Chemical Analysis Report

NW-DIST-2016-03-22-01

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

Event Description: **TMDL Bioassessment**
Request ID: **RQ-2016-02-01-57**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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160 W Government St
Suite 208A
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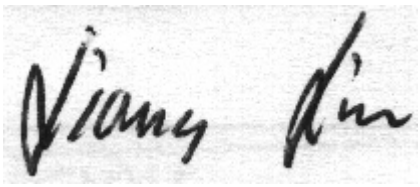
Certified by: Liang Lin, Environmental Administrator

Date Certified: 11-APR-2016 15:51



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: Williams Creek below Frankfort Ave. **Collection Date/Time: 03/21/2016 12:00**

Field ID: G4NW0198 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1782233	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P300845	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P300934	
		Sulfate	4.3		mg SO4/L	P300936	
	SM 2120 B	Color (true)	230		PCU	P300802	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P301441	
	SM 2540 C-97	TDS	36		mg/L	P301225	
	SM 2540 D-97	TSS	2	U	mg/L	P301153	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P301092	
1782236	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P301332	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P301245	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P301006	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P301257	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P301142	
1782239	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P300815	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: Jackson Cr @ Corry Station & Prieto **Collection Date/Time: 03/21/2016 14:35**

Field ID: G4NW0379 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1782234	EPA 180.1 Rev. 2.0	Turbidity	7.9		NTU	P300845	
	EPA 300.0 Rev. 2.1	Chloride	10		mg Cl/L	P300934	
		Sulfate	8.9		mg SO4/L	P300936	
	SM 2120 B	Color (true)	26		PCU	P300802	
	SM 2320 B-97	Total Alkalinity	18	A	mg CaCO3/L	P301441	
	SM 2540 C-97	TDS	59		mg/L	P301225	
	SM 2540 D-97	TSS	6	I	mg/L	P301153	
	SM 4500 F-C-97	Fluoride	0.042	I	mg F/L	P301092	
1782237	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P301332	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38		mg N/L	P301273	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.1		mg N/L	P301006	
	EPA 365.1 Rev. 2.0	Total-P	0.037		mg P/L	P301257	
	SM 5310 B-00	Organic Carbon	4.3		mg C/L	P301142	
1782240	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.01	I	mg P/L	P300815	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 04/06/2016.

Sample Location: Jackson Cr @ Corry Station & Prieto **Collection Date/Time: 03/21/2016 14:40**

Field ID: G4NW0379DUPLICATE Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1782235	EPA 180.1 Rev. 2.0	Turbidity	9.1		NTU	P300845	

Field ID: G4NW0379DUPLICATE Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1782235	EPA 300.0 Rev. 2.1	Chloride	10		mg Cl/L	P300934	
		Sulfate	9.0		mg SO4/L	P300936	
	SM 2120 B	Color (true)	28		PCU	P300802	
	SM 2320 B-97	Total Alkalinity	20		mg CaCO3/L	P301441	
	SM 2540 C-97	TDS	64		mg/L	P301225	
	SM 2540 D-97	TSS	7	I	mg/L	P301153	
	SM 4500 F-C-97	Fluoride	0.041	I	mg F/L	P301092	
1782238	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P301332	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P301273	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.1		mg N/L	P301006	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P301257	
	SM 5310 B-00	Organic Carbon	4.8		mg C/L	P301142	
1782241	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.011	Q	mg P/L	P301071	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 04/06/2016.
EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample was reanalyzed out of holding time due to analytical difficulties.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P300845

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300934

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300936

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301332

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301245

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301273

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301006

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301257

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300815

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301071

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

Reference Method: SM 2120 B
Batch ID: P300802

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P301441

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

Reference Method: SM 2540 C-97
Batch ID: P301225

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P301153

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P301092

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P301142

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: P300934

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300936

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301332

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301245

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301273

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.3		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301006

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301257

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301257

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.3		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300815

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301071

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

Reference Method: SM 2320 B-97
Batch ID: P301441

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

Reference Method: SM 4500 F-C-97
Batch ID: P301092

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.2		P	94 - 108

Reference Method: SM 5310 B-00
Batch ID: P301142

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300934

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782205	Chloride	101		P	90 - 110
1782234	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300936

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782205	Sulfate	99.2		P	90 - 110
1782234	Sulfate	98.9		P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782166	Kjeldahl Nitrogen	92.0	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301273

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782237	Kjeldahl Nitrogen	97.3	92.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301006

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782211	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301257

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782209	Total-P	103	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300815

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782240	O-Phosphate-P	96.2	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783503	O-Phosphate-P	98.8	98.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P301092

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782234	Fluoride	95.3	95.9	P/P	94 - 107

Reference Method: SM 5310 B-00
Batch ID: P301142

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1782135	Organic Carbon	102		P	85 - 115

Quality Assurance Report
Precision

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P300845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782205	Turbidity	6.21	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782205	Chloride	0.0823	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300936

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782205	Sulfate	0.847	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301332

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782212	Ammonia-N	0.643	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782166	Kjeldahl Nitrogen	5.52	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301273

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782237	Kjeldahl Nitrogen	3.86	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301006

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782211	NO2NO3-N	0.917	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782209	Total-P	4.02	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782240	O-Phosphate-P	2.05	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783503	O-Phosphate-P	0.229	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P300802

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782245	Color (true)	0.415	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P301441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782234	Total Alkalinity	1.87	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P301225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782242	TDS	7.22	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P301092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782234	Fluoride	0.536	Spike	P	0 - 3.7

