Chemical Analysis Report

CEN-DIST-2017-10-13-01

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

Event Description: **Mirror / Bear / Felter**
Request ID: **RQ-2017-10-09-32**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

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: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 02-NOV-2017 15:43

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: Mirror Lake @ Center of North Lobe **Collection Date/Time: 10/12/2017 10:28**

Field ID: G1CE0041 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936798	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P333465	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P333468	
		Sulfate	26		mg SO4/L	P333469	
	SM 2120 B	Color (true)	14		PCU	P333387	
	SM 2320 B-97	Total Alkalinity	13		mg CaCO3/L	P333738	
	SM 2540 C-97	TDS	92	A	mg/L	P333867	
	SM 2540 D-97	TSS	2	IA	mg/L	P333933	
	SM 4500 F-C-97	Fluoride	0.097	I	mg F/L	P333741	
1936801	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P333614	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P333731	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.030		mg N/L	P334000	
	EPA 365.1 Rev. 2.0	Total-P	0.01		mg P/L	P333528	
	SM 5310 B-00	Organic Carbon	6.4		mg C/L	P333687	
1936804	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P333372	

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: Lake Felter @ Center **Collection Date/Time: 10/12/2017 11:13**

Field ID: G1CE0047 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936799	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P333465	
	EPA 300.0 Rev. 2.1	Chloride	19	A	mg Cl/L	P333468	
		Sulfate	3.1	A	mg SO4/L	P333469	
	SM 2120 B	Color (true)	96		PCU	P333387	
	SM 2320 B-97	Total Alkalinity	22		mg CaCO3/L	P333739	
	SM 2540 C-97	TDS	100		mg/L	P333867	
	SM 2540 D-97	TSS	2	I	mg/L	P333933	
	SM 4500 F-C-97	Fluoride	0.085	I	mg F/L	P333742	
1936802	EPA 350.1 Rev. 2.0	Ammonia-N	0.15		mg N/L	P333617	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.0		mg N/L	P333731	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P334000	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P333601	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P333687	
1936805	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P333372	

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: Bear Lake @ Center **Collection Date/Time: 10/12/2017 12:00**

Field ID: G1CE0002 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936800	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P333465	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P333468	
		Sulfate	0.42	I	mg SO4/L	P333469	

Field ID: G1CE0002 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936800	SM 2120 B	Color (true)	340		PCU	P333387	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P333739	
	SM 2540 C-97	TDS	74		mg/L	P333867	
	SM 2540 D-97	TSS	3	I	mg/L	P333933	
	SM 4500 F-C-97	Fluoride	0.053	I	mg F/L	P333742	
1936803	EPA 350.1 Rev. 2.0	Ammonia-N	0.052		mg N/L	P333617	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P333731	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P334000	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P333601	
	SM 5310 B-00	Organic Carbon	28		mg C/L	P333687	
1936806	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P333372	

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P333465

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333468

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333469

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333614

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333617

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333731

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334000

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333528

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333601

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333372

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

Reference Method: SM 2120 B
Batch ID: P333387

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P333738

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

Reference Method: SM 2320 B-97
Batch ID: P333739

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

Reference Method: SM 2540 C-97
Batch ID: P333867

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P333933

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P333741

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P333742

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P333687

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: P333468

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333469

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333614

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333617

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333731

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.3		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334000

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334000

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333528

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333601

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	94.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333372

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.6		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P333738

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

Reference Method: SM 2320 B-97
Batch ID: P333739

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

Reference Method: SM 4500 F-C-97
Batch ID: P333741

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P333742

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P333687

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.4		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333468

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936799	Chloride	100		P	90 - 110
1936916	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936799	Sulfate	98.8		P	90 - 110
1936916	Sulfate	98.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333614

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936632	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333617

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936814	Ammonia-N	99.3	95.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333731

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936794	Kjeldahl Nitrogen	97.8	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334000

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936802	NO2NO3-N	99.3	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333528

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936801	Total-P	95.4	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333601

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936899	Total-P	96.1	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333372

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936804	O-Phosphate-P	91.8	95.6	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P333741

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937126	Fluoride	97.0	100	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P333742

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936807	Fluoride	98.8	99.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P333687

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936801	Organic Carbon	97.0	97.6	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P333465

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936687	Turbidity	0.755	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333468

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936799	Chloride	0.533	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936799	Sulfate	0.539	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936632	Ammonia-N	0.612	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333617

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936814	Ammonia-N	3.86	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936794	Kjeldahl Nitrogen	5.83	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334000

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936802	NO2NO3-N	0.966	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333528

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936801	Total-P	3.75	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333601

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936899	Total-P	0.0937	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333372

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936804	O-Phosphate-P	4.06	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P333387

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936810	Color (true)	0.0200	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P333738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937126	Total Alkalinity	0.283	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P333739

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936807	Total Alkalinity	1.68	Sample	P	0 - 4.8

Quality Assurance Report
Precision

Reference Method: SM 2540 C-97
Batch ID: P333867

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936798	TDS	6.52	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P333741

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937126	Fluoride	2.87	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P333742

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936807	Fluoride	0.472	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P333687

