

Chemical Analysis Report

SO-DIST-2016-06-30-01

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-2016-06-06-16**

Customer: **SO-DIST**

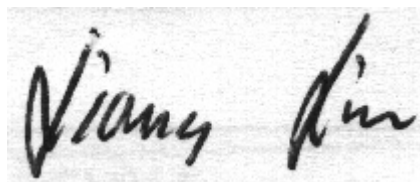
Project ID: **SMP**

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

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: Liang Lin, Environmental Administrator

Date Certified: 22-JUL-2016 14:55

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

NON-CONFORMANCE REPORT INCLUDED

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: HILL LAKE @ EAST SIDE

Collection Date/Time: 06/28/2016 11:35

Field ID: G4HL062016-15

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1812468	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P307191	
	EPA 300.0 Rev. 2.1	Chloride	8.8		mg Cl/L	P307886	
		Sulfate	4.8		mg SO4/L	P307888	
	SM 2120 B	Color (true)	44	A	PCU	P307147	
	SM 2320 B-97	Total Alkalinity	4.1		mg CaCO3/L	P307616	
	SM 2540 C-97	TDS	41		mg/L	P307695	
	SM 2540 D-97	TSS	3	I	mg/L	P307688	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P307620	
1812470	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P307421	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P307263	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P307383	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P307320	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P307806	
1812472	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	UQ	mg P/L	P307158	

Ref. Method and Comment:

SM 2540 C-97: The reported result is consistent with the laboratory conductivity, 57 umhos/cm.

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

Sample Location: HILL LAKE @ SOUTH SIDE

Collection Date/Time: 06/28/2016 11:30

Field ID: G4HL062016-14

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1812469	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P307191	
	EPA 300.0 Rev. 2.1	Chloride	8.8		mg Cl/L	P307886	
		Sulfate	4.8		mg SO4/L	P307888	
	SM 2120 B	Color (true)	44		PCU	P307147	
	SM 2320 B-97	Total Alkalinity	4.2		mg CaCO3/L	P307616	
	SM 2540 C-97	TDS	42		mg/L	P307696	
	SM 2540 D-97	TSS	2	I	mg/L	P307688	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P307620	
1812471	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P307421	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P307263	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.033		mg N/L	P307383	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P307320	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P307806	
1812473	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	UQ	mg P/L	P307158	

Ref. Method and Comment:

SM 2540 C-97: The reported result is consistent with the laboratory conductivity, 57 umhos/cm.

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

Non-Conformance Report

NCR ID: 5920

Event(s)

Job(s)

Sample(s)

Test(s)

Non-Conformance Report

NCR ID: 5920

Event(s)

SO-DIST-2016-06-30-01

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: FedEx tracking code: 810019178387
Short hold samples: TURBIDITY, W-COLOR, CHLSUITE-W, W-PO4-F.
Resolution: Biology and Chemistry supervisors were notified by phone and email.

Authorised by/Date: Kathryn Holland 7/18/2016

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry Tim Fitzpatrick (850) 245-8085
Biology Cheryl Swanson (850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P307191

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307886

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307888

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307421

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307263

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307383

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307320

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307158

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

Reference Method: SM 2120 B
Batch ID: P307147

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P307616

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

Reference Method: SM 2540 C-97
Batch ID: P307695

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P307696

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P307688

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P307620

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P307806

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: P307886

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P307888

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: P307421

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: P307263

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P307383

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P307320

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P307158

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

Reference Method: SM 2320 B-97
 Batch ID: P307616

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

Reference Method: SM 4500 F-C-97
 Batch ID: P307620

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P307806

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	104		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P307886

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812030	Chloride	96.8		P	90 - 110
1812200	Chloride	98.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P307888

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812030	Sulfate	99.4		P	90 - 110
1812200	Sulfate	99.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P307421

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812470	Ammonia-N	97.9	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P307263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812502	Kjeldahl Nitrogen	90.3	93.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P307383

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812471	NO2NO3-N	99.1	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P307320

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812412	Total-P	99.6	95.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P307158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812324	O-Phosphate-P	97.2	99.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P307620

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812263	Fluoride	99.2	98.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P307806

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812470	Organic Carbon	98.0	99.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P307191

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812333	Turbidity	5.35	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307886

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812030	Chloride	0.239	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307888

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812030	Sulfate	0.317	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307421

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812470	Ammonia-N	1.49	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812502	Kjeldahl Nitrogen	2.02	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812471	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307320

