

Chemical Analysis Report

SW-DIST-2016-04-22-02

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

Event Description: **1361A, 1341H, 1348A, 1382C**

Request ID: **RQ-2016-04-18-35**

Customer: **SW-DIST**

Project ID: **SMP**

Send Reports to:

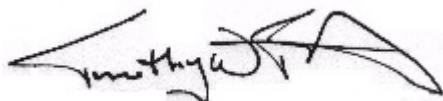
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Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 17-MAY-2016 09:17



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: BLUEBIRD SPRINGS

Collection Date/Time: 04/21/2016 11:15

Field ID: G5SW0028

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792321	EPA 180.1 Rev. 2.0	Turbidity	0.55		NTU	P302800	
	EPA 300.0 Rev. 2.1	Chloride	98		mg Cl/L	P303320	
		Sulfate	19		mg SO4/L	P303323	
	SM 2120 B	Color (true)	4.0	I	PCU	P302807	
	SM 2320 B-97	Total Alkalinity	131	A	mg CaCO3/L	P303265	
	SM 2540 C-97	TDS	306	A	mg/L	P303442	
	SM 2540 D-97	TSS	3	I	mg/L	P303309	
	SM 4500 F-C-97	Fluoride	0.090	I	mg F/L	P303269	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P303596	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.085	I	mg N/L	P303874	
1792325	EPA 353.2 Rev. 2.0	NO2NO3-N	0.58		mg N/L	P303850	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P303612	
	SM 5310 B-00	Organic Carbon	0.81	I	mg C/L	P303738	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.013		mg P/L	P302903	
	dissolved						

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: TOOKE LAKE C

Collection Date/Time: 04/21/2016 12:00

Field ID: G5SW0121

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792322	EPA 180.1 Rev. 2.0	Turbidity	2.2	A	NTU	P302801	
	EPA 300.0 Rev. 2.1	Chloride	7.3		mg Cl/L	P303320	
		Sulfate	4.2		mg SO4/L	P303323	
	SM 2120 B	Color (true)	14		PCU	P302807	
	SM 2320 B-97	Total Alkalinity	6.4		mg CaCO3/L	P303265	
	SM 2540 C-97	TDS	28		mg/L	P303442	
	SM 2540 D-97	TSS	2	I	mg/L	P303309	
	SM 4500 F-C-97	Fluoride	0.047	I	mg F/L	P303269	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P303596	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P303874	
1792326	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P303850	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P303614	
	SM 5310 B-00	Organic Carbon	9.6		mg C/L	P303738	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P302903	
	dissolved						

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: TOOKE LAKE N

Collection Date/Time: 04/21/2016 12:10

Field ID: G5SW0122

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792323	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P302801	
	EPA 300.0 Rev. 2.1	Chloride	7.3		mg Cl/L	P303320	
		Sulfate	4.2		mg SO4/L	P303323	

Field ID: G5SW0122

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792323	SM 2120 B	Color (true)	15		PCU	P302807	
	SM 2320 B-97	Total Alkalinity	6.2		mg CaCO3/L	P303265	
	SM 2540 C-97	TDS	26		mg/L	P303442	
	SM 2540 D-97	TSS	4	I	mg/L	P303309	
	SM 4500 F-C-97	Fluoride	0.047	I	mg F/L	P303269	
1792327	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P303596	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P303874	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P303850	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P303614	
	SM 5310 B-00	Organic Carbon	9.7		mg C/L	P303738	
1792331	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302903	

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: SKINNER LAKE C

Collection Date/Time: 04/21/2016 13:25

Field ID: G5SW0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792324	EPA 180.1 Rev. 2.0	Turbidity	0.55		NTU	P302801	
	EPA 300.0 Rev. 2.1	Chloride	2.8		mg Cl/L	P303320	
		Sulfate	0.23	I	mg SO4/L	P303323	
	SM 2120 B	Color (true)	13		PCU	P302807	
	SM 2320 B-97	Total Alkalinity	36		mg CaCO3/L	P303265	
1792328	SM 2540 C-97	TDS	39		mg/L	P303442	
	SM 2540 D-97	TSS	2	I	mg/L	P303309	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P303269	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P303596	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P303875	
1792332	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P303850	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P303614	
	SM 5310 B-00	Organic Carbon	5.1		mg C/L	P303738	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P302903	

