

Chemical Analysis Report

SW-DIST-2016-03-23-02

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

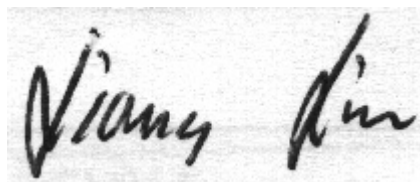
Event Description: **WBID: 1391B**
Request ID: **RQ-2016-03-21-51**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 08-APR-2016 15:33

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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: G4SW0020

Collection Date/Time: 03/22/2016 10:45

Field ID: G4SW0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1782503	EPA 180.1 Rev. 2.0	Turbidity	15		NTU	P300941	
	EPA 300.0 Rev. 2.1	Chloride	8.2		mg Cl/L	P301037	
		Sulfate	2.5		mg SO4/L	P301039	
	SM 2120 B	Color (true)	22	A	PCU	P300893	
	SM 2320 B-97	Total Alkalinity	116		mg CaCO3/L	P301090	
	SM 2540 C-97	TDS	136		mg/L	P301226	
	SM 2540 D-97	TSS	27		mg/L	P301154	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P301093	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P301333	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P301327	MS
1782507	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P301116	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P301260	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P301239	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.052		mg P/L	P300916	

Ref. Method and Comment:

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

Sample Location: G4SW0020

Collection Date/Time: 03/22/2016 10:50

Field ID: G4SW0020 DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1782504	EPA 180.1 Rev. 2.0	Turbidity	15		NTU	P300941	
	EPA 300.0 Rev. 2.1	Chloride	8.2		mg Cl/L	P301037	
		Sulfate	2.6		mg SO4/L	P301039	
	SM 2120 B	Color (true)	22		PCU	P300893	
	SM 2320 B-97	Total Alkalinity	116		mg CaCO3/L	P301090	
	SM 2540 C-97	TDS	130		mg/L	P301226	
	SM 2540 D-97	TSS	29		mg/L	P301154	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P301093	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P301334	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P301327	MS
1782508	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P301116	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P301260	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P301239	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.052		mg P/L	P300916	

Ref. Method and Comment:

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

Sample Location: G4SW0032

Collection Date/Time: 03/22/2016 11:50

Field ID: G4SW0032

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1782505	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P300941	
	EPA 300.0 Rev. 2.1	Chloride	3.0		mg Cl/L	P301037	
		Sulfate	0.20	U	mg SO4/L	P301039	

Field ID: G4SW0032

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1782505	SM 2120 B	Color (true)	59		PCU	P300893	
	SM 2320 B-97	Total Alkalinity	13		mg CaCO3/L	P301090	
	SM 2540 C-97	TDS	26		mg/L	P301226	
	SM 2540 D-97	TSS	2	I	mg/L	P301154	
	SM 4500 F-C-97	Fluoride	0.048	I	mg F/L	P301093	
1782509	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P301334	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P301328	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P301116	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P301260	
	SM 5310 B-00	Organic Carbon	8.8		mg C/L	P301239	
1782513	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P300916	

Ref. Method and Comment:

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

Sample Location: BLANK

Collection Date/Time: 03/22/2016 12:00

Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1782506	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P300941	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P301037	
		Sulfate	0.20	U	mg SO4/L	P301039	
	SM 2120 B	Color (true)	2.5	U	PCU	P300893	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P301090	
	SM 2540 C-97	TDS	15	U	mg/L	P301222	
	SM 2540 D-97	TSS	2	U	mg/L	P301150	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P301093	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P301334	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P301328	
1782510	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P301116	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P301260	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P301239	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P300916	

Ref. Method and Comment:

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P300941

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P301037

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301037

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301039

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301333

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301334

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301327

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301328

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301116

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301260

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300916

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
 Batch ID: P300893

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
 Batch ID: P301090

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

Reference Method: SM 2540 C-97
 Batch ID: P301222

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
 Batch ID: P301226

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P301150

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P301154

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P301093

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P301239

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: P301037

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301037

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301039

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301333

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301334

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: P301327

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	92.7		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301116

