

Chemical Analysis Report

SO-DIST-2020-01-30-01

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

Event Description: **CALOOSA LT**
Request ID: **RQ-2020-01-20-27**
Customer: **SO-DIST**
Project ID: **BMAP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
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Certified by: Colin Wright, Program Administrator

Date Certified: 26-FEB-2020 10:09

A handwritten signature in black ink, appearing to read "Colin Wright", is shown on a light-colored 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: US 41, Marker # 38

Collection Date/Time: 01/29/2020 11:10

Field ID: G3SD0112

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152770	SM 5310 B-2011 dissolved	Organic Carbon	13		mg C/L	P378351	
2152778	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P378565	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.91		mg N/L	P378319	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P378268	
	EPA 365.1 Rev. 2.0	Total-P	0.084		mg P/L	P378183	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P378351	
2152786	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.055		mg P/L	P377998	
2152853	EPA 200.7 Rev. 4.4	Calcium	150		mg/L	P378219	
		Iron	100	I	ug/L	P378219	
		Magnesium	366		mg/L	P378219	
		Potassium	114		mg/L	P378219	
		Sodium	2.92E+03		mg/L	P378219	
		Zinc	15	U	ug/L	P378219	
	EPA 200.8 Rev. 5.4	Arsenic	1.95		ug/L	P378219	
		Cadmium	0.080	U	ug/L	P378219	
		Chromium	1.6	U	ug/L	P378219	
		Copper	1.6	U	ug/L	P378219	
		Lead	0.80	U	ug/L	P378219	
		Nickel	2.0	U	ug/L	P378219	
		Silver	0.040	U	ug/L	P378219	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Marker # 28

Collection Date/Time: 01/29/2020 11:25

Field ID: G3SD0113

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152771	SM 5310 B-2011 dissolved	Organic Carbon	15		mg C/L	P378353	
2152779	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P378565	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P378319	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.078		mg N/L	P378268	
	EPA 365.1 Rev. 2.0	Total-P	0.092		mg P/L	P378183	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P378472	
2152787	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.067		mg P/L	P377998	
2152854	EPA 200.7 Rev. 4.4	Calcium	124		mg/L	P378219	
		Iron	98	I	ug/L	P378219	
		Magnesium	252		mg/L	P378219	
		Potassium	79		mg/L	P378219	
		Sodium	1.99E+03		mg/L	P378219	
		Zinc	15	U	ug/L	P378219	
	EPA 200.8 Rev. 5.4	Arsenic	1.82		ug/L	P378219	
		Cadmium	0.080	U	ug/L	P378219	
		Chromium	1.6	U	ug/L	P378219	
		Copper	1.6	U	ug/L	P378219	
		Lead	0.80	U	ug/L	P378219	
		Nickel	2.0	U	ug/L	P378219	
		Silver	0.040	U	ug/L	P378219	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Marker # 22

Collection Date/Time: 01/29/2020 11:45

Field ID: G3SD0114

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152772	SM 5310 B-2011 dissolved	Organic Carbon	17		mg C/L	P378353	
2152780	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P378565	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P378319	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P378080	
	EPA 365.1 Rev. 2.0	Total-P	0.093		mg P/L	P378187	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P378472	
2152788	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.067		mg P/L	P377998	
2152855	EPA 200.7 Rev. 4.4	Calcium	100		mg/L	P378222	
		Iron	75	I	ug/L	P378222	
		Magnesium	183		mg/L	P378222	
		Potassium	57		mg/L	P378222	
		Sodium	1.40E+03		mg/L	P378222	
		Zinc	9.6	I	ug/L	P378222	
	EPA 200.8 Rev. 5.4	Arsenic	1.69		ug/L	P378222	
		Cadmium	0.020	U	ug/L	P378222	
		Chromium	0.40	U	ug/L	P378222	
		Copper	1.13		ug/L	P379203	
		Lead	0.66		ug/L	P378222	
		Nickel	0.50	U	ug/L	P378222	
		Silver	0.010	U	ug/L	P378222	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Old Swing Bridge

