

Chemical Analysis Report

NW-DIST-2016-12-16-01

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

Event Description: **East Lake Run WBID 204A 283 61A**
Request ID: **RQ-2016-12-12-12**
Customer: **NW-DIST**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 09-JAN-2017 14:14



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: Hurricane Lake @ Center

Collection Date/Time: 12/15/2016 11:15

Field ID: G4NW0117

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1858671	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P316955	
	EPA 300.0 Rev. 2.1	Chloride	2.7		mg Cl/L	P317357	
		Sulfate	0.58		mg SO4/L	P317363	
	SM 2120 B	Color (true)	13		PCU	P316958	
	SM 2320 B-97	Total Alkalinity	6.6		mg CaCO3/L	P317267	
	SM 2540 C-97	TDS	17	I	mg/L	P317445	
	SM 2540 D-97	TSS	3	I	mg/L	P317414	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P317272	
1858675	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P317456	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P317042	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.028		mg N/L	P317608	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P317244	
	SM 5310 B-00	Organic Carbon	4.7		mg C/L	P317020	
1858679	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P316954	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Hurricane Lake @ Center

Collection Date/Time: 12/15/2016 11:20

Field ID: G4NW0117DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1858672	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P316955	
	EPA 300.0 Rev. 2.1	Chloride	2.8		mg Cl/L	P317357	
		Sulfate	0.57		mg SO4/L	P317363	
	SM 2120 B	Color (true)	14		PCU	P316958	
	SM 2320 B-97	Total Alkalinity	6.8		mg CaCO3/L	P317267	
	SM 2540 C-97	TDS	18	I	mg/L	P317445	
	SM 2540 D-97	TSS	3	I	mg/L	P317414	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P317272	
1858676	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P317456	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P317042	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.028		mg N/L	P317608	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P317245	
	SM 5310 B-00	Organic Carbon	5.0		mg C/L	P317020	
1858680	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P316954	

Ref. Method and Comment:

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

Sample Location: Ten Mile Creek Pine Forest Road

Collection Date/Time: 12/15/2016 12:45

Field ID: G5NW0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1858673	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P316955	
	EPA 300.0 Rev. 2.1	Chloride	8.0	A	mg Cl/L	P317357	

Field ID: G5NW0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1858673	EPA 300.0 Rev. 2.1	Sulfate	3.7	A	mg SO4/L	P317363	
	SM 2120 B	Color (true)	40		PCU	P316958	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P317267	
	SM 2540 C-97	TDS	39		mg/L	P317445	
	SM 2540 D-97	TSS	2	I	mg/L	P317414	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P317272	
1858677	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P317456	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24		mg N/L	P317042	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P317609	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P317245	
	SM 5310 B-00	Organic Carbon	5.5		mg C/L	P317020	
1858681	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P316954	

Ref. Method and Comment:

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

Sample Location: Bridge Creek @ Bridge Creek Rd.

Collection Date/Time: 12/15/2016 13:30

Field ID: G5NW0071

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1858674	EPA 180.1 Rev. 2.0	Turbidity	2.3	A	NTU	P316955	
	EPA 300.0 Rev. 2.1	Chloride	9.3		mg Cl/L	P317357	
		Sulfate	10		mg SO4/L	P317363	
	SM 2120 B	Color (true)	63		PCU	P316958	
	SM 2320 B-97	Total Alkalinity	2.2	I	mg CaCO3/L	P317267	
	SM 2540 C-97	TDS	55		mg/L	P317445	
1858678	SM 2540 D-97	TSS	3	I	mg/L	P317414	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P317272	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P317456	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35		mg N/L	P317042	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.045		mg N/L	P317299	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P317245	
1858682	SM 5310 B-00	Organic Carbon	9.4		mg C/L	P317020	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P316954	

Ref. Method and Comment:

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P316955

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: P317357

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317363

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317456

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317042

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317299

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317608

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317609

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317244

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317245

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: P316954

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

Reference Method: SM 2120 B
Batch ID: P316958

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P317267

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

Reference Method: SM 2540 C-97
Batch ID: P317445

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P317414

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P317272

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P317020

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: P317357

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317363

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: P317363

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	92.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317456

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: P317042

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317299

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	109		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317608

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317609

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317244

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317245

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P316954

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P317267

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.6		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P317272

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P317020

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317357

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858673	Chloride	97.6		P	90 - 110
1858674	Chloride	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317363

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858673	Sulfate	91.7		P	90 - 110
1858674	Sulfate	91.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317456

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858553	Ammonia-N	104	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858721	Kjeldahl Nitrogen	98.2	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317299

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858678	NO2NO3-N	105	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317608

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858553	NO2NO3-N	104	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317609

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858677	NO2NO3-N	106	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858676	Total-P	100	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P316954

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858681	O-Phosphate-P	98.5	98.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P317272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858661	Fluoride	96.8	99.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P317020

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858675	Organic Carbon	94.3	94.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P316955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858674	Turbidity	1.72	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317357

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858673	Chloride	0.246	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317363

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858673	Sulfate	0.170	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858553	Ammonia-N	1.83	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858721	Kjeldahl Nitrogen	3.15	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317299

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858678	NO2NO3-N	0.787	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317608

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858553	NO2NO3-N	1.44	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317609

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858677	NO2NO3-N	0.862	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858184	Total-P	0.423	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858676	Total-P	1.23	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P316954

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858681	O-Phosphate-P	0.304	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P316958

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858716	Color (true)	0.0454	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P317267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858661	Total Alkalinity	0.382	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P317445

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858227	TDS	2.58	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P317272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858661	Fluoride	2.57	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P317020

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858675	Organic Carbon	0.169	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: A73435
Included Lab Sample IDs: 1858679, 1858680, 1858681, 1858682

