

Chemical Analysis Report

NE-DIST-2017-10-26-01

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

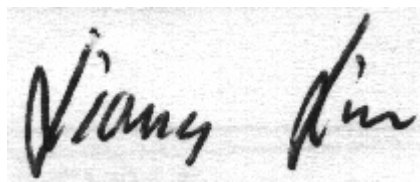
Event Description: **SUW 1-9/12/17**
Request ID: **RQ-2017-09-11-18**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
NE ROC
8800 Baymeadows Way W
Suite 100
Jacksonville, FL 32256-7577
Attn: Nicole Frederick

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: 16-NOV-2017 13:41

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

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: ROCKY CR @ WOODPECKER RD

Collection Date/Time: 10/25/2017 09:55

Field ID: G1NE025010252017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1940140	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P334127	
	EPA 300.0 Rev. 2.1	Chloride	7.2		mg Cl/L	P334435	
		Sulfate	0.45	I	mg SO4/L	P334438	
	SM 2120 B	Color (true)	1.0E+03		PCU	P334151	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P334234	
	SM 2540 C-97	TDS	189		mg/L	P334419	
	SM 2540 D-97	TSS	2	UA	mg/L	P334963	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P334461	
1940144	EPA 350.1 Rev. 2.0	Ammonia-N	0.21		mg N/L	P334644	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.5		mg N/L	P334722	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P334367	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P334204	
	SM 5310 B-00	Organic Carbon	100		mg C/L	P334707	
1940148	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.16		mg P/L	P334135	

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: JERRY BRANCH @ SE CR 25A

Collection Date/Time: 10/25/2017 11:10

Field ID: G1NE0455 10242017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1940141	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P334127	
	EPA 300.0 Rev. 2.1	Chloride	7.2		mg Cl/L	P334435	
		Sulfate	2.9		mg SO4/L	P334438	
	SM 2120 B	Color (true)	430		PCU	P334151	
	SM 2320 B-97	Total Alkalinity	12		mg CaCO3/L	P334234	
	SM 2540 C-97	TDS	89		mg/L	P334419	
	SM 2540 D-97	TSS	2	U	mg/L	P334963	
	SM 4500 F-C-97	Fluoride	0.34		mg F/L	P334461	
1940145	EPA 350.1 Rev. 2.0	Ammonia-N	0.043		mg N/L	P334644	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P334452	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.041		mg N/L	P334367	
	EPA 365.1 Rev. 2.0	Total-P	0.46		mg P/L	P334204	
	SM 5310 B-00	Organic Carbon	31		mg C/L	P334707	
1940149	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.42		mg P/L	P334135	

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: ROCKY CR @ CR 136

Collection Date/Time: 10/25/2017 11:55

Field ID: G1NE0234 10242017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1940142	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P334127	
	EPA 300.0 Rev. 2.1	Chloride	9.6		mg Cl/L	P334435	
		Sulfate	2.1		mg SO4/L	P334438	

Field ID: G1NE0234 10242017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1940142	SM 2120 B	Color (true)	440		PCU	P334151	
	SM 2320 B-97	Total Alkalinity	10		mg CaCO3/L	P334234	
	SM 2540 C-97	TDS	96		mg/L	P334419	
	SM 2540 D-97	TSS	2	U	mg/L	P334963	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P334461	
1940146	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P334644	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P334452	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.075		mg N/L	P334367	
	EPA 365.1 Rev. 2.0	Total-P	0.63		mg P/L	P334298	
	SM 5310 B-00	Organic Carbon	28		mg C/L	P334707	
1940150	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.59		mg P/L	P334135	

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: FIELD BLANK

Collection Date/Time: 10/25/2017 10:15

Field ID: 10232017

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1940143	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P334127	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P334435	
		Sulfate	0.20	U	mg SO4/L	P334438	
	SM 2120 B	Color (true)	2.5	U	PCU	P334151	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P334234	
	SM 2540 C-97	TDS	15	U	mg/L	P334419	
	SM 2540 D-97	TSS	2	U	mg/L	P334963	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P334461	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P334710	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P334452	
1940147	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P334367	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P334298	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P334707	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P334135	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0 dissolved: Total-P: The result was confirmed on 10/26/2017.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P334127