Collection Date/Time: 01/29/2020 11:55

Field ID: G3SD0115

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152773	SM 5310 B-2011 dissolved	Organic Carbon	16		mg C/L	P378353	
2152781	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P378565	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P378322	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P378080	
	EPA 365.1 Rev. 2.0	Total-P	0.098		mg P/L	P378187	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P378472	
2152789	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.081		mg P/L	P377998	
2152856	EPA 200.7 Rev. 4.4	Calcium	99.6		mg/L	P378222	
		Iron	150		ug/L	P378222	
		Magnesium	180		mg/L	P378222	
		Potassium	56.4		mg/L	P378222	
		Sodium	1.39E+03		mg/L	P378222	
		Zinc	5.0	U	ug/L	P378222	
	EPA 200.8 Rev. 5.4	Arsenic	1.73		ug/L	P378222	
		Cadmium	0.020	U	ug/L	P378222	
		Chromium	0.40	U	ug/L	P378222	
		Copper	1.21		ug/L	P378222	
		Lead	0.20	U	ug/L	P378222	
		Nickel	0.50	U	ug/L	P378222	
		Silver	0.010	U	ug/L	P378222	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Sample Location: USGSStation-PuntaBlanca

Collection Date/Time: 01/29/2020 09:25

Field ID: G3SD0108

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152754	SM 2320 B-2011	Total Alkalinity	128		mg CaCO3/L	P378548	
	SM 4500 F-C-2011	Fluoride	1.0		mg F/L	P378551	
2152758	SM 5310 B-2011 dissolved	Organic Carbon	5.8		mg C/L	P378351	
2152762	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P378565	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P378319	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P378268	
	EPA 365.1 Rev. 2.0	Total-P	0.039		mg P/L	P378183	
	SM 5310 B-2011	Organic Carbon	5.8		mg C/L	P378351	
2152766	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P377998	
2152849	EPA 200.7 Rev. 4.4	Iron	120	U	ug/L	P378219	
		Zinc	20	U	ug/L	P378219	
	EPA 200.8 Rev. 5.4	Arsenic	2.35		ug/L	P378219	
		Cadmium	0.080	U	ug/L	P378219	
		Chromium	1.6	U	ug/L	P378219	
		Copper	1.6	U	ug/L	P378219	
		Lead	2.0	U	ug/L	P378219	
		Nickel	2.0	U	ug/L	P378219	
		Silver	0.040	U	ug/L	P378219	

Sample Location: USGS Station-ShellPoint

Collection Date/Time: 01/29/2020 09:45

Field ID: G3SD0109

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152755	SM 2320 B-2011	Total Alkalinity	127		mg CaCO3/L	P378548	
	SM 4500 F-C-2011	Fluoride	0.96		mg F/L	P378551	
2152759	SM 5310 B-2011 dissolved	Organic Carbon	7.0		mg C/L	P378351	
2152763	EPA 350.1 Rev. 2.0	Ammonia-N	0.015	J	mg N/L	P378574	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P378319	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P378268	
	EPA 365.1 Rev. 2.0	Total-P	0.043		mg P/L	P378183	
	SM 5310 B-2011	Organic Carbon	6.9		mg C/L	P378351	
2152767	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.029		mg P/L	P377998	
2152850	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P378219	
		Zinc	15	U	ug/L	P378219	
	EPA 200.8 Rev. 5.4	Arsenic	2.29		ug/L	P378219	
		Cadmium	0.080	U	ug/L	P378219	
		Chromium	1.6	U	ug/L	P378219	
		Copper	1.6	U	ug/L	P378219	
		Lead	0.80	U	ug/L	P378219	
		Nickel	2.0	U	ug/L	P378219	
		Silver	0.040	U	ug/L	P378219	

Ref. Method and Comment:

EPA 350.1 Rev. 2.0: The sample appears to be heterogeneous with respect to ammonia analysis.