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	96.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A73436

Included Lab Sample IDs: 1858671, 1858672, 1858673, 1858674

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	97.5	97.5	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A73437

Included Lab Sample IDs: 1858671, 1858672, 1858673, 1858674

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.1	101	P/P	85 - 115

Reference Method: SM 5310 B-00

Run ID: A73466

Included Lab Sample IDs: 1858675, 1858676, 1858677, 1858678

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A73522

Included Lab Sample IDs: 1858675, 1858676, 1858677, 1858678

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.8	94.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A73524

Included Lab Sample IDs: 1858678

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

Reference Method: SM 2320 B-97

Run ID: A73550

Included Lab Sample IDs: 1858671, 1858672, 1858673, 1858674

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.2	97.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A73550

Included Lab Sample IDs: 1858671, 1858672, 1858673, 1858674

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A73576

Included Lab Sample IDs: 1858671, 1858672, 1858673, 1858674

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	99.4	P/P	90 - 110
Chloride	99.2	99.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A73576

Included Lab Sample IDs: 1858671, 1858672, 1858673, 1858674

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	93.7	95.2	P/P	90 - 110
Sulfate	96.7	92.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A73595

Included Lab Sample IDs: 1858675, 1858676, 1858677, 1858678

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A73601

Included Lab Sample IDs: 1858675, 1858676, 1858677, 1858678

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.4	95.8	P/P	90 - 110
Ammonia-N	97.2	97.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A73672

Included Lab Sample IDs: 1858675, 1858676, 1858677

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	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				1.72	
EPA 300.0 Rev. 2.1	Chloride	101	97.6 99.1		0.246	
	Sulfate	92.1	91.7 91.5		0.170	
EPA 350.1 Rev. 2.0	Ammonia-N	102	104 102			1.83
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	98.2 102			3.15
EPA 353.2 Rev. 2.0	NO2NO3-N	109	105 104			0.787
	NO2NO3-N	106	104 105			1.44
	NO2NO3-N	106	106 105			0.862
EPA 365.1 Rev. 2.0	Total-P	99.6				0.423
	Total-P	99.4	100 99.0			1.23
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.3	98.5 98.8			0.304
SM 2120 B	Color (true)				0.0454	
SM 2320 B-97	Total Alkalinity	99.6			0.382	
SM 2540 C-97	TDS				2.58	
SM 4500 F-C-97	Fluoride	97.6	96.8 99.9			2.57

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision	MS
			LCS	SMP	
SM 5310 B-00	Organic Carbon	97.7	94.3 94.5		0.169

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1858671, 1858672, 1858673, 1858674
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1858671, 1858672, 1858673, 1858674
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1858671, 1858672, 1858673, 1858674
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1858675, 1858676, 1858677, 1858678
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1858675, 1858676, 1858677, 1858678
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1858675, 1858676, 1858677, 1858678
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1858675, 1858676, 1858677, 1858678
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1858679, 1858680, 1858681, 1858682
SM 2120 B / E31780	True Color measured at 450 nm	1858671, 1858672, 1858673, 1858674
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1858671, 1858672, 1858673, 1858674
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1858671, 1858672, 1858673, 1858674
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1858671, 1858672, 1858673, 1858674
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1858671, 1858672, 1858673, 1858674
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1858675, 1858676, 1858677, 1858678

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	12/16/2016			12/16/2016 15:40	Julie Michelle Frank	1858671, 1858672, 1858673, 1858674
EPA 300.0 Rev. 2.1	12/16/2016			12/22/2016	Ping Hua	1858673, 1858674
	12/16/2016			12/23/2016	Ping Hua	1858671, 1858672
EPA 350.1 Rev. 2.0	12/16/2016			12/27/2016	Julie Michelle Frank	1858675, 1858676, 1858677, 1858678
EPA 351.2 Rev. 2.0	12/16/2016	12/20/2016	Adrian Shelby	12/21/2016	Joseph Suarez	1858675, 1858676, 1858677, 1858678
EPA 353.2 Rev. 2.0	12/16/2016			12/21/2016	Beverly Y. Sanders	1858678
	12/16/2016			12/30/2016	Beverly Y. Sanders	1858675, 1858676, 1858677
EPA 365.1 Rev. 2.0	12/16/2016	12/22/2016	Vijayalakshmi Reddy	12/27/2016	Lipi Saha	1858675, 1858676, 1858677, 1858678
EPA 365.1 Rev. 2.0 dissolved	12/16/2016			12/16/2016 16:31	Julia Storbeck	1858681
	12/16/2016			12/16/2016 16:34	Julia Storbeck	1858679
	12/16/2016			12/16/2016 16:35	Julia Storbeck	1858680
	12/16/2016			12/16/2016 16:36	Julia Storbeck	1858682
SM 2120 B	12/16/2016			12/16/2016 17:26	Jared I. Manley	1858671, 1858672
	12/16/2016			12/16/2016 17:27	Jared I. Manley	1858673
	12/16/2016			12/16/2016 17:28	Jared I. Manley	1858674
SM 2320 B-97	12/16/2016			12/22/2016	Dale L. Simmons	1858671, 1858672, 1858673, 1858674
SM 2540 C-97	12/16/2016			12/16/2016	Yijie Li	1858671, 1858672, 1858673, 1858674
SM 2540 D-97	12/16/2016			12/16/2016	Yijie Li	1858671, 1858672, 1858673, 1858674
SM 4500 F-C-97	12/16/2016			12/22/2016	Dale L. Simmons	1858671, 1858672, 1858673, 1858674
SM 5310 B-00	12/16/2016			12/19/2016	Julie Michelle Frank	1858675, 1858676, 1858677, 1858678