Chemical Analysis Report

TLH-ROC-2017-12-19-02

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

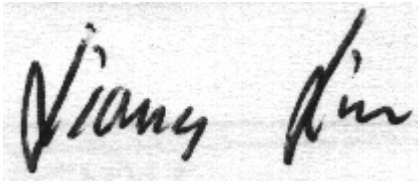
Event Description: **SMP Freshwater Kit A**
Request ID: **RQ-2017-10-30-54**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Michael Eckles

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

Certified by: Liang Lin, Environmental Administrator

Date Certified: 05-JAN-2018 15:07



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: CHIPOLA RIVER @ NW LAMB EDDY RD. **Collection Date/Time: 12/19/2017 11:00**

Field ID: G2TLHR0011-2017-05 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1955138	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P337222	
	EPA 300.0 Rev. 2.1	Chloride	5.5		mg Cl/L	P337391	
	SM 2120 B	Color (true)	5.9	I	PCU	P337229	
	SM 2320 B-97	Total Alkalinity	119		mg CaCO3/L	P337380	
	SM 2540 C-97	TDS	135		mg/L	P337497	
	SM 2540 D-97	TSS	2	I	mg/L	P337664	
	SM 4500 F-C-97	Fluoride	0.059	I	mg F/L	P337383	
1955140	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P337698	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20		mg N/L	P337331	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.5		mg N/L	P337466	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P337366	
	SM 5310 B-00	Organic Carbon	1.1		mg C/L	P337473	
1955142	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P337265	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: BLUE HOLE SPRING VENT **Collection Date/Time: 12/19/2017 12:25**

Field ID: G2TLHR0009-2017-05 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1955139	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P337222	
	EPA 300.0 Rev. 2.1	Chloride	4.3		mg Cl/L	P337391	
	SM 2120 B	Color (true)	2.5	U	PCU	P337229	
	SM 2320 B-97	Total Alkalinity	163	A	mg CaCO3/L	P337381	
	SM 2540 C-97	TDS	163		mg/L	P337497	
	SM 2540 D-97	TSS	3	I	mg/L	P337664	
	SM 4500 F-C-97	Fluoride	0.081	I	mg F/L	P337384	
1955141	EPA 350.1 Rev. 2.0	Ammonia-N	0.006	Y	mg N/L	P337698	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	IY	mg N/L	P337331	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.42	Y	mg N/L	P337466	
	EPA 365.1 Rev. 2.0	Total-P	0.022	Y	mg P/L	P337366	
	SM 5310 B-00	Organic Carbon	0.53	IY	mg C/L	P337473	
1955143	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P337265	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.
EPA 351.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.
EPA 353.2 Rev. 2.0: NO2NO3-N: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.
EPA 365.1 Rev. 2.0: Total-P: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.
SM 5310 B-00: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

Non-Conformance Report

NCR ID: 6824

Event(s)	Job(s)	Sample(s)	Test(s)
TLH-ROC-2017-12-19-02	TLH-2017-12-19-83	1955141	

Non-Conformance Report

NCR ID: 6824

Event(s)	Job(s)	Sample(s)	Test(s)

NCR Type: SHIPPING/RECEIVING **NCR Category: Preservation Not Intact**

Observation: Sample(s) not preserved to pH < 2.

Resolution: Sample preserved in the laboratory with sulfuric acid.

