

Chemical Analysis Report

NE-DIST-2016-04-06-01

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

Event Description: **UEC NORTH**
Request ID: **RQ-2016-04-04-25**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 26-APR-2016 16:32

A handwritten signature in black ink, appearing to read "Liang Lin", 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: 27010056 Oyster @ Dixie

Collection Date/Time: 04/05/2016 10:05

Field ID: 27010056 OYSTER @ DIXIE

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786861	EPA 180.1 Rev. 2.0	Turbidity	16		NTU	P301752	
	SM 2320 B-97	Total Alkalinity	190		mg CaCO3/L	P301939	
	SM 2540 D-97	TSS	22		mg/L	P302401	
	SM 4500 F-C-97	Fluoride	0.37		mg F/L	P302378	
1786862	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P302133	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P302385	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P302431	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P302142	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P301990	
1786863	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P301721	

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: 27010182 Ponte Verda@ sawgrass

Collection Date/Time: 04/05/2016 11:10

Field ID: 27010182 Ponte Verda@ sawgrass

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786855	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P301752	
	EPA 300.0 Rev. 2.1	Chloride	100		mg Cl/L	P301955	
		Sulfate	67		mg SO4/L	P301957	
	SM 2120 B	Color (true)	83	A	PCU	P301737	
	SM 2320 B-97	Total Alkalinity	133		mg CaCO3/L	P301934	
	SM 2540 C-97	TDS	455		mg/L	P302480	
	SM 2540 D-97	TSS	2	I	mg/L	P302395	
	SM 4500 F-C-97	Fluoride	0.23		mg F/L	P301937	
1786857	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P302269	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P302338	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P302010	
	EPA 365.1 Rev. 2.0	Total-P	0.089		mg P/L	P302143	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P301988	
1786859	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.080		mg P/L	P301716	

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: 27010181 Lake Verda @ Corona

Collection Date/Time: 04/05/2016 11:30

Field ID: 27010181 Lake Verda @ Corona

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786856	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P301752	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P301955	
		Sulfate	80		mg SO4/L	P301957	
	SM 2120 B	Color (true)	55		PCU	P301737	
	SM 2320 B-97	Total Alkalinity	137		mg CaCO3/L	P301934	
	SM 2540 C-97	TDS	450		mg/L	P302480	
	SM 2540 D-97	TSS	8	I	mg/L	P302395	

Field ID: 27010181 Lake Verda @ Corona

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786856	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P301937	
1786858	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P302269	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P302338	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P302010	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P302143	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P301988	
1786860	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P301716	

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: P301752

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P301955

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P301957

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P302133

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P302269

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P302338

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P302385

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302010

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302431

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302142

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302143

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301716

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301721

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

Reference Method: SM 2120 B
Batch ID: P301737

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P301934

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

Reference Method: SM 2320 B-97
Batch ID: P301939

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
 Batch ID: P302480

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P302395

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P302401

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P301937

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
 Batch ID: P302378

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P301988

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

Reference Method: SM 5310 B-00
 Batch ID: P301990

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: P301955

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P301957

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: P301957

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302133

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302338

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302385

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302010

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302431

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: P302142

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302143

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.4		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301716

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301721

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

Reference Method: SM 2320 B-97
Batch ID: P301934

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

Reference Method: SM 2320 B-97
Batch ID: P301939

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

Reference Method: SM 4500 F-C-97
Batch ID: P301937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P302378

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.7		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P301988

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P301990

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301955

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301955

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786870	Chloride	103		P	90 - 110
1786910	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301957

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786870	Sulfate	102		P	90 - 110
1786910	Sulfate	109		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302133

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786862	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786782	Ammonia-N	102	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786873	Kjeldahl Nitrogen	91.8	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302385

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786833	Kjeldahl Nitrogen	104	96.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302010

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786857	NO2NO3-N	97.0	94.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302431

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786968	NO2NO3-N	98.8	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302142

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786828	Total-P	103	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302143

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786857	Total-P	97.9	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301716

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786775	O-Phosphate-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301721

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786973	O-Phosphate-P	101	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P301937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786477	Fluoride	98.5	98.5	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P302378

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786861	Fluoride	97.6	98.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P301988

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786781	Organic Carbon	95.2	96.6	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P301990

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786834	Organic Carbon	94.6	97.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P301752

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786777	Turbidity	4.00	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786870	Chloride	0.283	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301957

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786870	Sulfate	2.45	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302133

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786862	Ammonia-N	0.675	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786782	Ammonia-N	1.30	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786873	Kjeldahl Nitrogen	8.04	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302385

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786833	Kjeldahl Nitrogen	5.69	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786857	NO2NO3-N	2.61	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302431

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786968	NO2NO3-N	0.933	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302142

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786828	Total-P	1.79	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786857	Total-P	0.208	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786775	O-Phosphate-P	0.779	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301721

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786973	O-Phosphate-P	0.742	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P301737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786855	Color (true)	0.961	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P301934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786477	Total Alkalinity	0.122	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P301939

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786536	Total Alkalinity	0.0176	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P302480

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786779	TDS	3.55	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
 Batch ID: P301937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786477	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
 Batch ID: P302378

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786861	Fluoride	0.940	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P301988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786781	Organic Carbon	0.733	Spike	P	0 - 20

Reference Method: SM 5310 B-00
 Batch ID: P301990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786834	Organic Carbon	2.71	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: A68637
 Included Lab Sample IDs: 1786855, 1786856

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	101	P/P	90 - 110
Sulfate	99.8	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Run ID: A68691
 Included Lab Sample IDs: 1786859, 1786860, 1786863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	99.5	101	P/P	90 - 110

