

Chemical Analysis Report

NE-DIST-2020-08-27-02

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

Event Description: **ICW Boat**
Request ID: **RQ-2020-08-24-07**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
Suite 100
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Certified by: Colin Wright, Program Administrator

Date Certified: 17-SEP-2020 10:20

A handwritten signature in black ink, appearing to read "Colin Wright", is shown on a light-colored background.

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: Cedar CR Blanding Blvd. BR RT 21

Collection Date/Time: 08/26/2020 11:15

Field ID: 20030083

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2192715	EPA 180.1 Rev. 2.0	Turbidity	6.6	A	NTU	P386639	
	EPA 300.0 Rev. 2.1	Bromide	0.14	J	mg Br/L	P387262	MS
	SM 2320 B-2011	Total Alkalinity	83	A	mg CaCO3/L	P386789	
	SM 2540 D-2011	TSS	9	I	mg/L	P386813	
	SM 4500 F-C-2011	Fluoride	0.11		mg F/L	P386793	
2192717	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P387019	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P386688	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P386673	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P386680	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P386726	
2192719	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.064		mg P/L	P386648	
2192725	EPA 200.7 Rev. 4.4	Iron	530		ug/L	P386749	
		Manganese	23.3		ug/L	P386749	
		Zinc	6.3	I	ug/L	P386749	
	EPA 200.8 Rev. 5.4	Aluminum	191		ug/L	P386749	
		Antimony	0.29		ug/L	P386749	
		Arsenic	2.64		ug/L	P386749	
		Cadmium	0.020	U	ug/L	P386749	
		Chromium	0.85	I	ug/L	P386749	
		Copper	3.08		ug/L	P386749	
		Lead	2.02		ug/L	P386749	
		Nickel	0.73	I	ug/L	P386749	
		Selenium	0.20	U	ug/L	P386749	
		Silver	0.010	U	ug/L	P386749	
		Thallium	0.10	U	ug/L	P386749	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Bromide: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Ortega R BR Roosevelt Blvd. US 17

Collection Date/Time: 08/26/2020 11:30

Field ID: 20030077

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2192716	EPA 180.1 Rev. 2.0	Turbidity	8.3		NTU	P386639	
	EPA 300.0 Rev. 2.1	Bromide	0.45	J	mg Br/L	P387262	MS
	SM 2320 B-2011	Total Alkalinity	55		mg CaCO3/L	P386788	
	SM 2540 D-2011	TSS	10	I	mg/L	P386813	
	SM 4500 F-C-2011	Fluoride	0.090	I	mg F/L	P386792	
2192718	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P387020	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P386688	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.034		mg N/L	P386673	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P386680	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P386726	
2192720	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.059		mg P/L	P386648	
2192726	EPA 200.7 Rev. 4.4	Iron	510		ug/L	P386749	
		Manganese	15.4		ug/L	P386749	
		Zinc	5.0	U	ug/L	P386749	
	EPA 200.8 Rev. 5.4	Aluminum	236		ug/L	P386749	
		Antimony	0.18	I	ug/L	P386749	
		Arsenic	2.37		ug/L	P386749	
		Cadmium	0.020	U	ug/L	P386749	
		Chromium	0.79	I	ug/L	P386749	
		Copper	2.32		ug/L	P386749	
		Lead	1.74		ug/L	P386749	
		Nickel	0.53	I	ug/L	P386749	
		Selenium	0.20	U	ug/L	P386749	
		Silver	0.010	U	ug/L	P386749	
		Thallium	0.10	U	ug/L	P386749	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Bromide: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P386639

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P386749

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: P386749

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: P387262

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387019

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387020

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386688

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386673

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386680

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386648

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

Reference Method: SM 2320 B-2011
Batch ID: P386788

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

Reference Method: SM 2320 B-2011
Batch ID: P386789

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

Reference Method: SM 2540 D-2011
Batch ID: P386813

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P386792

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P386793

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P386726

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: P386749

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	104		P	85 - 115
Manganese	101		P	85 - 115
Zinc	99.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P386749

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	93.4		P	85 - 115
Antimony	100		P	85 - 115
Arsenic	99.5		P	85 - 115
Cadmium	96.1		P	85 - 115
Chromium	103		P	85 - 115
Copper	96.8		P	85 - 115
Lead	98.1		P	85 - 115
Nickel	95.6		P	85 - 115
Selenium	97.6		P	85 - 115
Silver	107		P	85 - 115
Thallium	99.4		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387262

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	96.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387019

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387020

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386688

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386673

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386680

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386648

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: P386788

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P386789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P386792

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.7		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P386793

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.6		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P386726

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P386749

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2192874	Iron	108	110	P/P	80 - 120
2192874	Manganese	106	105	P/P	80 - 120
2192874	Zinc	108	106	P/P	80 - 120
2192988	Iron	105		P	80 - 120
2192988	Manganese	101		P	80 - 120
2192988	Zinc	103		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P386749

