

Chemical Analysis Report

CEN-DIST-2017-07-11-01

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

Event Description: **Lk Lou + D&B**
Request ID: **RQ-2017-07-10-29**
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: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 26-JUL-2017 13:03



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 lou- Center of Lake

Collection Date/Time: 07/10/2017 13:00

Field ID: G1CE0040

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912503	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P328428	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P328455	
		Sulfate	5.0		mg SO4/L	P328459	
	SM 2120 B	Color (true)	130	A	PCU	P328277	
	SM 2320 B-97	Total Alkalinity	6.1		mg CaCO3/L	P328433	
	SM 2540 C-97	TDS	74		mg/L	P328641	
	SM 2540 D-97	TSS	4	I	mg/L	P328732	
	SM 4500 F-C-97	Fluoride	0.059	I	mg F/L	P328436	
1912504	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P328586	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P328562	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P328456	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P328694	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P328793	
1912505	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P328307	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Lou- Center of Lake DUP

Collection Date/Time: 07/10/2017 13:00

Field ID: G1CE0040_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912506	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P328428	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P328455	
		Sulfate	5.0		mg SO4/L	P328459	
	SM 2120 B	Color (true)	120		PCU	P328277	
	SM 2320 B-97	Total Alkalinity	6.1		mg CaCO3/L	P328433	
	SM 2540 C-97	TDS	72		mg/L	P328641	
	SM 2540 D-97	TSS	5	I	mg/L	P328732	
	SM 4500 F-C-97	Fluoride	0.061	I	mg F/L	P328436	
1912508	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P328586	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P328562	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P328456	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P328694	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P328793	
1912510	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P328307	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Lou- Center of Lake DUP

Collection Date/Time: 07/10/2017 13:15

Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912507	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P328428	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P328455	
		Sulfate	0.20	U	mg SO4/L	P328459	
	SM 2120 B	Color (true)	2.5	U	PCU	P328277	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P328433	
	SM 2540 C-97	TDS	15	U	mg/L	P328639	
	SM 2540 D-97	TSS	2	U	mg/L	P328730	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P328436	
1912509	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P328586	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P328562	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P328456	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P328695	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P328793	
1912511	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P328307	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P328428

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P328455

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P328459

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P328586

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P328562

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: P328456

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328694

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328695

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328307

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

Reference Method: SM 2120 B
Batch ID: P328277

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P328433

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

Reference Method: SM 2540 C-97
Batch ID: P328639

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P328641

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P328730

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P328732

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P328436

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P328793

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: P328455

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328459

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328586

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: P328562

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328456

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: P328694

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328694

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328695

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328307

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

Reference Method: SM 2320 B-97
Batch ID: P328433

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P328436

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

Reference Method: SM 5310 B-00
Batch ID: P328793

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328455

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912442	Chloride	96.4		P	90 - 110
1912443	Chloride	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328586

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912446	Ammonia-N	99.2	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328562

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912639	Kjeldahl Nitrogen	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328456

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912480	NO2NO3-N	99.2	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328694

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912486	Total-P	95.5	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328695

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912683	Total-P	94.2	95.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328307

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912487	O-Phosphate-P	95.8	96.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P328436

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912388	Fluoride	100	98.3	P/P	91 - 105

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P328428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912443	Turbidity	0.179	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912443	Chloride	2.42	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912443	Sulfate	2.25	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912446	Ammonia-N	0.869	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912639	Kjeldahl Nitrogen	0.0707	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912480	NO2NO3-N	0.426	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328694

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912486	Total-P	3.85	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912683	Total-P	0.958	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328307

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912487	O-Phosphate-P	1.07	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P328277

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912503	Color (true)	1.14	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P328433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912388	Total Alkalinity	0.0835	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P328639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912311	TDS	2.76	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P328641

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912443	TDS	4.55	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P328730

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912311	TSS	8.22	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P328436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912388	Fluoride	1.42	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P328793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912395	Organic Carbon	0.111	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A77640
Included Lab Sample IDs: 1912503, 1912506, 1912507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	103	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A77649

Included Lab Sample IDs: 1912505, 1912510, 1912511

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.8	99.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A77688

Included Lab Sample IDs: 1912503, 1912506, 1912507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A77688

Included Lab Sample IDs: 1912503, 1912506, 1912507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	98.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A77690