Authorized by/Date: Joshua Ayres 12/20/2017

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

Chemistry	Colin Wright	(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: P337222

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337391

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337698

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P337331

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337466

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337366

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337265

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

Reference Method: SM 2120 B
Batch ID: P337229

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P337380

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

Reference Method: SM 2320 B-97
Batch ID: P337381

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

Reference Method: SM 2540 C-97
Batch ID: P337497

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P337664

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P337383

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P337384

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P337473

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: P337391

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337698

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: P337331

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337466

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337366

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337265

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

Reference Method: SM 2320 B-97
Batch ID: P337380

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P337381

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P337383

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	92 - 103

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P337384

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P337473

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1955064	Chloride	100		P	90 - 110
1955065	Chloride	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1955140	Ammonia-N	98.6	90.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P337331

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1955070	Kjeldahl Nitrogen	97.2	94.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1955069	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337366

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1955141	Total-P	99.4	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1955142	O-Phosphate-P	99.0	100	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P337383

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954981	Fluoride	96.6	95.2	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P337384

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1955139	Fluoride	95.4	94.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P337473

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1955140	Organic Carbon	97.1	99.4	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P337222

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955148	Turbidity	1.64	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955064	Chloride	3.77	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955140	Ammonia-N	7.48	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P337331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955070	Kjeldahl Nitrogen	1.99	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955069	NO2NO3-N	0.134	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337366

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955141	Total-P	0.764	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955142	O-Phosphate-P	1.29	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P337229

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955149	Color (true)	2.06	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P337380

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954981	Total Alkalinity	0.591	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P337381

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955139	Total Alkalinity	0.0250	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P337497

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955066	TDS	2.90	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P337383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954981	Fluoride	0.986	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P337384

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955139	Fluoride	0.953	Spike	P	0 - 3.0

Quality Assurance Report
Precision

Reference Method: SM 5310 B-00
Batch ID: P337473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955140	Organic Carbon	2.27	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 180.1 Rev. 2.0
Run ID: A81014
Included Lab Sample IDs: 1955138, 1955139

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

Reference Method: SM 2120 B
Run ID: A81015
Included Lab Sample IDs: 1955138, 1955139

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.8	101	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A81036
Included Lab Sample IDs: 1955142, 1955143

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.5	99.6	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A81083
Included Lab Sample IDs: 1955138, 1955139

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.6	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A81083
Included Lab Sample IDs: 1955138, 1955139

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	98.1	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A81087
Included Lab Sample IDs: 1955138, 1955139

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	107	106	P/P	90 - 110
Chloride	108	107	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A81107
Included Lab Sample IDs: 1955140, 1955141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A81111
Included Lab Sample IDs: 1955140, 1955141

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A81116
Included Lab Sample IDs: 1955140, 1955141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A81124
Included Lab Sample IDs: 1955140, 1955141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	96.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A81225
Included Lab Sample IDs: 1955140, 1955141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	102	P/P	90 - 110
Ammonia-N	102	102	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					1.64	
EPA 300.0 Rev. 2.1	Chloride	105	100	102		3.77	
EPA 350.1 Rev. 2.0	Ammonia-N	102	98.6	90.1			7.48
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.8	97.2	94.9			1.99
EPA 353.2 Rev. 2.0	NO2NO3-N	101	100	100			0.134
EPA 365.1 Rev. 2.0	Total-P	99.2	99.4	98.6			0.764
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.0	99.0	100			1.29
SM 2120 B	Color (true)					2.06	
SM 2320 B-97	Total Alkalinity	100				0.591	
	Total Alkalinity	101				0.0250	

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
SM 2540 C-97	TDS					2.90	
SM 4500 F-C-97	Fluoride	96.7	96.6	95.2			0.986
	Fluoride	95.3	95.4	94.3			0.953
SM 5310 B-00	Organic Carbon	95.2	97.1	99.4			2.27

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1955138, 1955139
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1955138, 1955139
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1955140, 1955141
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1955140, 1955141
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1955140, 1955141
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1955140, 1955141
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1955142, 1955143
SM 2120 B / E31780	True Color measured at 450 nm	1955138, 1955139
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1955138, 1955139
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1955138, 1955139
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1955138, 1955139
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1955138, 1955139
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1955140, 1955141

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	12/19/2017			12/19/2017 16:37	DeAsia Armster	1955138, 1955139
EPA 300.0 Rev. 2.1	12/19/2017			12/21/2017	Julia Storbeck	1955138, 1955139
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