Sample Location: Marker # 76

Collection Date/Time: 01/29/2020 10:15

Field ID: G3SD0110

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152756	SM 2320 B-2011	Total Alkalinity	125		mg CaCO3/L	P378548	
	SM 4500 F-C-2011	Fluoride	0.80		mg F/L	P378551	
2152760	SM 5310 B-2011 dissolved	Organic Carbon	9.1		mg C/L	P378351	
2152764	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P378574	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P378319	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P378268	
	EPA 365.1 Rev. 2.0	Total-P	0.060		mg P/L	P378183	
	SM 5310 B-2011	Organic Carbon	9.2		mg C/L	P378351	
2152768	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.043		mg P/L	P377998	
2152851	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P378219	
		Zinc	15	U	ug/L	P378219	
	EPA 200.8 Rev. 5.4	Arsenic	2.31		ug/L	P378219	
		Cadmium	0.080	U	ug/L	P378219	
		Chromium	1.6	U	ug/L	P378219	
		Copper	1.6	U	ug/L	P378219	
		Lead	0.80	U	ug/L	P378219	
		Nickel	2.0	U	ug/L	P378219	
		Silver	0.040	U	ug/L	P378219	

Sample Location: Marker # 52

Collection Date/Time: 01/29/2020 10:45

Field ID: G3SD0111

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152757	SM 2320 B-2011	Total Alkalinity	130		mg CaCO3/L	P378548	
	SM 4500 F-C-2011	Fluoride	0.57		mg F/L	P378551	
2152761	SM 5310 B-2011 dissolved	Organic Carbon	12		mg C/L	P378351	
2152765	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P378565	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P378319	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P378268	
	EPA 365.1 Rev. 2.0	Total-P	0.074		mg P/L	P378183	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P378351	
2152769	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.052		mg P/L	P377998	
2152852	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P378219	
		Zinc	15	U	ug/L	P378219	
	EPA 200.8 Rev. 5.4	Arsenic	1.99		ug/L	P378219	
		Cadmium	0.080	U	ug/L	P378219	
		Chromium	1.6	U	ug/L	P378219	
		Copper	1.7	I	ug/L	P378219	
		Lead	0.80	U	ug/L	P378219	
		Nickel	2.0	U	ug/L	P378219	
		Silver	0.040	U	ug/L	P378219	

Sample Location: MidChannel@OrangeRiver

Collection Date/Time: 01/29/2020 12:15

Field ID: G3SD0116

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152774	SM 5310 B-2011 dissolved	Organic Carbon	15		mg C/L	P378353	
2152782	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P378565	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.96		mg N/L	P378322	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P378080	
	EPA 365.1 Rev. 2.0	Total-P	0.094		mg P/L	P378187	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P378472	
2152790	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.065		mg P/L	P377998	
2152857	EPA 200.7 Rev. 4.4	Calcium	102		mg/L	P378222	
		Iron	92	I	ug/L	P378222	
		Magnesium	185		mg/L	P378222	
		Potassium	58		mg/L	P378222	
		Sodium	1.41E+03		mg/L	P378222	
		Zinc	5.0	U	ug/L	P378222	
	EPA 200.8 Rev. 5.4	Arsenic	1.69		ug/L	P378222	
		Cadmium	0.020	U	ug/L	P378222	
		Chromium	0.40	U	ug/L	P378222	
		Copper	1.09		ug/L	P378222	
		Lead	0.20	U	ug/L	P378222	
		Nickel	0.50	U	ug/L	P378222	
		Silver	0.010	U	ug/L	P378222	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Upstream of Power Plant