Included Lab Sample IDs: 1912503, 1912506, 1912507

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77691

Included Lab Sample IDs: 1912504, 1912508, 1912509

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A77695

Included Lab Sample IDs: 1912503, 1912506, 1912507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	104	109	P/P	90 - 110
Sulfate	103	109	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A77748

Included Lab Sample IDs: 1912504, 1912508, 1912509

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77782

Included Lab Sample IDs: 1912504, 1912508, 1912509

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A77819

Included Lab Sample IDs: 1912504, 1912508, 1912509

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77827

Included Lab Sample IDs: 1912504, 1912508, 1912509

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	104	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				0.179	
EPA 300.0 Rev. 2.1	Chloride	102	107	96.4	2.42	
	Sulfate	100			2.25	
EPA 350.1 Rev. 2.0	Ammonia-N	102	99.2	101		0.869
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	101	101		0.0707
EPA 353.2 Rev. 2.0	NO2NO3-N	104	99.2	98.8		0.426
EPA 365.1 Rev. 2.0	Total-P	97.0	95.5	99.3		3.85
	Total-P	96.7	94.2	95.1		0.958
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.5	95.8	96.9		1.07
SM 2120 B	Color (true)				1.14	
SM 2320 B-97	Total Alkalinity	104			0.0835	
SM 2540 C-97	TDS				2.76	
	TDS				4.55	
SM 2540 D-97	TSS				8.22	
SM 4500 F-C-97	Fluoride	98.9	100	98.3		1.42
SM 5310 B-00	Organic Carbon	99.2				0.111

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1912503, 1912506, 1912507
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1912503, 1912506, 1912507
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1912503, 1912506, 1912507
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1912504, 1912508, 1912509
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1912504, 1912508, 1912509
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1912504, 1912508, 1912509

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	1912504, 1912508, 1912509
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1912505, 1912510, 1912511
SM 2120 B / E31780	True Color measured at 450 nm	1912503, 1912506, 1912507
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1912503, 1912506, 1912507
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1912503, 1912506, 1912507
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1912503, 1912506, 1912507
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1912503, 1912506, 1912507
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1912504, 1912508, 1912509

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	07/11/2017			07/11/2017 18:06	DeAsia Armster	1912503, 1912506, 1912507
EPA 300.0 Rev. 2.1	07/11/2017			07/12/2017	Julia Storbeck	1912503, 1912506, 1912507
EPA 350.1 Rev. 2.0	07/11/2017			07/14/2017	Sofia Elnemr	1912504, 1912508, 1912509
EPA 351.2 Rev. 2.0	07/11/2017	07/17/2017	Adrian Shelby	07/18/2017	Joseph Suarez	1912504, 1912508, 1912509
EPA 353.2 Rev. 2.0	07/11/2017			07/13/2017	Beverly Y. Sanders	1912504, 1912508, 1912509
EPA 365.1 Rev. 2.0	07/11/2017	07/18/2017	Vijayalakshmi Reddy	07/20/2017	Lipi Saha	1912504, 1912508, 1912509
EPA 365.1 Rev. 2.0 dissolved	07/11/2017			07/11/2017 16:20	Anthony C. Onicha	1912505
	07/11/2017			07/11/2017 16:21	Anthony C. Onicha	1912510
	07/11/2017			07/11/2017 16:22	Anthony C. Onicha	1912511
	07/11/2017			07/11/2017 15:21	Julia Storbeck	1912503
SM 2120 B	07/11/2017			07/11/2017 15:22	Julia Storbeck	1912506
	07/11/2017			07/11/2017 15:23	Julia Storbeck	1912507
	07/11/2017			07/13/2017	Dale L. Simmons	1912503, 1912506, 1912507
SM 2320 B-97	07/11/2017			07/13/2017	Yijie Li	1912503, 1912506, 1912507
SM 2540 C-97	07/11/2017			07/13/2017	Yijie Li	1912503, 1912506, 1912507
SM 2540 D-97	07/11/2017			07/13/2017	Dale L. Simmons	1912503, 1912506, 1912507
SM 4500 F-C-97	07/11/2017			07/13/2017	Dale L. Simmons	1912503, 1912506, 1912507
SM 5310 B-00	07/11/2017			07/19/2017	Sofia Elnemr	1912504, 1912508, 1912509