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301260

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300916

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P301090

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P301093

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.8		P	94 - 108

Reference Method: SM 5310 B-00
Batch ID: P301239

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782503	Chloride	101		P	90 - 110
1782869	Chloride	101	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301039

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782503	Sulfate	98.9		P	90 - 110
1782869	Sulfate	97.8	98.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301333

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782322	Ammonia-N	99.4	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301334

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782509	Ammonia-N	97.9	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301327

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782323	Kjeldahl Nitrogen	78.7	85.4	F/F	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782538	Kjeldahl Nitrogen	92.4	95.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301116

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782509	NO2NO3-N	101	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301260

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782507	Total-P	104	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300916

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782441	O-Phosphate-P	100	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P301093

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782519	Fluoride	97.8	96.6	P/P	94 - 107

Reference Method: SM 5310 B-00
Batch ID: P301239

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782439	Organic Carbon	92.7	92.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P300941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782437	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782869	Chloride	0.463	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301039

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782869	Sulfate	0.434	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301333

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782322	Ammonia-N	0.705	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782509	Ammonia-N	0.595	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782323	Kjeldahl Nitrogen	6.53	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782538	Kjeldahl Nitrogen	2.26	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782509	NO2NO3-N	2.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301260

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782507	Total-P	2.79	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300916

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782441	O-Phosphate-P	0.596	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
 Batch ID: P300893

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782503	Color (true)	1.50	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P301090

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782519	Total Alkalinity	0.190	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
 Batch ID: P301222

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782004	TDS	5.71	Sample	P	0 - 10

Reference Method: SM 2540 C-97
 Batch ID: P301226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782247	TDS	3.80	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P301093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782519	Fluoride	0.990	Spike	P	0 - 3.7

Reference Method: SM 5310 B-00
 Batch ID: P301239

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782439	Organic Carbon	0.323	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
 Run ID: A68401
 Included Lab Sample IDs: 1782503, 1782504, 1782505, 1782506

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.4	99.5	P/P	90 - 110
Chloride	99.5	98.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A68401

Included Lab Sample IDs: 1782503, 1782504, 1782505, 1782506

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	96.7	97.9	P/P	90 - 110
Sulfate	97.9	95.3	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A68402

Included Lab Sample IDs: 1782503, 1782504, 1782505, 1782506

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.5	99.6	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A68407

Included Lab Sample IDs: 1782511, 1782512, 1782513, 1782514

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A68413

Included Lab Sample IDs: 1782503, 1782504, 1782505, 1782506

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

Reference Method: SM 2320 B-97

Run ID: A68457

Included Lab Sample IDs: 1782503, 1782504, 1782505, 1782506

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A68457

Included Lab Sample IDs: 1782503, 1782504, 1782505, 1782506

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	99.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68471

Included Lab Sample IDs: 1782507, 1782508, 1782509, 1782510

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

Reference Method: SM 5310 B-00

Run ID: A68516

Included Lab Sample IDs: 1782507, 1782508, 1782509, 1782510

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A68516

Included Lab Sample IDs: 1782507, 1782508, 1782509, 1782510

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	91.9	91.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A68548

Included Lab Sample IDs: 1782507, 1782508, 1782509, 1782510

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68579

Included Lab Sample IDs: 1782507, 1782508, 1782509

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.2	93.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68591

Included Lab Sample IDs: 1782509, 1782510

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68631

Included Lab Sample IDs: 1782510

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68672

Included Lab Sample IDs: 1782507, 1782508

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.7	103	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 SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					0.0	
EPA 300.0 Rev. 2.1	Chloride	100	101	101	101		0.463
	Sulfate	97.9	97.8	98.3	98.9		0.434