Collection Date/Time: 01/29/2020 12:35

Field ID: G3SD0117

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152775	SM 5310 B-2011 dissolved	Organic Carbon	16		mg C/L	P378472	
2152783	EPA 350.1 Rev. 2.0	Ammonia-N	0.041		mg N/L	P378565	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P378322	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P378080	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P378187	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P378472	
2152791	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.067		mg P/L	P377998	
2152858	EPA 200.7 Rev. 4.4	Calcium	94.5		mg/L	P378222	
		Iron	150		ug/L	P378222	
		Magnesium	154		mg/L	P378222	
		Potassium	49		mg/L	P378222	
		Sodium	1.17E+03		mg/L	P378222	
		Zinc	11	I	ug/L	P378222	
	EPA 200.8 Rev. 5.4	Arsenic	1.68		ug/L	P378222	
		Cadmium	0.020	U	ug/L	P378222	
		Chromium	0.40	U	ug/L	P378222	
		Copper	1.21		ug/L	P378222	
		Lead	0.20	U	ug/L	P378222	
		Nickel	0.50	U	ug/L	P378222	
		Silver	0.010	U	ug/L	P378222	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Mid Channel off Oxbow

Collection Date/Time: 01/29/2020 12:50

Field ID: G3SD0118

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152776	SM 5310 B-2011 dissolved	Organic Carbon	16		mg C/L	P378472	
2152784	EPA 350.1 Rev. 2.0	Ammonia-N	0.046		mg N/L	P378570	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P378322	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P378080	
	EPA 365.1 Rev. 2.0	Total-P	0.093		mg P/L	P378187	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P378472	
2152792	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.066		mg P/L	P377999	
2152859	EPA 200.7 Rev. 4.4	Calcium	98.5		mg/L	P378222	
		Iron	66	I	ug/L	P378222	
		Magnesium	169		mg/L	P378222	
		Potassium	54		mg/L	P378222	
		Sodium	1.31E+03		mg/L	P378222	
		Zinc	5.0	U	ug/L	P378222	
	EPA 200.8 Rev. 5.4	Arsenic	1.65		ug/L	P378222	
		Cadmium	0.020	U	ug/L	P378222	
		Chromium	0.40	U	ug/L	P378222	
		Copper	1.18		ug/L	P378222	
		Lead	0.20	U	ug/L	P378222	
		Nickel	0.50	U	ug/L	P378222	
		Silver	0.010	U	ug/L	P378222	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Mid channel off point

Collection Date/Time: 01/29/2020 13:00

Field ID: G3SD0119

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152777	SM 5310 B-2011 dissolved	Organic Carbon	15		mg C/L	P378472	
2152785	EPA 350.1 Rev. 2.0	Ammonia-N	0.051		mg N/L	P378570	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P378322	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P378080	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P378187	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P378472	
2152793	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.067		mg P/L	P377999	
2152860	EPA 200.7 Rev. 4.4	Calcium	99.4		mg/L	P378222	
		Iron	67	I	ug/L	P378222	
		Magnesium	161		mg/L	P378222	
		Potassium	51		mg/L	P378222	
		Sodium	1.24E+03		mg/L	P378222	
		Zinc	5.0	U	ug/L	P378222	
	EPA 200.8 Rev. 5.4	Arsenic	1.65		ug/L	P378222	
		Cadmium	0.020	U	ug/L	P378222	
		Chromium	0.40	U	ug/L	P378222	
		Copper	1.03		ug/L	P378222	
		Lead	0.20	U	ug/L	P378222	
		Nickel	0.50	U	ug/L	P378222	
		Silver	0.010	U	ug/L	P378222	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P378219

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P378222

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P378219

Component	Result	Code	Units
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
Silver	0.010	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P378222

Component	Result	Code	Units
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
Silver	0.010	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P379203

Component	Result	Code	Units
Copper	0.40	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378565

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378565

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378570

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378574

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378319

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378322

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378080

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378268

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378183

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378187

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: P377998

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377999

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

Reference Method: SM 2320 B-2011
Batch ID: P378548

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

Reference Method: SM 4500 F-C-2011
Batch ID: P378551

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P378351

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

Reference Method: SM 5310 B-2011
Batch ID: P378472

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

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P378351

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

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P378353

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

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P378472

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: P378219

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	101		P	85 - 115
Magnesium	101		P	85 - 115
Potassium	101		P	85 - 115
Sodium	101		P	85 - 115
Zinc	94.8		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P378222

