

Chemical Analysis Report

SW-DIST-2016-02-05-01

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

Event Description: **1463D, 1463R, 1502A, 1502C**

Request ID: **RQ-2016-02-01-79**

Customer: **SW-DIST**

Project ID: **SMP**

Send Reports to:

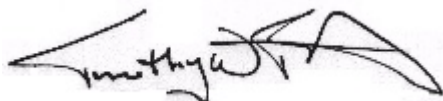
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Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 23-FEB-2016 09:41



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: G1SW0001

Collection Date/Time: 02/04/2016 09:00

Field ID: G1SW0001

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1769374	EPA 180.1 Rev. 2.0	Turbidity	0.65		NTU	P298175	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P298374	
		Sulfate	3.7		mg SO4/L	P298377	
	SM 2120 B	Color (true)	90		PCU	P298189	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P298434	
	SM 2540 C-97	TDS	92		mg/L	P298663	
	SM 2540 D-97	TSS	2	I	mg/L	P298592	
	SM 4500 F-C-97	Fluoride	0.064	I	mg F/L	P298425	
1769377	EPA 350.1 Rev. 2.0	Ammonia-N	0.041		mg N/L	P298703	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.86		mg N/L	P298386	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.030		mg N/L	P298523	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P298392	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P298390	
1769380	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P298164	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: G1SW0027

Collection Date/Time: 02/04/2016 10:40

Field ID: G1SW0027

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1769375	EPA 180.1 Rev. 2.0	Turbidity	3.2	A	NTU	P298176	
	EPA 300.0 Rev. 2.1	Chloride	36		mg Cl/L	P298374	
		Sulfate	9.0		mg SO4/L	P298377	
	SM 2120 B	Color (true)	36		PCU	P298190	
	SM 2320 B-97	Total Alkalinity	54		mg CaCO3/L	P298434	
	SM 2540 C-97	TDS	148		mg/L	P298663	
	SM 2540 D-97	TSS	7	I	mg/L	P298592	
	SM 4500 F-C-97	Fluoride	0.069	I	mg F/L	P298425	
1769378	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P298703	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P298386	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P298523	
	EPA 365.1 Rev. 2.0	Total-P	0.041		mg P/L	P298392	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P298390	
1769381	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P298164	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: G1SW0028

Collection Date/Time: 02/04/2016 10:00

Field ID: G1SW0028

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1769376	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P298176	
	EPA 300.0 Rev. 2.1	Chloride	51		mg Cl/L	P298374	
		Sulfate	15		mg SO4/L	P298377	

Field ID: G1SW0028

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1769376	SM 2120 B	Color (true)	56	A	PCU	P298190	
	SM 2320 B-97	Total Alkalinity	63		mg CaCO3/L	P298434	
	SM 2540 C-97	TDS	190		mg/L	P298663	
	SM 2540 D-97	TSS	6	I	mg/L	P298592	
	SM 4500 F-C-97	Fluoride	0.076	I	mg F/L	P298425	
1769379	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P298703	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P298386	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P298523	
	EPA 365.1 Rev. 2.0	Total-P	0.088		mg P/L	P298392	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P298390	
1769382	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P298164	

Ref. Method and Comment:

SM 2540 C-97: The reported result is consistent with the laboratory conductivity, 381 umhos/cm.

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P298175

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P298176

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P298374

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P298377

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P298703

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P298386

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: P298523

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298392

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298164

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

Reference Method: SM 2120 B
Batch ID: P298189

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P298190

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P298434

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

Reference Method: SM 2540 C-97
Batch ID: P298663

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P298592

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P298425

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P298390

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: P298374

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298377

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298703

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298386

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P298523

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298392

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298164

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

Reference Method: SM 2320 B-97
Batch ID: P298434

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

Reference Method: SM 2320 B-97
Batch ID: P298434

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.2		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P298425

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	94 - 108

Reference Method: SM 5310 B-00
Batch ID: P298390

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298374

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769280	Chloride	103		P	90 - 110
1769315	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298377

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769280	Sulfate	98.5		P	90 - 110
1769315	Sulfate	98.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298703

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769378	Ammonia-N	96.2	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298386

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769377	Kjeldahl Nitrogen	96.5	94.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P298523

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769357	NO2NO3-N	97.5	95.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298392

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769320	Total-P	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298164

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769380	O-Phosphate-P	97.8	98.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P298425

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769677	Fluoride	96.6	97.2	P/P	94 - 107

Reference Method: SM 5310 B-00
Batch ID: P298390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769345	Organic Carbon	103		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P298175

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769315	Turbidity	3.20	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P298176

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769375	Turbidity	5.30	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769280	Chloride	0.0307	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298377

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769280	Sulfate	0.872	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298703

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769378	Ammonia-N	1.07	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298386

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769377	Kjeldahl Nitrogen	1.28	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P298523

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769357	NO2NO3-N	1.16	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769320	Total-P	0.615	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298164

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769380	O-Phosphate-P	0.489	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P298189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769355	Color (true)	1.21	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P298190

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769376	Color (true)	0.0588	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P298434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769677	Total Alkalinity	3.92	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P298663

