Chemical Analysis Report

NE-DIST-2020-07-02-01

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

Event Description: **ICW Boat 2020 HOLD**
Request ID: **RQ-2020-05-04-35**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 24-JUL-2020 10:23

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 groups are included in this report: Metals and 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 by the Florida Department of Health Environmental Laboratory Certification Program 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: Ortega R BR Roosevelt Blvd US 17 **Collection Date/Time: 07/01/2020 13:20**

Field ID: 20030077 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2180365	EPA 180.1 Rev. 2.0	Turbidity	13		NTU	P384010	
	EPA 300.0 Rev. 2.1	Bromide	2.9		mg Br/L	P384895	
	SM 2320 B-2011	Total Alkalinity	64		mg CaCO3/L	P384611	
	SM 2540 D-2011	TSS	19		mg/L	P384167	
	SM 4500 F-C-2011	Fluoride	0.16		mg F/L	P384389	
2180367	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P384038	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P384691	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P384116	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P384084	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P384110	
2180369	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.088		mg P/L	P384086	
2180377	EPA 200.7 Rev. 4.4	Iron	560		ug/L	P384078	
		Manganese	37.3		ug/L	P384078	
		Zinc	6.7	I	ug/L	P384078	
	EPA 200.8 Rev. 5.4	Aluminum	333		ug/L	P384078	
		Antimony	0.21		ug/L	P384078	
		Arsenic	2.92		ug/L	P384078	
		Cadmium	0.020	U	ug/L	P384078	
		Chromium	0.81	I	ug/L	P384078	
		Copper	2.59		ug/L	P384078	
		Lead	2.70		ug/L	P384078	
		Nickel	0.54	I	ug/L	P384078	
		Selenium	0.21	I	ug/L	P384078	
		Silver	0.010	U	ug/L	P384078	
		Thallium	0.10	U	ug/L	P384078	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Bromide: Batch matrix spike recoveries for one of two spiked samples and batch relative percent difference are unavailable because of high analyte concentration in the QC sample.
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Cedar CR Blanding Blvd BR RT 21 **Collection Date/Time: 07/01/2020 13:35**

Field ID: 20030083 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2180366	EPA 180.1 Rev. 2.0	Turbidity	9.0	A	NTU	P384010	
	EPA 300.0 Rev. 2.1	Bromide	0.54		mg Br/L	P384895	
	SM 2320 B-2011	Total Alkalinity	82		mg CaCO3/L	P384611	
	SM 2540 D-2011	TSS	12		mg/L	P384167	
	SM 4500 F-C-2011	Fluoride	0.14		mg F/L	P384389	
2180368	EPA 350.1 Rev. 2.0	Ammonia-N	0.035		mg N/L	P384039	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.93		mg N/L	P384566	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P384116	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P384400	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P384110	
2180370	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P384086	
2180378	EPA 200.7 Rev. 4.4	Iron	410		ug/L	P384078	
		Manganese	27.3		ug/L	P384078	
		Zinc	8.1	I	ug/L	P384078	
	EPA 200.8 Rev. 5.4	Aluminum	249		ug/L	P384078	
		Antimony	0.29		ug/L	P384078	
		Arsenic	2.68		ug/L	P384078	
		Cadmium	0.020	I	ug/L	P384078	
		Chromium	0.77	I	ug/L	P384078	
		Copper	2.40		ug/L	P384078	
		Lead	2.31		ug/L	P384078	
		Nickel	0.69	I	ug/L	P384078	
		Selenium	0.20	U	ug/L	P384078	
		Silver	0.010	U	ug/L	P384078	
		Thallium	0.10	U	ug/L	P384078	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Bromide: Batch matrix spike recoveries for one of two spiked samples and batch relative percent difference are unavailable because of high analyte concentration in the QC sample.
SM 2540 D-2011: 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: P384010

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P384078

Component	Result	Code	Units
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P384078

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384895

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384038

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384039

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384566

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384691

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384116

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384084

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384400

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384086

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

Reference Method: SM 2320 B-2011
Batch ID: P384611

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

Reference Method: SM 2540 D-2011
Batch ID: P384167

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P384389

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P384110

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P384078

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	106		P	85 - 115
Manganese	102		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P384078

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	93.5		P	85 - 115
Antimony	95.0		P	85 - 115
Arsenic	94.9		P	85 - 115
Cadmium	95.4		P	85 - 115
Chromium	99.0		P	85 - 115
Copper	95.4		P	85 - 115
Lead	94.5		P	85 - 115
Nickel	93.4		P	85 - 115
Selenium	94.9		P	85 - 115
Silver	99.0		P	85 - 115
Thallium	96.0		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384895

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	96.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384038

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384039

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: P384566

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	108		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384691

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384116

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: P384084

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384400

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	108		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384086