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 350.1 Rev. 2.0	Ammonia-N	99.5	100	99.4			0.705
	Ammonia-N	101	97.9	98.5			0.595
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.3	78.7	85.4			6.53
	Kjeldahl Nitrogen	92.7	92.4	95.4			2.26
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	101	99.0			2.00
EPA 365.1 Rev. 2.0	Total-P	98.2	104	108			2.79
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.6	100	101			0.596
SM 2120 B	Color (true)					1.50	
SM 2320 B-97	Total Alkalinity	102				0.190	
SM 2540 C-97	TDS					5.71	
	TDS					3.80	
SM 4500 F-C-97	Fluoride	94.8	97.8	96.6			0.990
SM 5310 B-00	Organic Carbon	92.4	92.7	92.3			0.323

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1782503, 1782504, 1782505, 1782506
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1782503, 1782504, 1782505, 1782506
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1782503, 1782504, 1782505, 1782506
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1782507, 1782508, 1782509, 1782510
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1782507, 1782508, 1782509, 1782510
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1782507, 1782508, 1782509, 1782510
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1782507, 1782508, 1782509, 1782510
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1782511, 1782512, 1782513, 1782514
SM 2120 B / E31780	True Color measured at 450 nm	1782503, 1782504, 1782505, 1782506
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1782503, 1782504, 1782505, 1782506
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1782503, 1782504, 1782505, 1782506
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1782503, 1782504, 1782505, 1782506
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1782503, 1782504, 1782505, 1782506
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1782507, 1782508, 1782509, 1782510

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	03/23/2016			03/23/2016 17:04	Blanca Fach	1782503, 1782504, 1782505, 1782506
EPA 300.0 Rev. 2.1	03/23/2016			03/24/2016	Julia Storbeck	1782503, 1782504, 1782505, 1782506
EPA 350.1 Rev. 2.0	03/23/2016			03/30/2016	Diana M. Turner	1782507, 1782508, 1782509, 1782510
EPA 351.2 Rev. 2.0	03/23/2016	03/31/2016	Sofia Elnemr	04/01/2016	Christopher Armour	1782507, 1782508, 1782509
	03/23/2016	03/31/2016	Sofia Elnemr	04/04/2016	Virginia P. Brown	1782510
EPA 353.2 Rev. 2.0	03/23/2016			03/25/2016	Diana M. Turner	1782507, 1782508, 1782509, 1782510
EPA 365.1 Rev. 2.0	03/23/2016	03/30/2016	Christopher Armour	04/01/2016	Lipi Saha	1782507, 1782508, 1782509, 1782510
EPA 365.1 Rev. 2.0 dissolved	03/23/2016			03/23/2016 14:43	Ping Hua	1782511
	03/23/2016			03/23/2016 14:44	Ping Hua	1782512
	03/23/2016			03/23/2016 14:45	Ping Hua	1782514
	03/23/2016			03/23/2016 15:26	Ping Hua	1782513
SM 2120 B	03/23/2016			03/23/2016 13:24	Rochelle Y Jackson	1782503
	03/23/2016			03/23/2016 13:25	Rochelle Y Jackson	1782504, 1782505
	03/23/2016			03/23/2016 13:26	Rochelle Y Jackson	1782506
SM 2320 B-97	03/23/2016			03/26/2016	Dale L. Simmons	1782503, 1782504, 1782505, 1782506
SM 2540 C-97	03/23/2016			03/24/2016	Yijie Li	1782503, 1782504, 1782505, 1782506
SM 2540 D-97	03/23/2016			03/24/2016	Yijie Li	1782503, 1782504, 1782505, 1782506
SM 4500 F-C-97	03/23/2016			03/26/2016	Dale L. Simmons	1782503, 1782504, 1782505, 1782506
SM 5310 B-00	03/23/2016			03/28/2016	Sofia Elnemr	1782507, 1782508, 1782509, 1782510