

Chemical Analysis Report

NE-DIST-2021-07-07-05

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

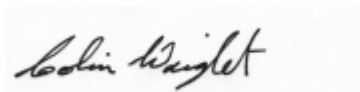
Event Description: **Callahan Boat**
Request ID: **RQ-2021-07-05-32**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
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Certified by: Colin Wright, Program Administrator

Date Certified: 29-JUL-2021 13:42

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular 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: Thomas Creek 5 Miles Down from Ethel

Collection Date/Time: 07/06/2021 11:05

Field ID: G4NE0298

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2260513	EPA 200.7 Rev. 4.4	Calcium	9.66		mg/L	P400630	
		Iron	1.0E+03		ug/L	P400630	
		Magnesium	4.17		mg/L	P400630	
		Manganese	13.6		ug/L	P400630	
	EPA 200.8 Rev. 5.4	Zinc	7.8	I	ug/L	P400630	
		Aluminum	412		ug/L	P400630	
		Antimony	0.62		ug/L	P400630	
		Arsenic	1.41		ug/L	P400630	
		Beryllium	0.047		ug/L	P400630	
		Cadmium	0.020	U	ug/L	P400630	
		Chromium	1.1	I	ug/L	P400630	
		Copper	1.17		ug/L	P400630	
		Lead	0.66		ug/L	P400630	
		Nickel	1.5	I	ug/L	P400630	
		Selenium	0.68	I	ug/L	P400630	
		Silver	0.010	U	ug/L	P400630	
		Thallium	0.10	U	ug/L	P400630	

Sample Location: Thomas CR 4 Mi Below City Prison

Collection Date/Time: 07/06/2021 11:20

Field ID: 19020033

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2260507	EPA 180.1 Rev. 2.0	Turbidity	2.3	A	NTU	P400647	
	SM 2320 B-2011	Total Alkalinity	32		mg CaCO3/L	P400781	
	SM 2540 D-2011	TSS	3	I	mg/L	P400859	
	SM 4500 F-C-2011	Fluoride	0.071	I	mg F/L	P400785	
2260508	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P401323	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P401173	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.030		mg N/L	P400936	
	EPA 365.1 Rev. 2.0	Total-P	0.52		mg P/L	P400747	
	SM 5310 B-2011	Organic Carbon	35		mg C/L	P401072	
2260509	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.41		mg P/L	P400651	

Ref. Method and Comment:

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: P400647

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P400630

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P400630

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	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 350.1 Rev. 2.0
Batch ID: P401323

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P401173

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400936

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400747

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: P400651

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

Reference Method: SM 2320 B-2011
Batch ID: P400781

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 D-2011
Batch ID: P400859

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P400785

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P401072

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: P400630

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	100		P	85 - 115
Iron	112		P	85 - 115
Magnesium	101		P	85 - 115
Manganese	102		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P400630

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	113		P	85 - 115
Antimony	115		P	85 - 115
Arsenic	111		P	85 - 115
Beryllium	109		P	80 - 120
Cadmium	110		P	85 - 115
Chromium	108		P	85 - 115
Copper	110		P	85 - 115
Lead	109		P	85 - 115
Nickel	110		P	85 - 115
Selenium	109		P	85 - 115
Silver	114		P	85 - 115
Thallium	110		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401323

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P401173

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400936

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400747

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: P400651

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P400781

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P400785

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P401072

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P400630

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258571	Calcium	80.5		P	80 - 120
2258571	Iron	118	107	P/P	80 - 120
2258571	Magnesium	84.3		P	80 - 120
2258571	Manganese	106	94.6	P/P	80 - 120
2258571	Zinc	105	92.3	P/P	80 - 120
2259780	Calcium	101		P	80 - 120
2259780	Iron	114		P	80 - 120
2259780	Magnesium	106		P	80 - 120
2259780	Manganese	99.5		P	80 - 120
2259780	Zinc	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P400630