Reference Method: SM 2120 B
 Run ID: A68699
 Included Lab Sample IDs: 1786855, 1786856

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

Reference Method: SM 2120 B

Run ID: A68699

Included Lab Sample IDs: 1786855, 1786856

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	104	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A68705

Included Lab Sample IDs: 1786855, 1786856, 1786861

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

Reference Method: SM 2320 B-97

Run ID: A68768

Included Lab Sample IDs: 1786855, 1786856, 1786861

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

Reference Method: SM 4500 F-C-97

Run ID: A68768

Included Lab Sample IDs: 1786855, 1786856

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

Reference Method: SM 5310 B-00

Run ID: A68790

Included Lab Sample IDs: 1786857, 1786858, 1786862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	97.6	P/P	90 - 110
Organic Carbon	98.2	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68799

Included Lab Sample IDs: 1786857, 1786858

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.0	97.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A68841

Included Lab Sample IDs: 1786862

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68860

Included Lab Sample IDs: 1786857, 1786858, 1786862

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68860

Included Lab Sample IDs: 1786857, 1786858, 1786862

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A68885

Included Lab Sample IDs: 1786857, 1786858

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

Reference Method: SM 4500 F-C-97

Run ID: A68910

Included Lab Sample IDs: 1786861

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68930

Included Lab Sample IDs: 1786862

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68945

Included Lab Sample IDs: 1786862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.4	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68947

Included Lab Sample IDs: 1786857, 1786858

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.9	95.9	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				4.00	
EPA 300.0 Rev. 2.1	Chloride	103	103	104	0.283	
	Sulfate	102	102	109	2.45	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 350.1 Rev. 2.0	Ammonia-N	101	102	101			0.675
	Ammonia-N	99.8	102	104			1.30
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.1	91.8	99.5			8.04
	Kjeldahl Nitrogen	102	104	96.7			5.69
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	97.0	97.0	94.5			2.61
	NO ₂ NO ₃ -N	99.0	98.8	97.8			0.933
EPA 365.1 Rev. 2.0	Total-P	97.8	103	101			1.79
	Total-P	95.4	97.9	98.1			0.208
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	105	102	103			0.779
	O-Phosphate-P	102	101	102			0.742
SM 2120 B	Color (true)					0.961	
SM 2320 B-97	Total Alkalinity	102				0.122	
	Total Alkalinity	102				0.0176	
SM 2540 C-97	TDS					3.55	
SM 4500 F-C-97	Fluoride	98.3	98.5	98.5			0.0
	Fluoride	98.7	97.6	98.9			0.940
SM 5310 B-00	Organic Carbon	98.6	95.2	96.6			0.733
	Organic Carbon	101	94.6	97.9			2.71

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1786855, 1786856, 1786861
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1786855, 1786856
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1786855, 1786856
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1786857, 1786858, 1786862
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1786857, 1786858, 1786862
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1786857, 1786858, 1786862
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1786857, 1786858, 1786862
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1786859, 1786860, 1786863
SM 2120 B / E31780	True Color measured at 450 nm	1786855, 1786856
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1786855, 1786856, 1786861
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1786855, 1786856
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1786855, 1786856, 1786861
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1786855, 1786856, 1786861
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1786857, 1786858, 1786862

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	04/06/2016			04/06/2016 16:24	Sima Feizi	1786855, 1786856, 1786861
EPA 300.0 Rev. 2.1	04/06/2016			04/08/2016	Julia Storbeck	1786855, 1786856
EPA 350.1 Rev. 2.0	04/06/2016			04/12/2016	Diana M. Turner	1786862
	04/06/2016			04/14/2016	Diana M. Turner	1786857, 1786858
EPA 351.2 Rev. 2.0	04/06/2016	04/15/2016	Sofia Elnemr	04/18/2016	Virginia P. Brown	1786857, 1786858
	04/06/2016	04/18/2016	Sofia Elnemr	04/19/2016	Rochelle Y Jackson	1786862
EPA 353.2 Rev. 2.0	04/06/2016			04/11/2016	Diana M. Turner	1786857, 1786858
	04/06/2016			04/18/2016	Diana M. Turner	1786862
EPA 365.1 Rev. 2.0	04/06/2016	04/13/2016	Christopher Armour	04/13/2016	Lipi Saha	1786857, 1786858, 1786862
EPA 365.1 Rev. 2.0 dissolved	04/06/2016			04/06/2016 14:43	Julia Storbeck	1786859
	04/06/2016			04/06/2016 14:44	Julia Storbeck	1786860
	04/06/2016			04/06/2016 15:22	Julia Storbeck	1786863
SM 2120 B	04/06/2016			04/06/2016 15:53	Blanca Fach	1786855
	04/06/2016			04/06/2016 15:58	Blanca Fach	1786856
SM 2320 B-97	04/06/2016			04/08/2016	Dale L. Simmons	1786855, 1786856, 1786861
SM 2540 C-97	04/06/2016			04/11/2016	Yijie Li	1786855, 1786856
SM 2540 D-97	04/06/2016			04/11/2016	Yijie Li	1786855, 1786856, 1786861
SM 4500 F-C-97	04/06/2016			04/08/2016	Dale L. Simmons	1786855, 1786856
	04/06/2016			04/15/2016	Dale L. Simmons	1786861
SM 5310 B-00	04/06/2016			04/08/2016	Sofia Elnemr	1786857, 1786858
	04/06/2016			04/09/2016	Sofia Elnemr	1786862