Reference Method: SM 5310 B-00
Batch ID: P301142

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1782135	Organic Carbon	0.267	Spike	P	0 - 20

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

Quality Assurance Report
Calibration Verification

Quality Assurance Report
Calibration Verification

Reference Method: SM 2120 B
Run ID: A68373
Included Lab Sample IDs: 1782233, 1782234, 1782235

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	95.0	98.3	P/P	90 - 115
Color (true)	98.3	96.0	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A68375
Included Lab Sample IDs: 1782239, 1782240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.0	97.8	P/P	90 - 110
O-Phosphate-P	99.0	97.1	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A68388
Included Lab Sample IDs: 1782233, 1782234, 1782235

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A68401
Included Lab Sample IDs: 1782233, 1782234, 1782235

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.4	P/P	90 - 110
Chloride	99.4	101	P/P	90 - 110
Sulfate	96.8	99.5	P/P	90 - 110
Sulfate	98.7	96.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A68424
Included Lab Sample IDs: 1782236, 1782237, 1782238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A68446
Included Lab Sample IDs: 1782241

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	99.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A68457
Included Lab Sample IDs: 1782233, 1782234, 1782235

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	98.0	P/P	90 - 110
Fluoride	99.5	99.1	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A68477
Included Lab Sample IDs: 1782236, 1782237, 1782238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.2	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A68548
Included Lab Sample IDs: 1782236, 1782237, 1782238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A68591
Included Lab Sample IDs: 1782236, 1782237, 1782238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	97.8	P/P	90 - 110
Total-P	99.8	98.2	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A68600
Included Lab Sample IDs: 1782233, 1782234, 1782235

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A68629
Included Lab Sample IDs: 1782236

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.5	96.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A68631
Included Lab Sample IDs: 1782237, 1782238

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

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					6.21	
EPA 300.0 Rev. 2.1	Chloride	102	101	102		0.0823	

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 300.0 Rev. 2.1	Sulfate	99.2	99.2	98.9		0.847	
EPA 350.1 Rev. 2.0	Ammonia-N	98.5					0.643
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.9	92.0	99.0			5.52
	Kjeldahl Nitrogen	97.3	97.3	92.4			3.86
EPA 353.2 Rev. 2.0	NO2NO3-N	105	100	101			0.917
EPA 365.1 Rev. 2.0	Total-P	98.3	103	98.4			4.02
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	96.2	98.4			2.05
	O-Phosphate-P	101	98.8	98.5			0.229
SM 2120 B	Color (true)					0.415	
SM 2320 B-97	Total Alkalinity	102				1.87	
SM 2540 C-97	TDS					7.22	
SM 4500 F-C-97	Fluoride	96.2	95.3	95.9			0.536
SM 5310 B-00	Organic Carbon	100	102				0.267

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1782233, 1782234, 1782235
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1782233, 1782234, 1782235
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1782233, 1782234, 1782235
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1782236, 1782237, 1782238
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1782236, 1782237, 1782238
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1782236, 1782237, 1782238
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1782236, 1782237, 1782238
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1782239, 1782240, 1782241
SM 2120 B / E31780	True Color measured at 450 nm	1782233, 1782234, 1782235
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1782233, 1782234, 1782235
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1782233, 1782234, 1782235
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1782233, 1782234, 1782235
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1782233, 1782234, 1782235
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1782236, 1782237, 1782238

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	03/22/2016			03/22/2016 15:57	Blanca Fach	1782233, 1782234, 1782235
EPA 300.0 Rev. 2.1	03/22/2016			03/24/2016	Julia Storbeck	1782233, 1782234, 1782235
EPA 350.1 Rev. 2.0	03/22/2016			03/30/2016	Diana M. Turner	1782236, 1782237, 1782238
EPA 351.2 Rev. 2.0	03/22/2016	03/30/2016	Sofia Elnemr	04/04/2016	Virginia P. Brown	1782236, 1782237, 1782238
EPA 353.2 Rev. 2.0	03/22/2016			03/24/2016	Peter D. Kaus	1782236, 1782237, 1782238
EPA 365.1 Rev. 2.0	03/22/2016	03/30/2016	Christopher Armour	04/01/2016	Lipi Saha	1782236, 1782237, 1782238
EPA 365.1 Rev. 2.0 dissolved	03/22/2016			03/22/2016 14:28	Ping Hua	1782240
	03/22/2016			03/22/2016 14:55	Ping Hua	1782239
	03/22/2016			03/25/2016 15:05	Ping Hua	1782241
SM 2120 B	03/22/2016			03/22/2016 14:41	Rochelle Y Jackson	1782234
	03/22/2016			03/22/2016 14:42	Rochelle Y Jackson	1782235
	03/22/2016			03/22/2016 14:51	Rochelle Y Jackson	1782233
SM 2320 B-97	03/22/2016			03/29/2016	Dale L. Simmons	1782233, 1782234, 1782235
SM 2540 C-97	03/22/2016			03/24/2016	Yijie Li	1782233, 1782234, 1782235
SM 2540 D-97	03/22/2016			03/24/2016	Yijie Li	1782233, 1782234, 1782235
SM 4500 F-C-97	03/22/2016			03/25/2016	Dale L. Simmons	1782233, 1782234, 1782235
SM 5310 B-00	03/22/2016			03/26/2016	Sofia Elnemr	1782236, 1782237, 1782238