

Chemical Analysis Report

NE-DIST-2016-02-10-01

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

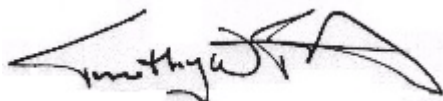
Event Description: **Nassau West**
Request ID: **RQ-2016-02-08-46**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
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Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 25-FEB-2016 10:48

A handwritten signature in black ink, appearing to read "Timothy Fitzpatrick", with a stylized flourish at the end.

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: 19010023 St. Mary at CR23C

Collection Date/Time: 02/09/2016 11:00

Field ID: 19010023 St. Mary at CR23C

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1770119	EPA 180.1 Rev. 2.0	Turbidity	5.9	A	NTU	P298416	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P298491	
		Sulfate	3.2		mg SO4/L	P298615	
	SM 2120 B	Color (true)	260		PCU	P298408	
	SM 2320 B-97	Total Alkalinity	3.2		mg CaCO3/L	P298964	
	SM 2540 C-97	TDS	85		mg/L	P298990	
	SM 2540 D-97	TSS	3	I	mg/L	P298984	
	SM 4500 F-C-97	Fluoride	0.036	I	mg F/L	P298775	
1770122	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P298736	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.86		mg N/L	P298646	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.049		mg N/L	P298656	
	EPA 365.1 Rev. 2.0	Total-P	0.050		mg P/L	P298637	
	SM 5310 B-00	Organic Carbon	27		mg C/L	P298679	
1770125	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P298403	

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: 19010123 Unnamed br. at CR125

Collection Date/Time: 02/09/2016 10:25

Field ID: 19010123 Unnamed br. at CR125

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1770120	EPA 180.1 Rev. 2.0	Turbidity	4.7		NTU	P298416	
	EPA 300.0 Rev. 2.1	Chloride	9.2		mg Cl/L	P298491	
		Sulfate	5.0		mg SO4/L	P298488	
	SM 2120 B	Color (true)	260		PCU	P298408	
	SM 2320 B-97	Total Alkalinity	0.94	I	mg CaCO3/L	P298964	
	SM 2540 C-97	TDS	80		mg/L	P298990	
	SM 2540 D-97	TSS	2	I	mg/L	P298984	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P298775	
1770123	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P298737	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P298646	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P298656	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P298637	
	SM 5310 B-00	Organic Carbon	29		mg C/L	P298679	
1770126	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.025		mg P/L	P298403	

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: 19010042 Calkins trib Hamp reg

Collection Date/Time: 02/09/2016 09:50

Field ID: 19010042 Calkins trib Hamp reg

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1770121	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P298416	
	EPA 300.0 Rev. 2.1	Chloride	6.7		mg Cl/L	P298613	
		Sulfate	1.2		mg SO4/L	P298615	

Field ID: 19010042 Calkins trib Hamp reg

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1770121	SM 2120 B	Color (true)	500		PCU	P298408	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P298964	
	SM 2540 C-97	TDS	106		mg/L	P298990	
	SM 2540 D-97	TSS	2	I	mg/L	P298984	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P298775	
1770124	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P298737	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P298646	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P298656	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P298637	
	SM 5310 B-00	Organic Carbon	49		mg C/L	P298679	
1770127	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P298403	

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: P298416

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P298488

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P298491

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P298613

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P298615

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P298736

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298737

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298646

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P298656

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298637

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298403

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

Reference Method: SM 2120 B
Batch ID: P298408

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P298964

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

Reference Method: SM 2540 C-97
Batch ID: P298990

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P298984

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P298775

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P298679

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: P298488

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298491

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298613

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298615

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298736

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298737

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298646

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298646

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P298656

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298637

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298403

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

Reference Method: SM 2320 B-97
Batch ID: P298964

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P298775

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	94 - 108

Reference Method: SM 5310 B-00
Batch ID: P298679

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298488

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769895	Sulfate	96.9		P	90 - 110
1769897	Sulfate	98.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298491

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769895	Chloride	102		P	90 - 110
1769897	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298613

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770164	Chloride	97.2		P	90 - 110
1770165	Chloride	98.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298615

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770164	Sulfate	94.4		P	90 - 110
1770165	Sulfate	93.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298736

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770048	Ammonia-N	96.8	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298737

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770131	Ammonia-N	97.6	98.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770087	Kjeldahl Nitrogen	98.9	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P298656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770049	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298637

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770122	Total-P	97.8	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770125	O-Phosphate-P	97.0	97.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P298775

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770128	Fluoride	99.1	98.4	P/P	94 - 107

Reference Method: SM 5310 B-00
Batch ID: P298679

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770069	Organic Carbon	95.6	94.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P298416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770119	Turbidity	1.36	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298488

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769895	Sulfate	0.187	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298491

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769895	Chloride	0.00637	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298613

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770164	Chloride	0.100	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298615

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770164	Sulfate	0.110	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770048	Ammonia-N	0.930	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770131	Ammonia-N	1.29	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770087	Kjeldahl Nitrogen	1.83	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P298656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770049	NO2NO3-N	0.962	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298637

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770122	Total-P	3.35	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770125	O-Phosphate-P	0.638	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P298408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770085	Color (true)	1.41	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P298964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770128	Total Alkalinity	0.135	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P298990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770042	TDS	6.59	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P298775

