Chemical Analysis Report

SO-DIST-2016-04-12-01

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

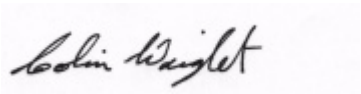
Event Description: **SMP-Highlands Lakes**
Request ID: **RQ-2016-04-04-11**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: Christopher Link

For additional information please contact
Timothy W. Fitzpatrick
Liang-Tsair Lin, Ph.D.
Colin Wright, Ph.D.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Environmental Administrator

Date Certified: 10-MAY-2016 16:52



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: Lake Adelaide Center South **Collection Date/Time: 04/11/2016 13:35**

Field ID: SD041116-4 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1788401	EPA 180.1 Rev. 2.0	Turbidity	2.2	A	NTU	P302121	
	EPA 300.0 Rev. 2.1	Chloride	17	A	mg Cl/L	P302309	
		Sulfate	14	A	mg SO4/L	P302315	
	SM 2120 B	Color (true)	50	A	PCU	P302076	
	SM 2320 B-97	Total Alkalinity	6.6		mg CaCO3/L	P302423	
	SM 2540 C-97	TDS	86	Q	mg/L	P303912	
	SM 2540 D-97	TSS	3	I	mg/L	P302823	
	SM 4500 F-C-97	Fluoride	0.042	I	mg F/L	P302426	
1788404	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P302564	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P303024	MS
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P302489	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P302368	
1788407	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302104	

Ref. Method and Comment:
SM 2540 C-97: Sample reanalyzed out of holding time due to analytical difficulties.
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: Red Water Lake at Center **Collection Date/Time: 04/11/2016 10:40**

Field ID: SD041116-6 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1788402	EPA 180.1 Rev. 2.0	Turbidity	8.1		NTU	P302121	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P302309	
		Sulfate	31		mg SO4/L	P302315	
	SM 2120 B	Color (true)	22		PCU	P302076	
	SM 2320 B-97	Total Alkalinity	24	A	mg CaCO3/L	P302423	
	SM 2540 C-97	TDS	118		mg/L	P302836	
	SM 2540 D-97	TSS	8	I	mg/L	P302823	
	SM 4500 F-C-97	Fluoride	0.055	I	mg F/L	P302426	
1788405	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P302564	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1	J	mg N/L	P302758	MS
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P302489	
	SM 5310 B-00	Organic Carbon	8.6		mg C/L	P302368	
1788408	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302104	

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 351.2 Rev. 2.0: Refer to the narrative for an explanation of QC Codes.

Sample Location: Lake Adelaide Center South-Duplicate **Collection Date/Time: 04/11/2016 13:45**

Field ID: SD041116-7 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1788403	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P302121	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P302309	

Field ID: SD041116-7 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1788403	EPA 300.0 Rev. 2.1	Sulfate	14		mg SO4/L	P302315	
	SM 2120 B	Color (true)	48		PCU	P302076	
	SM 2320 B-97	Total Alkalinity	6.3		mg CaCO3/L	P302423	
	SM 2540 C-97	TDS	81		mg/L	P302836	
	SM 2540 D-97	TSS	3	I	mg/L	P302823	
	SM 4500 F-C-97	Fluoride	0.041	I	mg F/L	P302426	
1788406	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P302564	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P303024	MS
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P302489	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P302368	
1788409	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302104	

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.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P302121

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P302309

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P302315

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302564

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302758

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303024

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302489

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302104

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

Reference Method: SM 2120 B
Batch ID: P302076

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P302423

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

Reference Method: SM 2540 C-97
Batch ID: P302836

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P303912

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P302823

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P302426

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P302368

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: P302309

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P302315

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302564

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302758

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303024

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302489

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302104

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

Reference Method: SM 2320 B-97
Batch ID: P302423

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

Reference Method: SM 4500 F-C-97
Batch ID: P302426

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.0		P	92 - 103

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P302368

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P302309

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788401	Chloride	102		P	90 - 110
1788403	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P302315

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788401	Sulfate	97.6		P	90 - 110
1788403	Sulfate	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302758

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788405	Kjeldahl Nitrogen	89.9	89.4	F/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303024

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788977	Kjeldahl Nitrogen	91.8	85.1	P/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788389	Total-P	99.0	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302104

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788409	O-Phosphate-P	99.4	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P302426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788402	Fluoride	95.4	96.5	P/P	91 - 105

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P302368

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788275	Organic Carbon	95.8	94.9	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P302121

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788401	Turbidity	0.930	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P302309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788401	Chloride	0.110	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P302315

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788401	Sulfate	0.173	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788390	Ammonia-N	1.13	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302758

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788405	Kjeldahl Nitrogen	0.324	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303024

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788977	Kjeldahl Nitrogen	4.53	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788389	Total-P	2.14	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302104

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788409	O-Phosphate-P	0.901	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P302076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788401	Color (true)	2.63	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P302423

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788402	Total Alkalinity	0.0236	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P302836