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258571	Aluminum	110	112	P/P	80 - 120
2258571	Antimony	114	117	P/P	80 - 120
2258571	Arsenic	109	111	P/P	80 - 120
2258571	Beryllium	110	111	P/P	80 - 120
2258571	Cadmium	107	109	P/P	80 - 120
2258571	Chromium	103	105	P/P	80 - 120
2258571	Copper	105	105	P/P	80 - 120
2258571	Lead	106	109	P/P	80 - 120
2258571	Nickel	104	106	P/P	80 - 120
2258571	Selenium	104	107	P/P	80 - 120
2258571	Silver	109	108	P/P	80 - 120
2258571	Thallium	110	113	P/P	80 - 120
2259780	Aluminum	104		P	80 - 120
2259780	Antimony	111		P	80 - 120
2259780	Arsenic	107		P	80 - 120
2259780	Beryllium	107		P	80 - 120
2259780	Cadmium	106		P	80 - 120
2259780	Chromium	102		P	80 - 120
2259780	Copper	101		P	80 - 120
2259780	Lead	106		P	80 - 120
2259780	Nickel	105		P	80 - 120
2259780	Selenium	104		P	80 - 120
2259780	Silver	108		P	80 - 120
2259780	Thallium	112		P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P401323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2260508	Ammonia-N	98.2	91.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P401173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2260496	Kjeldahl Nitrogen	117	132	F/F	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400936

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2260508	NO2NO3-N	91.2	90.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400747

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2260476	Total-P	107	109	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400651

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2260497	O-Phosphate-P	98.0	98.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P400785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2259724	Fluoride	97.2	98.4	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P401072

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2260602	Organic Carbon	99.0	97.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P400647

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2260507	Turbidity	0.858	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P400630

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258571	Calcium	11.0	Spike	P	0 - 20
2258571	Iron	9.76	Spike	P	0 - 20
2258571	Magnesium	9.43	Spike	P	0 - 20
2258571	Manganese	11.1	Spike	P	0 - 20
2258571	Zinc	12.1	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P400630

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258571	Aluminum	1.96	Spike	P	0 - 20
2258571	Antimony	2.26	Spike	P	0 - 20
2258571	Arsenic	1.60	Spike	P	0 - 20
2258571	Beryllium	0.278	Spike	P	0 - 20
2258571	Cadmium	1.87	Spike	P	0 - 20
2258571	Chromium	1.23	Spike	P	0 - 20
2258571	Copper	0.488	Spike	P	0 - 20
2258571	Lead	2.43	Spike	P	0 - 20
2258571	Nickel	1.73	Spike	P	0 - 20
2258571	Selenium	2.80	Spike	P	0 - 20
2258571	Silver	0.380	Spike	P	0 - 20
2258571	Thallium	2.73	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2260508	Ammonia-N	4.59	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P401173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2260496	Kjeldahl Nitrogen	8.50	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400936

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2260508	NO2NO3-N	0.473	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400747

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2260476	Total-P	2.16	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2260497	O-Phosphate-P	0.402	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P400781

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259724	Total Alkalinity	0.135	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011
Batch ID: P400785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259724	Fluoride	0.972	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P401072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2260602	Organic Carbon	1.01	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: A106488

Included Lab Sample IDs: 2260507

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A106490

Included Lab Sample IDs: 2260509

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	99.6	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A106546

Included Lab Sample IDs: 2260507

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

Reference Method: SM 4500 F-C-2011

Run ID: A106546

Included Lab Sample IDs: 2260507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106554

Included Lab Sample IDs: 2260508

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A106567

Included Lab Sample IDs: 2260513

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	95.3	98.7	P/P	90 - 110
Iron	99.0	104	P/P	90 - 110
Magnesium	98.0	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A106571

Included Lab Sample IDs: 2260513

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	103	P/P	90 - 110
Antimony	106	106	P/P	90 - 110
Chromium	95.9	97.3	P/P	90 - 110
Nickel	97.5	99.4	P/P	90 - 110
Selenium	98.1	99.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A106603

Included Lab Sample IDs: 2260513

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Manganese	104	109	P/P	95 - 105
Zinc	99.1	104	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106607

Included Lab Sample IDs: 2260508

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	99.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A106617

