

Chemical Analysis Report

CEN-DIST-2017-10-06-01

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

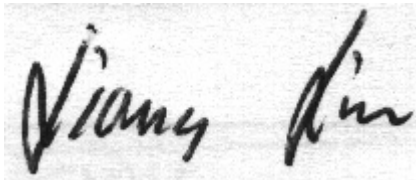
Event Description: **Lk Charles + D&B**
Request ID: **RQ-2017-10-09-33**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 25-OCT-2017 11:02

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: Lake Charles @ 400m South of Center

Collection Date/Time: 10/05/2017 10:30

Field ID: G1CE0030

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934872	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P332899	
	EPA 300.0 Rev. 2.1	Chloride	8.4		mg Cl/L	P333113	
		Sulfate	1.0		mg SO4/L	P333116	
	SM 2120 B	Color (true)	1.2E+03		PCU	P332893	
	SM 2320 B-97	Total Alkalinity	10		mg CaCO3/L	P333347	
	SM 2540 C-97	TDS	193		mg/L	P333156	
	SM 2540 D-97	TSS	3	I	mg/L	P333108	
	SM 4500 F-C-97	Fluoride	0.069	I	mg F/L	P333350	
1934873	EPA 350.1 Rev. 2.0	Ammonia-N	0.26		mg N/L	P333396	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.5		mg N/L	P333310	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P333226	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P333067	
	SM 5310 B-00	Organic Carbon	70		mg C/L	P333652	
1934874	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P332869	

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 Charles_D @ 400m South of Center

Collection Date/Time: 10/05/2017 10:35

Field ID: G1CE0030_D

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934875	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P332899	
	EPA 300.0 Rev. 2.1	Chloride	8.5		mg Cl/L	P333113	
		Sulfate	1.1		mg SO4/L	P333116	
	SM 2120 B	Color (true)	1.2E+03		PCU	P332893	
	SM 2320 B-97	Total Alkalinity	10		mg CaCO3/L	P333347	
	SM 2540 C-97	TDS	198		mg/L	P333156	
	SM 2540 D-97	TSS	3	I	mg/L	P333108	
	SM 4500 F-C-97	Fluoride	0.068	I	mg F/L	P333350	
1934877	EPA 350.1 Rev. 2.0	Ammonia-N	0.26		mg N/L	P333396	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.4		mg N/L	P333310	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P333226	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P333067	
	SM 5310 B-00	Organic Carbon	70		mg C/L	P333652	
1934879	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P332869	

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: 10/05/2017 10:45

Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934876	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P332897	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P333113	
		Sulfate	0.20	U	mg SO4/L	P333116	

Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934876	SM 2120 B	Color (true)	2.5	U	PCU	P332893	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P333347	
	SM 2540 C-97	TDS	15	U	mg/L	P333156	
	SM 2540 D-97	TSS	2	U	mg/L	P333108	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P333350	
1934878	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P333397	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P333310	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P333227	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P333067	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P333652	
1934880	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P332869	

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: P332897

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P332899

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P333113

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P333116

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P333396

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P333397

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333310

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333226

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333227

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333067

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332869

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

Reference Method: SM 2120 B
Batch ID: P332893

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P333347

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97
Batch ID: P333156

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P333108

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P333350

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P333652

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: P333113

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333116

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333396

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: P333397

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333310

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	109		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333226

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333227

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333227

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: P333067

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332869

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

Reference Method: SM 2320 B-97
Batch ID: P333347

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

Reference Method: SM 4500 F-C-97
Batch ID: P333350

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P333652

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333113

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934883	Chloride	101		P	90 - 110
1934935	Chloride	99.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333116

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934883	Sulfate	97.1		P	90 - 110
1934935	Sulfate	96.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333396

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1935318	Ammonia-N	97.8	99.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934888	Ammonia-N	98.7	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333310

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934888	Kjeldahl Nitrogen	94.3	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934848	NO2NO3-N	106	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934889	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333067

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934890	Total-P	97.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332869

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934885	O-Phosphate-P	93.1	95.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P333350

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934698	Fluoride	101	101	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P333652

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934769	Organic Carbon	96.2	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P332897

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934860	Turbidity	1.80	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P332899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934984	Turbidity	2.96	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333113

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934935	Chloride	6.04	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934935	Sulfate	0.699	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333396

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1935318	Ammonia-N	1.24	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934888	Ammonia-N	1.60	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934888	Kjeldahl Nitrogen	5.11	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934848	NO2NO3-N	0.952	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934889	NO2NO3-N	0.462	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934890	Total-P	0.455	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332869

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934885	O-Phosphate-P	2.22	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P332893

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934860	Color (true)	9.64	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P333347

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934698	Total Alkalinity	0.208	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P333156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934951	TDS	0.917	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P333350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934698	Fluoride	0.482	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P333652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934769	Organic Carbon	4.81	Spike	P	0 - 20