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936801	Organic Carbon	0.464	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 365.1 Rev. 2.0 dissolved
Run ID: A79548
Included Lab Sample IDs: 1936804, 1936805, 1936806

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.9	P/P	90 - 110
O-Phosphate-P	98.9	91.2	P/P	90 - 110
O-Phosphate-P	99.6	100	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A79554
Included Lab Sample IDs: 1936798, 1936799, 1936800

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	99.4	P/P	85 - 115
Color (true)	94.3	100	P/P	85 - 115

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A79592
Included Lab Sample IDs: 1936798, 1936799, 1936800

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.0	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A79593
Included Lab Sample IDs: 1936798, 1936799, 1936800

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	105	105	P/P	90 - 110
Chloride	105	105	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A79639
Included Lab Sample IDs: 1936801, 1936802, 1936803

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	102	P/P	90 - 110
Ammonia-N	102	103	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A79660
Included Lab Sample IDs: 1936801, 1936802, 1936803

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	97.8	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A79678
Included Lab Sample IDs: 1936798, 1936799, 1936800

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	107	99.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A79678
Included Lab Sample IDs: 1936798, 1936799, 1936800

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A79711
Included Lab Sample IDs: 1936801, 1936802, 1936803

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	97.8	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A79762
Included Lab Sample IDs: 1936801, 1936802, 1936803

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	97.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A79783
Included Lab Sample IDs: 1936801, 1936802, 1936803

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.5	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					0.755	
EPA 300.0 Rev. 2.1	Chloride	102	100	102		0.533	
	Sulfate	95.0	98.8	98.1		0.539	
EPA 350.1 Rev. 2.0	Ammonia-N	106	102	101			0.612
	Ammonia-N	103	99.3	95.1			3.86
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.3	97.8	104			5.83
EPA 353.2 Rev. 2.0	NO2NO3-N	102	99.3	100			0.966
EPA 365.1 Rev. 2.0	Total-P	96.7	95.4	99.1			3.75
	Total-P	94.4	96.1	96.0			0.0937
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6	91.8	95.6			4.06
SM 2120 B	Color (true)					0.0200	
SM 2320 B-97	Total Alkalinity	102				0.283	
	Total Alkalinity	102				1.68	
SM 2540 C-97	TDS					6.52	
SM 4500 F-C-97	Fluoride	96.9	97.0	100			2.87
	Fluoride	96.0	98.8	99.3			0.472
SM 5310 B-00	Organic Carbon	98.4	97.0	97.6			0.464

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1936798, 1936799, 1936800
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1936798, 1936799, 1936800
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1936798, 1936799, 1936800
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1936801, 1936802, 1936803
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1936801, 1936802, 1936803
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1936801, 1936802, 1936803

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1936801, 1936802, 1936803
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1936804, 1936805, 1936806
SM 2120 B / E31780	True Color measured at 450 nm	1936798, 1936799, 1936800
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1936798, 1936799, 1936800
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1936798, 1936799, 1936800
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1936798, 1936799, 1936800
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1936798, 1936799, 1936800
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1936801, 1936802, 1936803

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	10/13/2017			10/13/2017 15:53	Blanca Fach	1936798, 1936799, 1936800
EPA 300.0 Rev. 2.1	10/13/2017			10/16/2017	Irina Carbone	1936799
	10/13/2017			10/17/2017	Irina Carbone	1936798, 1936800
EPA 350.1 Rev. 2.0	10/13/2017			10/18/2017	Sofia Elnemr	1936801, 1936802, 1936803
EPA 351.2 Rev. 2.0	10/13/2017	10/20/2017	Adrian Shelby	10/23/2017	Joseph Suarez	1936801, 1936802, 1936803
EPA 353.2 Rev. 2.0	10/13/2017			10/25/2017	Beverly Y. Sanders	1936801, 1936802, 1936803
EPA 365.1 Rev. 2.0	10/13/2017	10/18/2017	Sima Feizi	10/20/2017	Lipi Saha	1936801, 1936802, 1936803
EPA 365.1 Rev. 2.0 dissolved	10/13/2017			10/13/2017 12:54	Megan Treadwell	1936804
	10/13/2017			10/13/2017 13:12	Megan Treadwell	1936805
	10/13/2017			10/13/2017 13:17	Megan Treadwell	1936806
SM 2120 B	10/13/2017			10/13/2017 16:27	Julia Storbeck	1936798
	10/13/2017			10/13/2017 16:28	Julia Storbeck	1936799
	10/13/2017			10/13/2017 16:42	Julia Storbeck	1936800
SM 2320 B-97	10/13/2017			10/19/2017	Dale L. Simmons	1936798
	10/13/2017			10/20/2017	Dale L. Simmons	1936799, 1936800
SM 2540 C-97	10/13/2017			10/18/2017	Yijie Li	1936798, 1936799, 1936800
SM 2540 D-97	10/13/2017			10/18/2017	Yijie Li	1936798, 1936799, 1936800
SM 4500 F-C-97	10/13/2017			10/19/2017	Dale L. Simmons	1936798
	10/13/2017			10/20/2017	Dale L. Simmons	1936799, 1936800
SM 5310 B-00	10/13/2017			10/19/2017	Ping Hua	1936801, 1936802, 1936803