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334435

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334438

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334644

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334710

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334452

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334722

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334367

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334204

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334298

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: P334135

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

Reference Method: SM 2120 B
Batch ID: P334151

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P334234

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

Reference Method: SM 2540 C-97
Batch ID: P334419

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P334963

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P334461

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P334707

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: P334435

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334438

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334438

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334644

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334710

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334452

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334722

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334367

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334204

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334298

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	93.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334135

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P334234

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P334461

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

Reference Method: SM 5310 B-00
Batch ID: P334707

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334435

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940079	Chloride	106		P	90 - 110
1940108	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334438

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940079	Sulfate	103		P	90 - 110
1940108	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940114	Ammonia-N	102	99.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334710

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939709	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334452

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940127	Kjeldahl Nitrogen	104	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334722

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940759	Kjeldahl Nitrogen	86.4	96.4	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334367

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940113	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334204

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940127	Total-P	99.8	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940240	Total-P	99.0	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940116	O-Phosphate-P	96.9	99.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P334461

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940120	Fluoride	99.4	101	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P334707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940054	Organic Carbon	101	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P334127

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940121	Turbidity	4.65	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334435

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940108	Chloride	0.467	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334438

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940108	Sulfate	0.366	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334644

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940114	Ammonia-N	2.04	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334710

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939709	Ammonia-N	0.199	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940127	Kjeldahl Nitrogen	1.47	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334722

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940759	Kjeldahl Nitrogen	7.16	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940113	NO2NO3-N	0.375	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334204

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940127	Total-P	3.16	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P334298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940240	Total-P	0.339	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P334135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940116	O-Phosphate-P	2.65	Spike	P	0 - 20

Reference Method: SM 2120 B

Batch ID: P334151

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940126	Color (true)	1.09	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P334234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940120	Total Alkalinity	0.152	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97

Batch ID: P334419

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940198	TDS	3.11	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97

Batch ID: P334461

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940120	Fluoride	1.45	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00

Batch ID: P334707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940054	Organic Carbon	0.269	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: EPA 180.1 Rev. 2.0

Run ID: A79831

Included Lab Sample IDs: 1940140, 1940141, 1940142, 1940143

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A79834

Included Lab Sample IDs: 1940148, 1940149, 1940150, 1940151

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

Reference Method: SM 2120 B

Run ID: A79841

Included Lab Sample IDs: 1940140, 1940141, 1940142, 1940143

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	97.5	P/P	85 - 115
Color (true)	102	101	P/P	85 - 115

Reference Method: SM 2320 B-97

Run ID: A79869

Included Lab Sample IDs: 1940140, 1940141, 1940142, 1940143

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	99.3	P/P	90 - 110
Total Alkalinity	99.3	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79881

Included Lab Sample IDs: 1940144, 1940145

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79916

Included Lab Sample IDs: 1940144, 1940145, 1940146, 1940147

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A79937

Included Lab Sample IDs: 1940140, 1940141, 1940142, 1940143

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	106	106	P/P	90 - 110
Sulfate	104	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A79949

Included Lab Sample IDs: 1940140, 1940141, 1940142, 1940143

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79977

Included Lab Sample IDs: 1940147

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79994

Included Lab Sample IDs: 1940146

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A80022

Included Lab Sample IDs: 1940144, 1940145, 1940146

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.8	P/P	90 - 110
Ammonia-N	99.4	99.6	P/P	90 - 110
Ammonia-N	99.6	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80031