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

Reference Method: SM 2320 B-2011
Batch ID: P384611

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P384389

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P384110

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P384078

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180579	Iron	106	105	P/P	80 - 120
2180579	Manganese	104	104	P/P	80 - 120
2180579	Zinc	107	107	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P384078

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180579	Aluminum	89.1	89.1	P/P	80 - 120
2180579	Antimony	93.3	94.3	P/P	80 - 120
2180579	Arsenic	92.5	92.3	P/P	80 - 120
2180579	Cadmium	96.0	95.8	P/P	80 - 120
2180579	Chromium	97.9	97.9	P/P	80 - 120
2180579	Copper	93.9	93.3	P/P	80 - 120
2180579	Lead	94.4	94.9	P/P	80 - 120
2180579	Nickel	91.9	97.2	P/P	80 - 120
2180579	Selenium	91.1	90.2	P/P	80 - 120
2180579	Silver	97.4	98.3	P/P	80 - 120
2180579	Thallium	99.5	101	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384895

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180365	Bromide	95.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180361	Ammonia-N	100	99.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384039

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180432	Ammonia-N	98.6	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384566

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180404	Kjeldahl Nitrogen	102	110	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183073	Kjeldahl Nitrogen	102	109	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384116

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180368	NO2NO3-N	98.0	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180328	Total-P	101	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384400

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180368	Total-P	107	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384086

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180353	O-Phosphate-P	96.0	97.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P384389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180449	Fluoride	98.7	98.2	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P384110

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180114	Organic Carbon	98.5	98.6	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P384010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180366	Turbidity	0.111	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P384078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180579	Iron	0.736	Spike	P	0 - 20
2180579	Manganese	0.0808	Spike	P	0 - 20
2180579	Zinc	0.237	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P384078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180579	Aluminum	0.0230	Spike	P	0 - 20
2180579	Antimony	1.07	Spike	P	0 - 20
2180579	Arsenic	0.204	Spike	P	0 - 20
2180579	Cadmium	0.220	Spike	P	0 - 20
2180579	Chromium	0.0241	Spike	P	0 - 20
2180579	Copper	0.635	Spike	P	0 - 20
2180579	Lead	0.547	Spike	P	0 - 20
2180579	Nickel	5.68	Spike	P	0 - 20
2180579	Selenium	0.945	Spike	P	0 - 20
2180579	Silver	0.952	Spike	P	0 - 20
2180579	Thallium	1.42	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180361	Ammonia-N	0.718	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384039

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180432	Ammonia-N	0.360	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384566

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180404	Kjeldahl Nitrogen	4.42	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183073	Kjeldahl Nitrogen	4.04	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180368	NO2NO3-N	0.284	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180328	Total-P	1.92	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180368	Total-P	1.22	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384086

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180353	O-Phosphate-P	1.04	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P384611

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180449	Total Alkalinity	0.158	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
Batch ID: P384389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180449	Fluoride	0.462	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P384110

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180114	Organic Carbon	0.0875	Spike	P	0 - 20

Quality Assurance Report
Precision

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A99661
Included Lab Sample IDs: 2180365, 2180366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	102	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A99668
Included Lab Sample IDs: 2180367, 2180368

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.5	P/P	90 - 110
Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A99692
Included Lab Sample IDs: 2180369, 2180370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	98.2	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A99701
Included Lab Sample IDs: 2180367, 2180368

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.6	99.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A99705
Included Lab Sample IDs: 2180367, 2180368

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A99727
Included Lab Sample IDs: 2180367

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A99759
Included Lab Sample IDs: 2180377, 2180378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	103	105	P/P	90 - 110
Manganese	103	103	P/P	90 - 110
Zinc	104	104	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 4500 F-C-2011
Run ID: A99792
Included Lab Sample IDs: 2180365, 2180366

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A99818
Included Lab Sample IDs: 2180377, 2180378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	91.6	93.2	P/P	90 - 110
Antimony	93.6	95.9	P/P	90 - 110
Arsenic	92.1	91.9	P/P	90 - 110
Cadmium	94.4	96.7	P/P	90 - 110
Chromium	95.0	96.9	P/P	90 - 110
Copper	91.6	91.1	P/P	90 - 110
Lead	94.5	94.3	P/P	90 - 110
Nickel	91.3	91.4	P/P	90 - 110
Selenium	95.7	97.0	P/P	90 - 110
Silver	95.6	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A99826
Included Lab Sample IDs: 2180368

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

Reference Method: SM 2320 B-2011
Run ID: A99877
Included Lab Sample IDs: 2180365, 2180366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A99895
Included Lab Sample IDs: 2180368

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	107	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A99899
Included Lab Sample IDs: 2180377, 2180378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	92.4	91.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A99951
Included Lab Sample IDs: 2180367

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A99951
Included Lab Sample IDs: 2180367