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	105		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	100		P	85 - 115
Sodium	99.7		P	85 - 115
Zinc	97.7		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P378219

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	107		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	105		P	85 - 115
Copper	102		P	85 - 115
Lead	101		P	85 - 115
Nickel	101		P	85 - 115
Silver	106		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P378222

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	102		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	105		P	85 - 115
Copper	100		P	85 - 115
Lead	99.7		P	85 - 115
Nickel	99.8		P	85 - 115
Silver	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P379203

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Copper	103		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378565

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378565

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378570

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378574

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: P378319

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378322

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378080

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378268

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378183

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378187

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377998

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377999

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

Reference Method: SM 2320 B-2011
Batch ID: P378548

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P378551

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.0		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P378351

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P378472

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P378351

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P378353

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	105		P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P378472

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P378219

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152854	Iron	104	100	P/P	70 - 130
2152854	Zinc	102	98.3	P/P	70 - 130

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P378222

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152859	Iron	101	98.1	P/P	70 - 130
2152859	Zinc	96.4	92.2	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P378219

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152854	Arsenic	115	112	P/P	70 - 130
2152854	Cadmium	105	103	P/P	70 - 130
2152854	Chromium	104	102	P/P	70 - 130
2152854	Copper	101	99.3	P/P	70 - 130
2152854	Lead	103	100	P/P	70 - 130
2152854	Nickel	99.9	97.6	P/P	70 - 130
2152854	Silver	98.3	98.5	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P378222

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152859	Arsenic	112	112	P/P	80 - 120
2152859	Cadmium	103	103	P/P	80 - 120
2152859	Chromium	107	108	P/P	80 - 120
2152859	Copper	94.8	95.8	P/P	80 - 120
2152859	Lead	105	105	P/P	80 - 120
2152859	Nickel	96.1	97.6	P/P	80 - 120
2152859	Silver	95.1	96.8	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P379203

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158300	Copper	102	99.3	P/P	80 - 120
2158951	Copper	101		P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378565

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152762	Ammonia-N	106	108	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378570

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2153110	Ammonia-N	107	107	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378574

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152763	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378319

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152602	Kjeldahl Nitrogen	96.5	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378322

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152781	Kjeldahl Nitrogen	99.6	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378080

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152780	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152597	NO2NO3-N	95.3	94.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378183

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152597	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378187

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152780	Total-P	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377998

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152766	O-Phosphate-P	94.2	95.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377999

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152792	O-Phosphate-P	95.9	94.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P378551

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151636	Fluoride	96.4	97.8	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P378351

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152625	Organic Carbon	102	102	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P378472

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152824	Organic Carbon	100	105	P/P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P378351

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152625	Organic Carbon	102	102	P/P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P378353

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152716	Organic Carbon	104	106	P/P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P378472

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152824	Organic Carbon	100	105	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P378219

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152854	Calcium	2.28	Spike	P	0 - 20
2152854	Iron	3.57	Spike	P	0 - 20
2152854	Magnesium	1.82	Spike	P	0 - 20
2152854	Potassium	1.38	Spike	P	0 - 20
2152854	Sodium	2.13	Spike	P	0 - 20
2152854	Zinc	3.85	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P378222

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152859	Calcium	6.77	Spike	P	0 - 20
2152859	Iron	2.74	Spike	P	0 - 20
2152859	Magnesium	3.00	Spike	P	0 - 20
2152859	Potassium	2.55	Spike	P	0 - 20
2152859	Sodium	2.87	Spike	P	0 - 20
2152859	Zinc	4.44	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P378219

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152854	Arsenic	2.48	Spike	P	0 - 20
2152854	Cadmium	1.01	Spike	P	0 - 20
2152854	Chromium	2.17	Spike	P	0 - 20
2152854	Copper	1.76	Spike	P	0 - 20
2152854	Lead	2.52	Spike	P	0 - 20
2152854	Nickel	2.31	Spike	P	0 - 20
2152854	Silver	0.194	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P378222