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769344	TDS	0.296	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P298425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769677	Fluoride	0.490	Spike	P	0 - 3.7

Reference Method: SM 5310 B-00
Batch ID: P298390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769345	Organic Carbon	0.160	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: A67481
Included Lab Sample IDs: 1769380, 1769381, 1769382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	98.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A67489
Included Lab Sample IDs: 1769374, 1769375, 1769376

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

Reference Method: SM 2120 B
Run ID: A67492
Included Lab Sample IDs: 1769374, 1769375, 1769376

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	93.9	98.9	P/P	85 - 115
Color (true)	98.9	99.3	P/P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A67519
Included Lab Sample IDs: 1769374, 1769375, 1769376

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.7	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A67519

Included Lab Sample IDs: 1769374, 1769375, 1769376

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.9	99.7	P/P	90 - 110
Sulfate	94.4	98.4	P/P	90 - 110
Sulfate	99.0	94.4	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A67546

Included Lab Sample IDs: 1769377, 1769378, 1769379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.6	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A67556

Included Lab Sample IDs: 1769377, 1769378, 1769379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	102	P/P	90 - 110
Kjeldahl Nitrogen	103	104	P/P	90 - 110
Kjeldahl Nitrogen	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A67560

Included Lab Sample IDs: 1769374, 1769375, 1769376

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

Reference Method: SM 2320 B-97

Run ID: A67563

Included Lab Sample IDs: 1769374, 1769375, 1769376

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.0	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A67568

Included Lab Sample IDs: 1769379

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A67589

Included Lab Sample IDs: 1769377, 1769378, 1769379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	98.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A67600

Included Lab Sample IDs: 1769377, 1769378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.8	97.2	P/P	90 - 110
Total-P	97.5	96.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A67634

Included Lab Sample IDs: 1769377, 1769378, 1769379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	100	P/P	90 - 110
Ammonia-N	100	101	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				3.20	
	Turbidity				5.30	
EPA 300.0 Rev. 2.1	Chloride	102	103 104		0.0307	
	Sulfate	98.9	98.5 98.9		0.872	
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	96.2 97.4			1.07
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.6	96.5 94.4			1.28
EPA 353.2 Rev. 2.0	NO2NO3-N	100	97.5 95.5			1.16
EPA 365.1 Rev. 2.0	Total-P	101	102 101			0.615
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.8 98.3			0.489
SM 2120 B	Color (true)				1.21	
	Color (true)				0.0588	
SM 2320 B-97	Total Alkalinity	99.2			3.92	
SM 2540 C-97	TDS				0.296	
SM 4500 F-C-97	Fluoride	97.9	96.6 97.2			0.490
SM 5310 B-00	Organic Carbon	101	103			0.160

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1769374, 1769375, 1769376
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1769374, 1769375, 1769376
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1769374, 1769375, 1769376
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1769377, 1769378, 1769379
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1769377, 1769378, 1769379
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1769377, 1769378, 1769379

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	1769377, 1769378, 1769379
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1769380, 1769381, 1769382
SM 2120 B / E31780	True Color measured at 450 nm	1769374, 1769375, 1769376
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1769374, 1769375, 1769376
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1769374, 1769375, 1769376
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1769374, 1769375, 1769376
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1769374, 1769375, 1769376
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1769377, 1769378, 1769379

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	02/05/2016			02/05/2016 15:17	Sima Feizi	1769374, 1769375, 1769376
EPA 300.0 Rev. 2.1	02/05/2016			02/09/2016	Julia Storbeck	1769374, 1769375, 1769376
EPA 350.1 Rev. 2.0	02/05/2016			02/16/2016	Diana M. Turner	1769377, 1769378, 1769379
EPA 351.2 Rev. 2.0	02/05/2016	02/10/2016	Christopher Armour	02/10/2016	Bryan A. Werth	1769377, 1769378, 1769379
EPA 353.2 Rev. 2.0	02/05/2016			02/12/2016	Diana M. Turner	1769377, 1769378, 1769379
EPA 365.1 Rev. 2.0	02/05/2016	02/10/2016	Christopher Armour	02/11/2016	Lipi Saha	1769377, 1769378, 1769379
EPA 365.1 Rev. 2.0 dissolved	02/05/2016			02/05/2016 13:52	Bryan A. Werth	1769380
	02/05/2016			02/05/2016 13:57	Bryan A. Werth	1769381, 1769382
SM 2120 B	02/05/2016			02/05/2016 15:30	Blanca Fach	1769374
	02/05/2016			02/05/2016 15:34	Blanca Fach	1769376
	02/05/2016			02/05/2016 15:35	Blanca Fach	1769375
SM 2320 B-97	02/05/2016			02/10/2016	Dale L. Simmons	1769374, 1769375, 1769376
SM 2540 C-97	02/05/2016			02/10/2016	Yijie Li	1769374, 1769375, 1769376
SM 2540 D-97	02/05/2016			02/10/2016	Yijie Li	1769374, 1769375, 1769376
SM 4500 F-C-97	02/05/2016			02/10/2016	Dale L. Simmons	1769374, 1769375, 1769376
SM 5310 B-00	02/05/2016			02/10/2016	Sofia Elnemr	1769377, 1769378, 1769379