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770128	Fluoride	0.473	Spike	P	0 - 3.7

Reference Method: SM 5310 B-00
Batch ID: P298679

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770069	Organic Carbon	0.787	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 300.0 Rev. 2.1
Run ID: A67519
Included Lab Sample IDs: 1770119, 1770120, 1770121

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.2	97.6	P/P	90 - 110
Chloride	99.9	99.1	P/P	90 - 110
Sulfate	95.0	96.6	P/P	90 - 110
Sulfate	96.6	94.6	P/P	90 - 110
Sulfate	97.2	92.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A67554
Included Lab Sample IDs: 1770125, 1770126, 1770127

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	98.5	P/P	90 - 110
O-Phosphate-P	99.1	99.0	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A67555
Included Lab Sample IDs: 1770119, 1770120, 1770121

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.9	98.8	P/P	90 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A67557

Included Lab Sample IDs: 1770119, 1770120, 1770121

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A67618

Included Lab Sample IDs: 1770122, 1770123, 1770124

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	104	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A67629

Included Lab Sample IDs: 1770122, 1770123, 1770124

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.4	93.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A67633

Included Lab Sample IDs: 1770119, 1770120, 1770121

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A67645

Included Lab Sample IDs: 1770122, 1770123, 1770124

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A67650

Included Lab Sample IDs: 1770122, 1770123, 1770124

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.7	98.6	P/P	90 - 110
Ammonia-N	99.2	98.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A67651

Included Lab Sample IDs: 1770122, 1770123, 1770124

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	97.7	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A67716

Included Lab Sample IDs: 1770119, 1770120, 1770121

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

Quality Assurance Report Calibration Verification

* 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					1.36	
EPA 300.0 Rev. 2.1	Chloride	102	102	102		0.0063	
	Chloride	99.3	97.2	98.5		0.100	
	Sulfate	99.3	96.9	98.4		0.187	
	Sulfate	95.0	94.4	93.1		0.110	
EPA 350.1 Rev. 2.0	Ammonia-N	98.1	96.8	98.0			0.930
	Ammonia-N	97.9	97.6	98.9			1.29
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.4	98.9	102			1.83
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	105	104	104			0.962
EPA 365.1 Rev. 2.0	Total-P	102	97.8	102			3.35
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.0	97.8			0.638
SM 2120 B	Color (true)					1.41	
SM 2320 B-97	Total Alkalinity	100				0.135	
SM 2540 C-97	TDS					6.59	
SM 4500 F-C-97	Fluoride	97.1	99.1	98.4			0.473
SM 5310 B-00	Organic Carbon	93.6	95.6	94.9			0.787

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1770119, 1770120, 1770121
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1770119, 1770120, 1770121
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1770119, 1770120, 1770121
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1770122, 1770123, 1770124
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1770122, 1770123, 1770124
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1770122, 1770123, 1770124
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1770122, 1770123, 1770124
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1770125, 1770126, 1770127
SM 2120 B / E31780	True Color measured at 450 nm	1770119, 1770120, 1770121
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1770119, 1770120, 1770121
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1770119, 1770120, 1770121
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1770119, 1770120, 1770121
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1770119, 1770120, 1770121
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1770122, 1770123, 1770124

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	02/10/2016			02/10/2016 15:11	Sima Feizi	1770119, 1770120, 1770121
EPA 300.0 Rev. 2.1	02/10/2016			02/12/2016	Ping Hua	1770119, 1770120, 1770121
EPA 350.1 Rev. 2.0	02/10/2016			02/17/2016	Diana M. Turner	1770122, 1770123, 1770124
EPA 351.2 Rev. 2.0	02/10/2016	02/16/2016	Sofia Elnemr	02/17/2016	Bryan A. Werth	1770122, 1770123, 1770124
EPA 353.2 Rev. 2.0	02/10/2016			02/16/2016	Peter D. Kaus	1770122, 1770123, 1770124
EPA 365.1 Rev. 2.0	02/10/2016	02/16/2016	Christopher Armour	02/17/2016	Lipi Saha	1770122, 1770123, 1770124
EPA 365.1 Rev. 2.0 dissolved	02/10/2016			02/10/2016 13:39	Bryan A. Werth	1770125
	02/10/2016			02/10/2016 13:55	Bryan A. Werth	1770126, 1770127
SM 2120 B	02/10/2016			02/10/2016 13:46	Rochelle Y Jackson	1770119
	02/10/2016			02/10/2016 13:47	Rochelle Y Jackson	1770120
	02/10/2016			02/10/2016 13:48	Rochelle Y Jackson	1770121
SM 2320 B-97	02/10/2016			02/21/2016	Dale L. Simmons	1770119, 1770120, 1770121
SM 2540 C-97	02/10/2016			02/12/2016	Yijie Li	1770119, 1770120, 1770121
SM 2540 D-97	02/10/2016			02/12/2016	Yijie Li	1770119, 1770120, 1770121
SM 4500 F-C-97	02/10/2016			02/12/2016	Dale L. Simmons	1770119, 1770120, 1770121
SM 5310 B-00	02/10/2016			02/15/2016	Sofia Elnemr	1770122, 1770123, 1770124