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152859	Arsenic	0.180	Spike	P	0 - 20
2152859	Cadmium	0.174	Spike	P	0 - 20
2152859	Chromium	1.05	Spike	P	0 - 20
2152859	Copper	0.999	Spike	P	0 - 20
2152859	Lead	0.285	Spike	P	0 - 20
2152859	Nickel	1.61	Spike	P	0 - 20
2152859	Silver	1.75	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P379203

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158300	Copper	2.23	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378565

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152762	Ammonia-N	1.27	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153110	Ammonia-N	0.299	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378574

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152763	Ammonia-N	0.0426	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378319

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152602	Kjeldahl Nitrogen	6.26	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378322

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152781	Kjeldahl Nitrogen	2.70	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378080

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152780	NO2NO3-N	0.290	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152597	NO2NO3-N	0.526	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378183

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152597	Total-P	0.661	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378187

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152780	Total-P	0.0438	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377998

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152766	O-Phosphate-P	1.40	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377999

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152792	O-Phosphate-P	1.18	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P378548

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152601	Total Alkalinity	0.00688	Sample	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P378551

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151636	Fluoride	0.940	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P378351

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152625	Organic Carbon	0.254	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P378472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152824	Organic Carbon	2.27	Spike	P	0 - 20

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P378351

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152625	Organic Carbon	0.254	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P378353

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152716	Organic Carbon	1.23	Spike	P	0 - 20

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P378472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152824	Organic Carbon	2.27	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97207

Included Lab Sample IDs: 2152766, 2152767, 2152768, 2152769, 2152786, 2152787, 2152788, 2152789, 2152790, 2152791, 2152792, 2152793

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	101	P/P	90 - 110
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	96.1	98.9	P/P	90 - 110
O-Phosphate-P	98.1	96.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97243

Included Lab Sample IDs: 2152780, 2152781, 2152782, 2152783, 2152784, 2152785

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97314

Included Lab Sample IDs: 2152762, 2152763, 2152764, 2152765, 2152778, 2152779

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A97337

Included Lab Sample IDs: 2152762, 2152763, 2152764, 2152765, 2152778

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	103	104	P/P	90 - 110

Reference Method: SM 5310 B-2011 dissolved

Run ID: A97337

Included Lab Sample IDs: 2152758, 2152759, 2152760, 2152761, 2152770

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	103	104	P/P	90 - 110
Organic Carbon	105	103	P/P	90 - 110

Reference Method: SM 5310 B-2011 dissolved

Run ID: A97338

Included Lab Sample IDs: 2152771, 2152772, 2152773, 2152774

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	107	108	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A97340

Included Lab Sample IDs: 2152849, 2152850, 2152851, 2152852, 2152853, 2152854, 2152855, 2152856, 2152857, 2152858, 2152859, 2152860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	98.3	P/P	90 - 110
Calcium	102	99.4	P/P	90 - 110
Calcium	98.3	102	P/P	90 - 110
Calcium	99.4	99.9	P/P	90 - 110
Calcium	99.9	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A97340

Included Lab Sample IDs: 2152849, 2152850, 2152851, 2152852, 2152853, 2152854, 2152855, 2152856, 2152857, 2152858, 2152859, 2152860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	100	101	P/P	90 - 110
Iron	101	102	P/P	90 - 110
Iron	102	99.2	P/P	90 - 110
Iron	103	100	P/P	90 - 110
Iron	99.2	103	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Magnesium	102	99.3	P/P	90 - 110
Magnesium	102	100	P/P	90 - 110
Magnesium	99.3	103	P/P	90 - 110
Magnesium	100	101	P/P	90 - 110
Potassium	100	103	P/P	90 - 110
Potassium	100	99.4	P/P	90 - 110
Potassium	101	101	P/P	90 - 110
Potassium	101	100	P/P	90 - 110
Potassium	99.4	101	P/P	90 - 110
Sodium	100	98.9	P/P	90 - 110
Sodium	100	101	P/P	90 - 110
Sodium	101	99.5	P/P	90 - 110
Sodium	98.9	100	P/P	90 - 110
Sodium	99.5	102	P/P	90 - 110
Zinc	101	99.9	P/P	90 - 110
Zinc	101	101	P/P	90 - 110
Zinc	101	101	P/P	90 - 110
Zinc	97.2	101	P/P	90 - 110
Zinc	99.9	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97365