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2192874	Aluminum	94.7	93.5	P/P	80 - 120
2192874	Antimony	100	98.9	P/P	80 - 120
2192874	Arsenic	100	97.9	P/P	80 - 120
2192874	Cadmium	98.1	97.3	P/P	80 - 120
2192874	Chromium	103	102	P/P	80 - 120
2192874	Copper	97.5	95.7	P/P	80 - 120
2192874	Lead	101	101	P/P	80 - 120
2192874	Nickel	97.2	95.7	P/P	80 - 120
2192874	Selenium	98.0	96.1	P/P	80 - 120
2192874	Silver	106	107	P/P	80 - 120
2192874	Thallium	101	103	P/P	80 - 120
2192988	Aluminum	93.2		P	80 - 120
2192988	Antimony	105		P	80 - 120
2192988	Arsenic	107		P	80 - 120
2192988	Cadmium	101		P	80 - 120
2192988	Chromium	105		P	80 - 120
2192988	Copper	99.0		P	80 - 120
2192988	Lead	102		P	80 - 120
2192988	Nickel	99.2		P	80 - 120
2192988	Selenium	104		P	80 - 120
2192988	Silver	106		P	80 - 120
2192988	Thallium	107		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387262

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2192715	Bromide	91.5	89.4	P/F	90 - 110
2192716	Bromide	87.1		F	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387019

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2192467	Ammonia-N	99.6	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387020

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2192843	Ammonia-N	99.4	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386688

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2192718	Kjeldahl Nitrogen	101	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386673

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2192664	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386680

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2192710	Total-P	106	109	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386648

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2192447	O-Phosphate-P	97.1	97.2	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P386792

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2192663	Fluoride	98.9	97.1	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P386793

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2192715	Fluoride	99.8	100	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P386726

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2192444	Organic Carbon	95.2	94.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P386639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2192715	Turbidity	6.17	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P386749

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2192874	Iron	1.61	Spike	P	0 - 20
2192874	Manganese	0.817	Spike	P	0 - 20
2192874	Zinc	1.50	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P386749

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2192874	Aluminum	1.03	Spike	P	0 - 20
2192874	Antimony	1.49	Spike	P	0 - 20
2192874	Arsenic	2.51	Spike	P	0 - 20
2192874	Cadmium	0.872	Spike	P	0 - 20
2192874	Chromium	0.742	Spike	P	0 - 20
2192874	Copper	1.88	Spike	P	0 - 20
2192874	Lead	0.404	Spike	P	0 - 20
2192874	Nickel	1.48	Spike	P	0 - 20
2192874	Selenium	1.97	Spike	P	0 - 20
2192874	Silver	0.701	Spike	P	0 - 20
2192874	Thallium	2.03	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387262

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2192715	Bromide	1.76	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2192467	Ammonia-N	0.752	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387020

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2192843	Ammonia-N	0.804	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2192718	Kjeldahl Nitrogen	0.642	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386673

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2192664	NO2NO3-N	0.482	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2192710	Total-P	3.27	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386648

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2192447	O-Phosphate-P	0.103	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P386788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2192663	Total Alkalinity	0.197	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P386789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2192715	Total Alkalinity	1.91	Sample	P	0 - 8.1

Reference Method: SM 2540 D-2011
Batch ID: P386813

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2192835	TSS	2.84	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P386792

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2192663	Fluoride	1.43	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P386793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2192715	Fluoride	0.463	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P386726

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2192444	Organic Carbon	0.640	Spike	P	0 - 20

* 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: A100685

Included Lab Sample IDs: 2192715, 2192716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A100687

Included Lab Sample IDs: 2192719, 2192720

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.0	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100698

Included Lab Sample IDs: 2192717, 2192718

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

Reference Method: SM 5310 B-2011

Run ID: A100718

Included Lab Sample IDs: 2192717, 2192718

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.0	95.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100726

Included Lab Sample IDs: 2192717, 2192718

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100735

Included Lab Sample IDs: 2192717, 2192718

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.7	95.2	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A100747

Included Lab Sample IDs: 2192715, 2192716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110
Total Alkalinity	101	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A100747

Included Lab Sample IDs: 2192715, 2192716

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A100747

Included Lab Sample IDs: 2192715, 2192716

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A100789

Included Lab Sample IDs: 2192725, 2192726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	103	103	P/P	90 - 110
Manganese	102	100	P/P	90 - 110
Zinc	104	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100832

Included Lab Sample IDs: 2192717, 2192718

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.9	P/P	90 - 110
Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A100913

Included Lab Sample IDs: 2192725, 2192726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	96.0	95.8	P/P	90 - 110
Antimony	103	103	P/P	90 - 110
Arsenic	98.2	97.1	P/P	90 - 110
Cadmium	95.4	95.1	P/P	90 - 110
Chromium	99.8	98.8	P/P	90 - 110
Copper	94.5	93.6	P/P	90 - 110
Lead	95.6	95.8	P/P	90 - 110
Nickel	95.6	94.8	P/P	90 - 110
Selenium	99.6	97.6	P/P	90 - 110
Thallium	94.0	95.3	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100925

Included Lab Sample IDs: 2192715, 2192716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	101	95.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A100945