Ref. Method and Comment:

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: P302800

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P302801

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P302801

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303320

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303323

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303596

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303874

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303875

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303850

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: P303612

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303614

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302903

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

Reference Method: SM 2120 B
Batch ID: P302807

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P303265

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

Reference Method: SM 2540 C-97
Batch ID: P303442

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P303309

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P303269

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P303738

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: P303320

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303323

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303323

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303596

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: P303874

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303875

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303850

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303612

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303614

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302903

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

Reference Method: SM 2320 B-97
Batch ID: P303265

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.9		P	95 - 105

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P303269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P303738

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303320

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792546	Chloride	97.7		P	90 - 110
1792604	Chloride	97.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792546	Sulfate	94.2		P	90 - 110
1792604	Sulfate	94.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303596

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792278	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303874

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792272	Kjeldahl Nitrogen	94.8	97.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792328	Kjeldahl Nitrogen	97.0	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792274	NO2NO3-N	99.2	98.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792270	Total-P	100	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303614

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792326	Total-P	93.5	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302903

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792329	O-Phosphate-P	98.7	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P303269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792321	Fluoride	97.0	97.7	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P303738

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792225	Organic Carbon	95.0	95.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P302800

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792261	Turbidity	7.11	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P302801

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792322	Turbidity	4.06	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303320

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792546	Chloride	0.459	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792546	Sulfate	0.0185	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303596

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792278	Ammonia-N	0.735	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303874

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792272	Kjeldahl Nitrogen	2.78	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792328	Kjeldahl Nitrogen	0.625	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792274	NO2NO3-N	0.709	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792270	Total-P	4.06	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792326	Total-P	4.27	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302903

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792329	O-Phosphate-P	0.979	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P302807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792269	Color (true)	1.80	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P303265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792321	Total Alkalinity	1.91	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P303442

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792321	TDS	4.58	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P303269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792321	Fluoride	0.528	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P303738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792225	Organic Carbon	0.560	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 180.1 Rev. 2.0
Run ID: A69046
Included Lab Sample IDs: 1792321, 1792322, 1792323, 1792324

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

Reference Method: SM 2120 B
Run ID: A69048
Included Lab Sample IDs: 1792321, 1792322, 1792323, 1792324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A69080

Included Lab Sample IDs: 1792329, 1792330, 1792331, 1792332

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	101	P/P	90 - 110
O-Phosphate-P	99.8	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A69144

Included Lab Sample IDs: 1792321, 1792322, 1792323, 1792324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Chloride	102	102	P/P	90 - 110
Sulfate	100	94.8	P/P	90 - 110
Sulfate	94.8	99.3	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A69186

Included Lab Sample IDs: 1792321, 1792322, 1792323, 1792324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.2	101	P/P	90 - 110
Total Alkalinity	98.5	97.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A69186

Included Lab Sample IDs: 1792321, 1792322, 1792323, 1792324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	99.5	P/P	90 - 110
Fluoride	99.5	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69277

Included Lab Sample IDs: 1792325, 1792326, 1792327, 1792328

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69319

Included Lab Sample IDs: 1792325, 1792326, 1792327, 1792328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	99.0	P/P	90 - 110
Total-P	99.0	97.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A69322

