824754, 1824755, 1824756
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1824742, 1824743, 1824744, 1824745, 1824746
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1824742, 1824743, 1824744, 1824745, 1824746
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1824742, 1824743, 1824744, 1824745, 1824746
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1824747, 1824748, 1824749, 1824750, 1824751

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	08/18/2016			08/18/2016 16:04	Blanca Fach	1824742, 1824743, 1824744, 1824745, 1824746
EPA 350.1 Rev. 2.0	08/18/2016			08/21/2016	Julie Michelle Frank	1824747, 1824748, 1824749, 1824750, 1824751
EPA 351.2 Rev. 2.0	08/18/2016	08/22/2016	Sofia Elnemr	08/23/2016	Christopher Armour	1824747
	08/18/2016	08/23/2016	Sofia Elnemr	08/24/2016	Christopher Armour	1824748, 1824749, 1824750, 1824751
EPA 353.2 Rev. 2.0	08/18/2016			08/22/2016	Beverly Y. Sanders	1824747, 1824748, 1824749, 1824750, 1824751
EPA 365.1 Rev. 2.0	08/18/2016	08/19/2016	Vijayalakshmi Reddy	08/23/2016	Lipi Saha	1824747, 1824748, 1824749, 1824750
	08/18/2016	08/22/2016	Vijayalakshmi Reddy	08/24/2016	Lipi Saha	1824751
EPA 365.1 Rev. 2.0 dissolved	08/18/2016			08/18/2016 15:23	Julia Storbeck	1824752
	08/18/2016			08/18/2016 16:01	Julia Storbeck	1824753
	08/18/2016			08/18/2016 16:02	Julia Storbeck	1824754, 1824755
	08/18/2016			08/18/2016 16:03	Julia Storbeck	1824756
SM 2320 B-97	08/18/2016			08/24/2016	Dale L. Simmons	1824742, 1824743, 1824744
	08/18/2016			08/25/2016	Dale L. Simmons	1824745, 1824746
SM 2540 D-97	08/18/2016			08/22/2016	Sima Feizi	1824742, 1824743, 1824744, 1824745, 1824746
SM 4500 F-C-97	08/18/2016			08/25/2016	Dale L. Simmons	1824742, 1824744, 1824745, 1824746
	08/18/2016			09/01/2016	Dale L. Simmons	1824743
SM 5310 B-00	08/18/2016			08/25/2016	Sofia Elnemr	1824747, 1824748, 1824749
	08/18/2016			08/30/2016	Sofia Elnemr	1824750, 1824751