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788388	TDS	4.12	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P303912

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794088	TDS	6.97	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P302426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788402	Fluoride	0.995	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P302368

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788275	Organic Carbon	0.813	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 300.0 Rev. 2.1
Run ID: A68804
Included Lab Sample IDs: 1788401, 1788402, 1788403

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	103	P/P	90 - 110
Chloride	103	103	P/P	90 - 110
Sulfate	101	98.8	P/P	90 - 110
Sulfate	99.3	101	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A68822
Included Lab Sample IDs: 1788401, 1788402, 1788403

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.8	100	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A68831
Included Lab Sample IDs: 1788407, 1788408, 1788409

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	99.8	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A68840
Included Lab Sample IDs: 1788401, 1788402, 1788403

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

Reference Method: SM 5310 B-00
Run ID: A68909
Included Lab Sample IDs: 1788404, 1788405, 1788406

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	96.6	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A68927
Included Lab Sample IDs: 1788401, 1788402, 1788403

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.7	103	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 4500 F-C-97
Run ID: A68927
Included Lab Sample IDs: 1788401, 1788402, 1788403

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A68974
Included Lab Sample IDs: 1788404, 1788405, 1788406

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A69019
Included Lab Sample IDs: 1788404, 1788405, 1788406

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A69078
Included Lab Sample IDs: 1788405

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.0	96.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A69201
Included Lab Sample IDs: 1788404, 1788406

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.8	94.3	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					0.930	
EPA 300.0 Rev. 2.1	Chloride	102	102	102		0.110	
	Sulfate	99.8	97.6	98.4		0.173	
EPA 350.1 Rev. 2.0	Ammonia-N	102					1.13
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	89.9	89.4			0.324
	Kjeldahl Nitrogen	102	91.8	85.1			4.53
EPA 365.1 Rev. 2.0	Total-P	95.5	99.0	101			2.14
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	105	99.4	100			0.901
SM 2120 B	Color (true)					2.63	
SM 2320 B-97	Total Alkalinity	102				0.0236	
SM 2540 C-97	TDS					4.12	

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
SM 2540 C-97	TDS					6.97	
SM 4500 F-C-97	Fluoride	98.0	95.4	96.5			0.995
SM 5310 B-00	Organic Carbon	96.6	95.8	94.9			0.813

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1788401, 1788402, 1788403
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1788401, 1788402, 1788403
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1788401, 1788402, 1788403
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1788404, 1788405, 1788406
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1788404, 1788405, 1788406
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1788404, 1788405, 1788406
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1788407, 1788408, 1788409
SM 2120 B / E31780	True Color measured at 450 nm	1788401, 1788402, 1788403
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1788401, 1788402, 1788403
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1788401, 1788402, 1788403
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1788401, 1788402, 1788403
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1788401, 1788402, 1788403
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1788404, 1788405, 1788406

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	04/12/2016			04/12/2016 15:22	Sima Feizi	1788401, 1788402, 1788403
EPA 300.0 Rev. 2.1	04/12/2016			04/14/2016	Ping Hua	1788401, 1788402, 1788403
EPA 350.1 Rev. 2.0	04/12/2016			04/19/2016	Diana M. Turner	1788404, 1788405, 1788406
EPA 351.2 Rev. 2.0	04/12/2016	04/22/2016	Sofia Elnemr	04/25/2016	Virginia P. Brown	1788405
	04/12/2016	04/27/2016	Sofia Elnemr	04/29/2016	Christopher Armour	1788404, 1788406
EPA 365.1 Rev. 2.0	04/12/2016	04/19/2016	Lipi Saha	04/20/2016	Lipi Saha	1788404, 1788405, 1788406
EPA 365.1 Rev. 2.0 dissolved	04/12/2016			04/12/2016 14:08	Julia Storbeck	1788409
	04/12/2016			04/12/2016 15:12	Julia Storbeck	1788407
	04/12/2016			04/12/2016 15:13	Julia Storbeck	1788408
SM 2120 B	04/12/2016			04/12/2016 13:39	Rochelle Y Jackson	1788401
	04/12/2016			04/12/2016 13:40	Rochelle Y Jackson	1788402
	04/12/2016			04/12/2016 13:41	Rochelle Y Jackson	1788403
SM 2320 B-97	04/12/2016			04/15/2016	Dale L. Simmons	1788401, 1788402
	04/12/2016			04/16/2016	Dale L. Simmons	1788403
SM 2540 C-97	04/12/2016			04/15/2016	Yijie Li	1788402, 1788403
	04/12/2016			05/03/2016	Yijie Li	1788401
SM 2540 D-97	04/12/2016			04/15/2016	Yijie Li	1788401, 1788402, 1788403
SM 4500 F-C-97	04/12/2016			04/15/2016	Dale L. Simmons	1788401, 1788402
	04/12/2016			04/16/2016	Dale L. Simmons	1788403
SM 5310 B-00	04/12/2016			04/15/2016	Sofia Elnemr	1788404, 1788405, 1788406