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812412	Total-P	4.06	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812324	O-Phosphate-P	1.94	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P307147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812468	Color (true)	3.00	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P307616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812263	Total Alkalinity	0.0901	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P307695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812261	TDS	0.858	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P307696

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812263	TDS	5.61	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P307620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812263	Fluoride	0.466	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P307806

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812470	Organic Carbon	1.11	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: SM 2120 B
Run ID: A70321
Included Lab Sample IDs: 1812468, 1812469

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	89.5	90.4	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A70326
Included Lab Sample IDs: 1812472, 1812473

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.8	99.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A70348
Included Lab Sample IDs: 1812468, 1812469

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A70411
Included Lab Sample IDs: 1812470, 1812471

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A70419
Included Lab Sample IDs: 1812470, 1812471

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.8	P/P	90 - 110
Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A70434
Included Lab Sample IDs: 1812470, 1812471

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A70469
Included Lab Sample IDs: 1812470, 1812471

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.4	97.1	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A70474
Included Lab Sample IDs: 1812468, 1812469

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A70474
Included Lab Sample IDs: 1812468, 1812469

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

Reference Method: SM 5310 B-00
Run ID: A70521
Included Lab Sample IDs: 1812470, 1812471

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.9	99.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A70540
Included Lab Sample IDs: 1812468, 1812469

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.6	101	P/P	90 - 110
Sulfate	94.5	100	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	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				5.35	
EPA 300.0 Rev. 2.1	Chloride	99.0	96.8 98.6		0.239	
	Sulfate	99.8	99.4 99.7		0.317	
EPA 350.1 Rev. 2.0	Ammonia-N	98.5	97.9 99.5			1.49
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.5	90.3 93.7			2.02
EPA 353.2 Rev. 2.0	NO2NO3-N	104	99.1 99.1			0.0
EPA 365.1 Rev. 2.0	Total-P	101	99.6 95.4			4.06
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.8	97.2 99.1			1.94
SM 2120 B	Color (true)				3.00	
SM 2320 B-97	Total Alkalinity	103			0.0901	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
SM 2540 C-97	TDS					0.858	
	TDS					5.61	
SM 4500 F-C-97	Fluoride	98.9	99.2	98.6			0.466
SM 5310 B-00	Organic Carbon	104	98.0	99.6			1.11

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1812468, 1812469
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1812468, 1812469
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1812468, 1812469
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1812470, 1812471
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1812470, 1812471
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1812470, 1812471
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1812470, 1812471
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1812472, 1812473
SM 2120 B / E31780	True Color measured at 450 nm	1812468, 1812469
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1812468, 1812469
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1812468, 1812469
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1812468, 1812469
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1812468, 1812469
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1812470, 1812471

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	06/30/2016			06/30/2016 11:15	Sima Feizi	1812468
	06/30/2016			06/30/2016 11:17	Sima Feizi	1812469
EPA 300.0 Rev. 2.1	06/30/2016			07/13/2016	Ping Hua	1812468, 1812469
EPA 350.1 Rev. 2.0	06/30/2016			07/06/2016	Diana M. Turner	1812470, 1812471
EPA 351.2 Rev. 2.0	06/30/2016	07/05/2016	Sofia Elnemr	07/07/2016	Christopher Armour	1812470, 1812471
EPA 353.2 Rev. 2.0	06/30/2016			07/06/2016	Beverly Y. Sanders	1812470, 1812471
EPA 365.1 Rev. 2.0	06/30/2016	07/05/2016	Vijayalakshmi Reddy	07/07/2016	Lipi Saha	1812470, 1812471
EPA 365.1 Rev. 2.0 dissolved	06/30/2016			06/30/2016 14:40	Julia Storbeck	1812472
	06/30/2016			06/30/2016 14:41	Julia Storbeck	1812473
SM 2120 B	06/30/2016			06/30/2016 11:23	Rochelle Y Jackson	1812468, 1812469
SM 2320 B-97	06/30/2016			07/08/2016	Dale L. Simmons	1812468, 1812469
SM 2540 C-97	06/30/2016			07/01/2016	Yijie Li	1812468, 1812469
SM 2540 D-97	06/30/2016			07/01/2016	Yijie Li	1812468, 1812469
SM 4500 F-C-97	06/30/2016			07/08/2016	Dale L. Simmons	1812468, 1812469
SM 5310 B-00	06/30/2016			07/12/2016	Sofia Elnemr	1812470, 1812471