Included Lab Sample IDs: 2260513

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	99.7	98.1	P/P	90 - 110
Beryllium	99.8	101	P/P	90 - 110
Cadmium	105	105	P/P	90 - 110
Copper	93.9	92.6	P/P	90 - 110
Lead	101	100	P/P	90 - 110
Silver	103	103	P/P	90 - 110
Thallium	99.6	99.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A106660

Included Lab Sample IDs: 2260508

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.2	96.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A106716

Included Lab Sample IDs: 2260508

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106748

Included Lab Sample IDs: 2260508

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.1	98.0	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 SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					0.858	
EPA 200.7 Rev. 4.4	Calcium	100	80.5	101			11.0
	Iron	112	118	107	114		9.76
	Magnesium	101	84.3	106			9.43
	Manganese	102	106	94.6	99.5		11.1
	Zinc	103	105	92.3	101		12.1
EPA 200.8 Rev. 5.4	Aluminum	113	104	110	112		1.96
	Antimony	115	111	114	117		2.26
	Arsenic	111	107	109	111		1.60
	Beryllium	109	107	110	111		0.278
	Cadmium	110	106	107	109		1.87
	Chromium	108	102	103	105		1.23
	Copper	110	101	105	105		0.488
	Lead	109	106	106	109		2.43
	Nickel	110	105	104	106		1.73
	Selenium	109	104	104	107		2.80
	Silver	114	108	109	108		0.380
	Thallium	110	112	110	113		2.73
EPA 350.1 Rev. 2.0	Ammonia-N	99.6	98.2	91.2			4.59
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	117	132			8.50
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	98.5	91.2	90.6			0.473
EPA 365.1 Rev. 2.0	Total-P	108	107	109			2.16
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	98.0	98.6			0.402
SM 2320 B-2011	Total Alkalinity	103				0.135	
SM 4500 F-C-2011	Fluoride	100	97.2	98.4			0.972
SM 5310 B-2011	Organic Carbon	97.3	99.0	97.4			1.01

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2260507
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2260513
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2260513
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2260508
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2260508
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2260508
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2260508
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2260509
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2260507
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2260507
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2260507
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2260508

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	07/07/2021			07/07/2021 14:22	Sarah A Nixon	2260507
EPA 200.7 Rev. 4.4	07/07/2021	07/07/2021 14:10	Elliott D. Healy	07/12/2021 19:25	Betina Topolski	2260513
	07/07/2021	07/07/2021 14:10	Elliott D. Healy	07/14/2021 10:59	Betina Topolski	2260513
EPA 200.8 Rev. 5.4	07/07/2021	07/07/2021 14:10	Elliott D. Healy	07/12/2021 21:37	McKinley C Carter	2260513
	07/07/2021	07/07/2021 14:10	Elliott D. Healy	07/14/2021 16:05	Alexander Thompson	2260513
EPA 350.1 Rev. 2.0	07/07/2021			07/21/2021 13:47	Roberta Tatti	2260508
EPA 351.2 Rev. 2.0	07/07/2021	07/19/2021 15:09	Benjamin T. Nordmann	07/20/2021 16:58	Letuzia M De Oliveira	2260508
EPA 353.2 Rev. 2.0	07/07/2021			07/14/2021 08:47	Beverly Y. Sanders	2260508
EPA 365.1 Rev. 2.0	07/07/2021	07/09/2021 14:46	Simonne.V. Calhoun	07/12/2021 12:22	Shengyu Ding	2260508
EPA 365.1 Rev. 2.0 dissolved	07/07/2021			07/07/2021 16:15	Ping Hua	2260509
SM 2320 B-2011	07/07/2021			07/10/2021 03:48	Dale L. Simmons	2260507
SM 2540 D-2011	07/07/2021			07/12/2021 14:35	Yijie Li	2260507
SM 4500 F-C-2011	07/07/2021			07/10/2021 03:48	Dale L. Simmons	2260507
SM 5310 B-2011	07/07/2021			07/15/2021 08:15	Madeline Gruver	2260508