Quality Assurance Report Precision

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A79385
Included Lab Sample IDs: 1934874, 1934879, 1934880

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.9	98.6	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A79399
Included Lab Sample IDs: 1934872, 1934875, 1934876

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A79400
Included Lab Sample IDs: 1934872, 1934875, 1934876

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A79473
Included Lab Sample IDs: 1934872, 1934875, 1934876

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	104	105	P/P	90 - 110
Chloride	105	104	P/P	90 - 110
Sulfate	101	102	P/P	90 - 110
Sulfate	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A79486
Included Lab Sample IDs: 1934873, 1934877

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A79494
Included Lab Sample IDs: 1934878

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79506

Included Lab Sample IDs: 1934873, 1934877, 1934878

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

Reference Method: SM 2320 B-97

Run ID: A79535

Included Lab Sample IDs: 1934872, 1934875, 1934876

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

Reference Method: SM 4500 F-C-97

Run ID: A79535

Included Lab Sample IDs: 1934872, 1934875, 1934876

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79555

Included Lab Sample IDs: 1934873, 1934877, 1934878

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79566

Included Lab Sample IDs: 1934873, 1934877, 1934878

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.8	97.8	P/P	90 - 110
Kjeldahl Nitrogen	97.8	99.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A79655

Included Lab Sample IDs: 1934873, 1934877, 1934878

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.1	100	P/P	90 - 110
Organic Carbon	99.0	98.1	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	MS
				LCS	SMP

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Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					1.80	
	Turbidity					2.96	
EPA 300.0 Rev. 2.1	Chloride	101	99.7	101		6.04	
	Sulfate	97.1	96.4	97.1		0.699	
EPA 350.1 Rev. 2.0	Ammonia-N	101	97.8	99.7			1.24
	Ammonia-N	101	98.7	101			1.60
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109	94.3	101			5.11
EPA 353.2 Rev. 2.0	NO2NO3-N	104	106	104			0.952
	NO2NO3-N	104	103	102			0.462
EPA 365.1 Rev. 2.0	Total-P	98.2	97.5	98.0			0.455
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	93.1	95.3			2.22
SM 2120 B	Color (true)					9.64	
SM 2320 B-97	Total Alkalinity	103				0.208	
SM 2540 C-97	TDS					0.917	
SM 4500 F-C-97	Fluoride	102	101	101			0.482
SM 5310 B-00	Organic Carbon	100	96.2	102			4.81

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1934872, 1934875, 1934876
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1934872, 1934875, 1934876
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1934872, 1934875, 1934876
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1934873, 1934877, 1934878
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1934873, 1934877, 1934878
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1934873, 1934877, 1934878
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1934873, 1934877, 1934878
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1934874, 1934879, 1934880
SM 2120 B / E31780	True Color measured at 450 nm	1934872, 1934875, 1934876
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1934872, 1934875, 1934876
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1934872, 1934875, 1934876
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1934872, 1934875, 1934876
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1934872, 1934875, 1934876
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1934873, 1934877, 1934878

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	10/06/2017			10/06/2017 17:25	Tanya Welborn	1934872, 1934875, 1934876
EPA 300.0 Rev. 2.1	10/06/2017			10/10/2017	Julia Storbeck	1934872, 1934875, 1934876
EPA 350.1 Rev. 2.0	10/06/2017			10/13/2017	Sofia Elnemr	1934873, 1934877, 1934878
EPA 351.2 Rev. 2.0	10/06/2017	10/12/2017	Adrian Shelby	10/13/2017	Virginia P. Brown	1934873, 1934877, 1934878
EPA 353.2 Rev. 2.0	10/06/2017			10/12/2017	Beverly Y. Sanders	1934873, 1934877, 1934878
EPA 365.1 Rev. 2.0	10/06/2017	10/10/2017	Sima Feizi	10/11/2017	Lipi Saha	1934873, 1934877, 1934878
EPA 365.1 Rev. 2.0 dissolved	10/06/2017			10/06/2017 11:50	Megan Treadwell	1934874
	10/06/2017			10/06/2017 11:51	Megan Treadwell	1934879, 1934880
SM 2120 B	10/06/2017			10/06/2017 15:55	Tanya Welborn	1934876
	10/06/2017			10/06/2017 16:16	Tanya Welborn	1934872
	10/06/2017			10/06/2017 16:17	Tanya Welborn	1934875
SM 2320 B-97	10/06/2017			10/13/2017	Dale L. Simmons	1934872, 1934875, 1934876
SM 2540 C-97	10/06/2017			10/09/2017	Yijie Li	1934872, 1934875, 1934876
SM 2540 D-97	10/06/2017			10/09/2017	Yijie Li	1934872, 1934875, 1934876
SM 4500 F-C-97	10/06/2017			10/13/2017	Dale L. Simmons	1934872, 1934875, 1934876
SM 5310 B-00	10/06/2017			10/18/2017	Ping Hua	1934873, 1934877, 1934878