Chemical Analysis Report

CEN-DIST-2016-04-29-01

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

Event Description: **Lk Amoret/Reedy Creek Below**
Request ID: **RQ-2016-04-25-56**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
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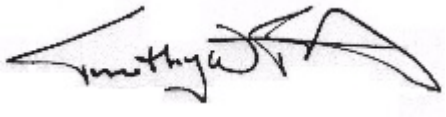
Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 25-MAY-2016 16:02



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 Amoret 70m NE of Center **Collection Date/Time: 04/28/2016 10:44**

Field ID: G4CE0073 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1794420	EPA 180.1 Rev. 2.0	Turbidity	0.30		NTU	P303250	
	EPA 300.0 Rev. 2.1	Chloride	13	A	mg Cl/L	P303903	
		Sulfate	16	A	mg SO4/L	P303906	
	SM 2120 B	Color (true)	39	A	PCU	P303258	
	SM 2320 B-97	Total Alkalinity	25	A	mg CaCO3/L	P303985	
	SM 2540 C-97	TDS	94		mg/L	P303935	
	SM 2540 D-97	TSS	2	I	mg/L	P303895	
	SM 4500 F-C-97	Fluoride	0.039	I	mg F/L	P303990	
1794422	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P303870	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P304325	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P304045	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P304152	
	SM 5310 B-00	Organic Carbon	6.8		mg C/L	P303955	
1794424	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P303297	

Ref. Method and Comment:
EPA 350.1 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: Reedy Creek @ 375 DS of Lake Russel **Collection Date/Time: 04/28/2016 12:45**

Field ID: G4CE0050 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1794421	EPA 180.1 Rev. 2.0	Turbidity	2.3	A	NTU	P303250	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P303903	
		Sulfate	1.0		mg SO4/L	P303906	
	SM 2120 B	Color (true)	420		PCU	P303258	
	SM 2320 B-97	Total Alkalinity	26		mg CaCO3/L	P303985	
	SM 2540 C-97	TDS	124		mg/L	P303935	
	SM 2540 D-97	TSS	2	I	mg/L	P303895	
	SM 4500 F-C-97	Fluoride	0.087	I	mg F/L	P303990	
1794423	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P303870	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P304327	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.062		mg N/L	P304045	
	EPA 365.1 Rev. 2.0	Total-P	0.064		mg P/L	P304233	
	SM 5310 B-00	Organic Carbon	35		mg C/L	P303955	
1794425	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P303295	

Ref. Method and Comment:
EPA 350.1 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P303250

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: P303903

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303906

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303870

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304325

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304327

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304045

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304152

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304233

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303295

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303297

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

Reference Method: SM 2120 B
Batch ID: P303258

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P303985

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

Reference Method: SM 2540 C-97
Batch ID: P303935

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P303895

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P303990

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P303955

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: P303903

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303906

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: P303906

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303870

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304325

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304327

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304045

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304152

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304233

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303295

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303297

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P303985

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P303990

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P303955

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: P303903

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1794420	Chloride	99.8		P	90 - 110
1794435	Chloride	98.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303906

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1794420	Sulfate	94.4		P	90 - 110
1794435	Sulfate	93.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304325

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1794372	Kjeldahl Nitrogen	93.8	96.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304327

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1794519	Kjeldahl Nitrogen	91.6	96.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304045

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1794422	NO2NO3-N	97.5	99.0	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304152

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1794357	Total-P	103	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304233

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793547	Total-P	97.4	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303295

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1794437	O-Phosphate-P	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1794358	O-Phosphate-P	99.4	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P303990

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1794420	Fluoride	95.7	96.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P303955

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1794422	Organic Carbon	95.3	94.3	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P303250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794421	Turbidity	2.65	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303903

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794420	Chloride	0.814	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303906

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794420	Sulfate	0.000636	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303870

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794397	Ammonia-N	1.55	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794372	Kjeldahl Nitrogen	1.38	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794519	Kjeldahl Nitrogen	4.77	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304045

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794422	NO2NO3-N	1.35	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304152

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794357	Total-P	1.98	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304233

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793547	Total-P	3.71	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303295

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794437	O-Phosphate-P	1.58	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794358	O-Phosphate-P	1.03	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P303258

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794420	Color (true)	0.815	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P303985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794420	Total Alkalinity	0.0601	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P303935

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794371	TDS	1.15	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P303895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794371	TSS	3.51	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P303990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794420	Fluoride	0.490	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P303955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794422	Organic Carbon	0.776	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: A69183
Included Lab Sample IDs: 1794420, 1794421