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	97.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A99977
Included Lab Sample IDs: 2180365, 2180366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	98.3	94.0	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					0.111	
EPA 200.7 Rev. 4.4	Iron	106	106	105			0.736
	Manganese	102	104	104			0.0808
	Zinc	104	107	107			0.237
EPA 200.8 Rev. 5.4	Aluminum	93.5	89.1	89.1			0.0230
	Antimony	95.0	93.3	94.3			1.07
	Arsenic	94.9	92.5	92.3			0.204
	Cadmium	95.4	96.0	95.8			0.220
	Chromium	99.0	97.9	97.9			0.0241
	Copper	95.4	93.9	93.3			0.635
	Lead	94.5	94.4	94.9			0.547
	Nickel	93.4	91.9	97.2			5.68
	Selenium	94.9	91.1	90.2			0.945
	Silver	99.0	97.4	98.3			0.952
	Thallium	96.0	99.5	101			1.42
EPA 300.0 Rev. 2.1	Bromide	96.9	95.2				
EPA 350.1 Rev. 2.0	Ammonia-N	102	100	99.6			0.718
	Ammonia-N	102	98.6	99.0			0.360
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	102	110			4.42
	Kjeldahl Nitrogen	100	102	109			4.04
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	98.0	97.5			0.284
EPA 365.1 Rev. 2.0	Total-P	99.2	101	103			1.92
	Total-P	108	107	105			1.22
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.5	96.0	97.0			1.04
SM 2320 B-2011	Total Alkalinity	99.5				0.158	
SM 4500 F-C-2011	Fluoride	100	98.7	98.2			0.462
SM 5310 B-2011	Organic Carbon	100	98.5	98.6			0.0875

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2180365, 2180366
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2180377, 2180378
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2180377, 2180378
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2180365, 2180366
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2180367, 2180368
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2180367, 2180368
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2180367, 2180368
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2180367, 2180368
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2180369, 2180370
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2180365, 2180366
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2180365, 2180366
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2180365, 2180366
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2180367, 2180368

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	07/02/2020			07/02/2020 14:42	Yen Ta	2180365, 2180366
EPA 200.7 Rev. 4.4	07/02/2020	07/06/2020 13:00	Elliott D. Healy	07/08/2020 17:49	Betina Topolski	2180377
	07/02/2020	07/06/2020 13:00	Elliott D. Healy	07/08/2020 17:57	Betina Topolski	2180378
EPA 200.8 Rev. 5.4	07/02/2020	07/06/2020 13:00	Elliott D. Healy	07/10/2020 16:42	Justin Cutchin	2180377
	07/02/2020	07/06/2020 13:00	Elliott D. Healy	07/10/2020 16:49	Justin Cutchin	2180378
	07/02/2020	07/06/2020 13:00	Elliott D. Healy	07/15/2020 17:28	Alexander Thompson	2180377
	07/02/2020	07/06/2020 13:00	Elliott D. Healy	07/15/2020 17:33	Alexander Thompson	2180378
EPA 300.0 Rev. 2.1	07/02/2020			07/15/2020 19:38	Julia Storbeck	2180366
	07/02/2020			07/15/2020 20:33	Julia Storbeck	2180365
EPA 350.1 Rev. 2.0	07/02/2020			07/05/2020 20:27	Ping Hua	2180367
	07/02/2020			07/05/2020 20:44	Ping Hua	2180368
EPA 351.2 Rev. 2.0	07/02/2020	07/14/2020 11:10	Sima Feizi	07/15/2020 13:47	Julia Storbeck	2180368
	07/02/2020	07/16/2020 09:35	Sima Feizi	07/17/2020 13:54	Jhamieka S. Greenwood	2180367
EPA 353.2 Rev. 2.0	07/02/2020			07/07/2020 08:47	Beverly Y. Sanders	2180368
	07/02/2020			07/07/2020 08:53	Beverly Y. Sanders	2180367
EPA 365.1 Rev. 2.0	07/02/2020	07/06/2020 12:28	Yen Ta	07/08/2020 08:19	Benjamin T. Nordmann	2180367
	07/02/2020	07/10/2020 13:26	Yen Ta	07/13/2020 10:31	Benjamin T. Nordmann	2180368
EPA 365.1 Rev. 2.0 dissolved	07/02/2020			07/02/2020 16:58	Carlos Miranda	2180369
	07/02/2020			07/02/2020 16:59	Carlos Miranda	2180370
SM 2320 B-2011	07/02/2020			07/13/2020 21:00	Dale L. Simmons	2180365
	07/02/2020			07/13/2020 21:11	Dale L. Simmons	2180366
SM 2540 D-2011	07/02/2020			07/06/2020 19:14	Madeline Gruver	2180365, 2180366
SM 4500 F-C-2011	07/02/2020			07/09/2020 02:23	Dale L. Simmons	2180365
	07/02/2020			07/09/2020 02:36	Dale L. Simmons	2180366
SM 5310 B-2011	07/02/2020			07/07/2020 00:53	Lauren Lees	2180367
	07/02/2020			07/07/2020 01:05	Lauren Lees	2180368