Included Lab Sample IDs: 2192725, 2192726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	105	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 SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					6.17	
EPA 200.7 Rev. 4.4	Iron	104	108	110	105		1.61
	Manganese	101	106	105	101		0.817
	Zinc	99.8	108	106	103		1.50
EPA 200.8 Rev. 5.4	Aluminum	93.4	93.2	94.7	93.5		1.03
	Antimony	100	105	100	98.9		1.49
	Arsenic	99.5	107	100	97.9		2.51
	Cadmium	96.1	101	98.1	97.3		0.872
	Chromium	103	105	103	102		0.742
	Copper	96.8	99.0	97.5	95.7		1.88
	Lead	98.1	101	102	101		0.404
	Nickel	95.6	99.2	97.2	95.7		1.48
	Selenium	97.6	104	98.0	96.1		1.97
	Silver	107	106	106	107		0.701
	Thallium	99.4	107	101	103		2.03
EPA 300.0 Rev. 2.1	Bromide	96.7	91.5	89.4	87.1		1.76
EPA 350.1 Rev. 2.0	Ammonia-N	101	99.6	100			0.752
	Ammonia-N	101	99.4	101			0.804
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	101	99.8			0.642
EPA 353.2 Rev. 2.0	NO2NO3-N	104	101	100			0.482
EPA 365.1 Rev. 2.0	Total-P	104	106	109			3.27
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.5	97.1	97.2			0.103
SM 2320 B-2011	Total Alkalinity	102				0.197	
	Total Alkalinity	102				1.91	
SM 2540 D-2011	TSS					2.84	
SM 4500 F-C-2011	Fluoride	98.7	98.9	97.1			1.43
	Fluoride	99.6	99.8	100			0.463
SM 5310 B-2011	Organic Carbon	94.2	95.2	94.5			0.640

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2192715, 2192716
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2192725, 2192726
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2192725, 2192726
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2192715, 2192716
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2192717, 2192718
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2192717, 2192718
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2192717, 2192718
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2192717, 2192718
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2192719, 2192720
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2192715, 2192716
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2192715, 2192716
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2192715, 2192716
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2192717, 2192718

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	08/27/2020			08/27/2020 15:06	Yen Ta	2192715, 2192716
EPA 200.7 Rev. 4.4	08/27/2020	08/31/2020 13:30	Elliott D. Healy	09/02/2020 17:26	Betina Topolski	2192725
	08/27/2020	08/31/2020 13:30	Elliott D. Healy	09/02/2020 17:34	Betina Topolski	2192726
EPA 200.8 Rev. 5.4	08/27/2020	08/31/2020 13:30	Elliott D. Healy	09/10/2020 19:57	Alexander Thompson	2192725
	08/27/2020	08/31/2020 13:30	Elliott D. Healy	09/10/2020 20:05	Alexander Thompson	2192726
	08/27/2020	08/31/2020 13:30	Elliott D. Healy	09/11/2020 14:49	Alexander Thompson	2192725
	08/27/2020	08/31/2020 13:30	Elliott D. Healy	09/11/2020 14:56	Alexander Thompson	2192726
EPA 300.0 Rev. 2.1	08/27/2020			09/09/2020 18:22	Lipi Saha	2192715
	08/27/2020			09/09/2020 19:14	Lipi Saha	2192716
EPA 350.1 Rev. 2.0	08/27/2020			09/05/2020 13:11	Ping Hua	2192717
	08/27/2020			09/05/2020 13:27	Ping Hua	2192718
EPA 351.2 Rev. 2.0	08/27/2020	08/28/2020 12:10	David Boose	08/31/2020 13:18	Virginia P. Brown	2192718
	08/27/2020	08/28/2020 12:10	David Boose	08/31/2020 13:29	Virginia P. Brown	2192717
EPA 353.2 Rev. 2.0	08/27/2020			08/28/2020 09:55	Beverly Y. Sanders	2192717
	08/27/2020			08/28/2020 10:04	Beverly Y. Sanders	2192718
EPA 365.1 Rev. 2.0	08/27/2020	08/28/2020 12:36	Yen Ta	08/31/2020 10:09	Benjamin T. Nordmann	2192717
	08/27/2020	08/28/2020 12:36	Yen Ta	08/31/2020 10:10	Benjamin T. Nordmann	2192718
EPA 365.1 Rev. 2.0 dissolved	08/27/2020			08/27/2020 15:50	Virginia P. Brown	2192719, 2192720
SM 2320 B-2011	08/27/2020			08/28/2020 18:33	Dale L. Simmons	2192716
	08/27/2020			08/28/2020 22:41	Dale L. Simmons	2192715
SM 2540 D-2011	08/27/2020			08/28/2020 19:46	Madeline Gruver	2192715, 2192716
SM 4500 F-C-2011	08/27/2020			08/28/2020 18:33	Dale L. Simmons	2192716
	08/27/2020			08/28/2020 22:30	Dale L. Simmons	2192715
SM 5310 B-2011	08/27/2020			08/30/2020 09:33	Ping Hua	2192717
	08/27/2020			08/30/2020 09:45	Ping Hua	2192718