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A69185
Included Lab Sample IDs: 1794420, 1794421

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A69192
Included Lab Sample IDs: 1794424, 1794425

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.3	99.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A69217
Included Lab Sample IDs: 1794420, 1794421

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	100	P/P	90 - 110
Chloride	100	101	P/P	90 - 110
Sulfate	98.0	99.9	P/P	90 - 110
Sulfate	99.0	99.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A69351
Included Lab Sample IDs: 1794422, 1794423

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.2	97.7	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A69382
Included Lab Sample IDs: 1794422, 1794423

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.0	98.6	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A69399
Included Lab Sample IDs: 1794420, 1794421

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.1	P/P	90 - 110
Total Alkalinity	98.3	102	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 4500 F-C-97
Run ID: A69399
Included Lab Sample IDs: 1794420, 1794421

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	99.5	P/P	90 - 110
Fluoride	99.5	99.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A69415
Included Lab Sample IDs: 1794422, 1794423

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A69480
Included Lab Sample IDs: 1794422

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A69490
Included Lab Sample IDs: 1794423

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A69549
Included Lab Sample IDs: 1794423

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	96.9	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					2.65	
EPA 300.0 Rev. 2.1	Chloride	101	99.8	98.1		0.814	
	Sulfate	97.5	94.4	93.5		0.0006	
EPA 350.1 Rev. 2.0	Ammonia-N	98.9					1.55
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.8	93.8	96.3			1.38
	Kjeldahl Nitrogen	103	91.6	96.5			4.77
EPA 353.2 Rev. 2.0	NO2NO3-N	100	97.5	99.0			1.35
EPA 365.1 Rev. 2.0	Total-P	100	103	105			1.98
	Total-P	104	97.4	101			3.71
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	100	102			1.58

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	105	99.4	101			1.03
SM 2120 B	Color (true)					0.815	
SM 2320 B-97	Total Alkalinity	101				0.0601	
SM 2540 C-97	TDS					1.15	
SM 2540 D-97	TSS					3.51	
SM 4500 F-C-97	Fluoride	97.9	95.7	96.2			0.490
SM 5310 B-00	Organic Carbon	99.2	95.3	94.3			0.776

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1794420, 1794421
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1794420, 1794421
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1794420, 1794421
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1794422, 1794423
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1794422, 1794423
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1794422, 1794423
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1794422, 1794423
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1794424, 1794425
SM 2120 B / E31780	True Color measured at 450 nm	1794420, 1794421
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1794420, 1794421
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1794420, 1794421
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1794420, 1794421
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1794420, 1794421
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1794422, 1794423

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	04/29/2016			04/29/2016 15:40	Sima Feizi	1794420, 1794421
EPA 300.0 Rev. 2.1	04/29/2016			05/05/2016	Elisa J Lutz	1794420
	04/29/2016			05/06/2016	Elisa J Lutz	1794421
EPA 350.1 Rev. 2.0	04/29/2016			05/09/2016	Diana M. Turner	1794422, 1794423
EPA 351.2 Rev. 2.0	04/29/2016	05/16/2016	Sofia Elnemr	05/17/2016	Vijayalakshmi Reddy	1794423
	04/29/2016	05/16/2016	Sofia Elnemr	05/19/2016	Vijayalakshmi Reddy	1794422
EPA 353.2 Rev. 2.0	04/29/2016			05/11/2016	Peter D. Kaus	1794422, 1794423
EPA 365.1 Rev. 2.0	04/29/2016	05/12/2016	Lipi Saha	05/13/2016	Rochelle Y Jackson	1794422
	04/29/2016	05/13/2016	Lipi Saha	05/16/2016	Lipi Saha	1794423
EPA 365.1 Rev. 2.0 dissolved	04/29/2016			04/29/2016 16:34	Julia Storbeck	1794424
	04/29/2016			04/29/2016 16:35	Julia Storbeck	1794425
SM 2120 B	04/29/2016			04/29/2016 15:59	Blanca Fach	1794420
	04/29/2016			04/29/2016 16:15	Blanca Fach	1794421
SM 2320 B-97	04/29/2016			05/10/2016	Dale L. Simmons	1794420, 1794421
SM 2540 C-97	04/29/2016			05/04/2016	Yijie Li	1794420, 1794421
SM 2540 D-97	04/29/2016			05/04/2016	Yijie Li	1794420, 1794421
SM 4500 F-C-97	04/29/2016			05/10/2016	Dale L. Simmons	1794420, 1794421
SM 5310 B-00	04/29/2016			05/10/2016	Diana M. Turner	1794422, 1794423