Included Lab Sample IDs: 1940145, 1940146, 1940147

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

Reference Method: SM 5310 B-00

Run ID: A80051

Included Lab Sample IDs: 1940144, 1940145, 1940146, 1940147

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A80055

Included Lab Sample IDs: 1940147

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80169

Included Lab Sample IDs: 1940144

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80169

Included Lab Sample IDs: 1940144

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.4	94.8	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				4.65	
EPA 300.0 Rev. 2.1	Chloride	106	105 106		0.467	
	Sulfate	103	103 103		0.366	
EPA 350.1 Rev. 2.0	Ammonia-N	101	102 99.7			2.04
	Ammonia-N	95.4	102 102			0.199
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.8	104 102			1.47
	Kjeldahl Nitrogen	101	86.4 96.4			7.16
EPA 353.2 Rev. 2.0	NO2NO3-N	104	101 101			0.375
EPA 365.1 Rev. 2.0	Total-P	105	99.8 103			3.16
	Total-P	93.9	99.0 98.6			0.339
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.0	96.9 99.5			2.65
SM 2120 B	Color (true)				1.09	
SM 2320 B-97	Total Alkalinity	102			0.152	
SM 2540 C-97	TDS				3.11	
SM 4500 F-C-97	Fluoride	98.7	99.4 101			1.45
SM 5310 B-00	Organic Carbon	102	101 102			0.269

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1940140, 1940141, 1940142, 1940143
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1940140, 1940141, 1940142, 1940143
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1940140, 1940141, 1940142, 1940143
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1940144, 1940145, 1940146, 1940147
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1940144, 1940145, 1940146, 1940147
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1940144, 1940145, 1940146, 1940147
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1940144, 1940145, 1940146, 1940147
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1940148, 1940149, 1940150, 1940151
SM 2120 B / E31780	True Color measured at 450 nm	1940140, 1940141, 1940142, 1940143
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1940140, 1940141, 1940142, 1940143
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1940140, 1940141, 1940142, 1940143
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1940140, 1940141, 1940142, 1940143

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1940140, 1940141, 1940142, 1940143
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1940144, 1940145, 1940146, 1940147

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	10/26/2017			10/26/2017 16:10	DeAsia Armster	1940140, 1940141, 1940142, 1940143
EPA 300.0 Rev. 2.1	10/26/2017			11/01/2017	Julia Storbeck	1940140, 1940141, 1940142, 1940143
EPA 350.1 Rev. 2.0	10/26/2017			11/02/2017	Sofia Elnemr	1940144, 1940145, 1940146
	10/26/2017			11/03/2017	Sofia Elnemr	1940147
EPA 351.2 Rev. 2.0	10/26/2017	11/01/2017	Adrian Shelby	11/02/2017	Joseph Suarez	1940145, 1940146, 1940147
	10/26/2017	11/06/2017	Adrian Shelby	11/08/2017	Joseph Suarez	1940144
EPA 353.2 Rev. 2.0	10/26/2017			10/31/2017	Beverly Y. Sanders	1940144, 1940145, 1940146, 1940147
EPA 365.1 Rev. 2.0	10/26/2017	10/27/2017	Sima Feizi	10/30/2017	Lipi Saha	1940144, 1940145
	10/26/2017	10/30/2017	Sima Feizi	10/31/2017	Lipi Saha	1940146
	10/26/2017	10/30/2017	Sima Feizi	11/01/2017	Lipi Saha	1940147
EPA 365.1 Rev. 2.0 dissolved	10/26/2017			10/26/2017 14:38	Megan Treadwell	1940148
	10/26/2017			10/26/2017 14:39	Megan Treadwell	1940149
	10/26/2017			10/26/2017 14:40	Megan Treadwell	1940150
	10/26/2017			10/26/2017 14:48	Megan Treadwell	1940151
SM 2120 B	10/26/2017			10/26/2017 16:28	Tanya Welborn	1940143
	10/26/2017			10/26/2017 17:11	Tanya Welborn	1940140
	10/26/2017			10/26/2017 17:12	Tanya Welborn	1940141
	10/26/2017			10/26/2017 17:13	Tanya Welborn	1940142
SM 2320 B-97	10/26/2017			10/28/2017	Dale L. Simmons	1940140, 1940141, 1940142, 1940143
SM 2540 C-97	10/26/2017			10/27/2017	DeAsia Armster	1940140, 1940141, 1940142, 1940143
SM 2540 D-97	10/26/2017			10/27/2017	DeAsia Armster	1940140, 1940141, 1940142, 1940143
SM 4500 F-C-97	10/26/2017			10/31/2017	Dale L. Simmons	1940140, 1940141, 1940142, 1940143
SM 5310 B-00	10/26/2017			11/04/2017	Ping Hua	1940144, 1940145, 1940146, 1940147