Included Lab Sample IDs: 1792325, 1792326, 1792327, 1792328

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69340

Included Lab Sample IDs: 1792325, 1792326, 1792327, 1792328

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69419

Included Lab Sample IDs: 1792325, 1792326, 1792327, 1792328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.4	97.4	P/P	90 - 110
Kjeldahl Nitrogen	97.4	97.2	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				7.11	
	Turbidity				4.06	
EPA 300.0 Rev. 2.1	Chloride	98.9	97.7 97.8		0.459	
	Sulfate	95.6	94.2 94.1		0.0185	
EPA 350.1 Rev. 2.0	Ammonia-N	102	101 101			0.735
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.1	94.8 97.9			2.78
	Kjeldahl Nitrogen	98.4	97.0 97.8			0.625
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	99.2 98.2			0.709
EPA 365.1 Rev. 2.0	Total-P	98.0	100 96.4			4.06
	Total-P	94.4	93.5 97.8			4.27
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	98.7 99.8			0.979
SM 2120 B	Color (true)				1.80	
SM 2320 B-97	Total Alkalinity	99.9			1.91	
SM 2540 C-97	TDS				4.58	
SM 4500 F-C-97	Fluoride	97.1	97.0 97.7			0.528
SM 5310 B-00	Organic Carbon	93.8	95.0 95.6			0.560

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1792321, 1792322, 1792323, 1792324
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1792321, 1792322, 1792323, 1792324
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1792321, 1792322, 1792323, 1792324
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1792325, 1792326, 1792327, 1792328
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1792325, 1792326, 1792327, 1792328
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1792325, 1792326, 1792327, 1792328

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	1792325, 1792326, 1792327, 1792328
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1792329, 1792330, 1792331, 1792332
SM 2120 B / E31780	True Color measured at 450 nm	1792321, 1792322, 1792323, 1792324
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1792321, 1792322, 1792323, 1792324
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1792321, 1792322, 1792323, 1792324
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1792321, 1792322, 1792323, 1792324
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1792321, 1792322, 1792323, 1792324
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1792325, 1792326, 1792327, 1792328

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	04/22/2016			04/22/2016 15:02	Sima Feizi	1792321, 1792322, 1792323, 1792324
EPA 300.0 Rev. 2.1	04/22/2016			04/30/2016	Elisa J Lutz	1792321, 1792322, 1792323, 1792324
EPA 350.1 Rev. 2.0	04/22/2016			05/04/2016	Diana M. Turner	1792325, 1792326, 1792327, 1792328
EPA 351.2 Rev. 2.0	04/22/2016	05/10/2016	Sofia Elnemr	05/11/2016	Christopher Armour	1792325, 1792326, 1792327, 1792328
EPA 353.2 Rev. 2.0	04/22/2016			05/06/2016	Virginia P. Brown	1792325, 1792326, 1792327, 1792328
EPA 365.1 Rev. 2.0	04/22/2016	05/05/2016	Vijayalakshmi Reddy	05/06/2016	Lipi Saha	1792325, 1792326, 1792327, 1792328
EPA 365.1 Rev. 2.0 dissolved	04/22/2016			04/22/2016 15:14	Ping Hua	1792329
	04/22/2016			04/22/2016 15:53	Ping Hua	1792330
	04/22/2016			04/22/2016 15:54	Ping Hua	1792331
	04/22/2016			04/22/2016 15:55	Ping Hua	1792332
SM 2120 B	04/22/2016			04/22/2016 15:23	Chrisoulla Rakowski	1792321
	04/22/2016			04/22/2016 15:24	Chrisoulla Rakowski	1792322
	04/22/2016			04/22/2016 15:25	Chrisoulla Rakowski	1792323
	04/22/2016			04/22/2016 15:26	Chrisoulla Rakowski	1792324
SM 2320 B-97	04/22/2016			04/29/2016	Dale L. Simmons	1792321, 1792322, 1792323, 1792324
SM 2540 C-97	04/22/2016			04/27/2016	Yijie Li	1792321, 1792322, 1792323, 1792324
SM 2540 D-97	04/22/2016			04/27/2016	Yijie Li	1792321, 1792322, 1792323, 1792324
SM 4500 F-C-97	04/22/2016			04/29/2016	Dale L. Simmons	1792321, 1792322, 1792323, 1792324
SM 5310 B-00	04/22/2016			05/06/2016	Sofia Elnemr	1792325, 1792326, 1792327, 1792328