Included Lab Sample IDs: 2152762, 2152763, 2152764, 2152765, 2152778, 2152779, 2152780, 2152781, 2152782, 2152783, 2152784, 2152785

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	101	P/P	90 - 110
Kjeldahl Nitrogen	97.2	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A97368

Included Lab Sample IDs: 2152779, 2152780, 2152781, 2152782, 2152783, 2152784, 2152785

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	99.8	P/P	90 - 110
Organic Carbon	99.8	102	P/P	90 - 110

Reference Method: SM 5310 B-2011 dissolved

Run ID: A97368

Included Lab Sample IDs: 2152775, 2152776, 2152777

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	99.8	P/P	90 - 110
Organic Carbon	99.8	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97378

Included Lab Sample IDs: 2152762, 2152763, 2152764, 2152765, 2152778, 2152779, 2152780, 2152781, 2152782, 2152783, 2152784, 2152785

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.5	97.2	P/P	90 - 110
Total-P	97.0	97.5	P/P	90 - 110
Total-P	97.2	97.0	P/P	90 - 110
Total-P	97.5	96.5	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A97403

Included Lab Sample IDs: 2152754, 2152755, 2152756, 2152757

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.9	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A97403

Included Lab Sample IDs: 2152754, 2152755, 2152756, 2152757

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97409

Included Lab Sample IDs: 2152762, 2152763, 2152764, 2152765, 2152778, 2152779, 2152780, 2152781, 2152782, 2152783, 2152784, 2152785

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97560

Included Lab Sample IDs: 2152849, 2152850, 2152851, 2152852, 2152853, 2152854, 2152855, 2152856, 2152857, 2152858, 2152859, 2152860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	102	103	P/P	90 - 110
Arsenic	103	101	P/P	90 - 110
Arsenic	103	103	P/P	90 - 110
Cadmium	101	98.9	P/P	90 - 110
Cadmium	98.9	100	P/P	90 - 110
Cadmium	99.0	98.6	P/P	90 - 110
Chromium	102	103	P/P	90 - 110
Chromium	102	106	P/P	90 - 110
Chromium	106	103	P/P	90 - 110
Copper	98.8	99.2	P/P	90 - 110
Copper	99.0	98.4	P/P	90 - 110
Copper	99.2	96.7	P/P	90 - 110
Lead	97.4	98.3	P/P	90 - 110
Lead	98.2	97.4	P/P	90 - 110
Lead	98.6	98.2	P/P	90 - 110
Lead	99.7	98.6	P/P	90 - 110
Nickel	100	96.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97560

Included Lab Sample IDs: 2152849, 2152850, 2152851, 2152852, 2152853, 2152854, 2152855, 2152856, 2152857, 2152858, 2152859, 2152860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	98.7	99.6	P/P	90 - 110
Nickel	99.1	100	P/P	90 - 110
Silver	103	103	P/P	90 - 110
Silver	103	102	P/P	90 - 110
Silver	104	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97772

Included Lab Sample IDs: 2152855

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	95.5	94.8	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 200.7 Rev. 4.4	Calcium	101					2.28
	Calcium	101					6.77
	Iron	101	104	100			3.57
	Iron	105	101	98.1			2.74
	Magnesium	101					1.82
	Magnesium	102					3.00
	Potassium	101					1.38
	Potassium	100					2.55
	Sodium	101					2.13
	Sodium	99.7					2.87
	Zinc	94.8	102	98.3			3.85
	Zinc	97.7	96.4	92.2			4.44
EPA 200.8 Rev. 5.4	Arsenic	107	115	112			2.48
	Arsenic	102	112	112			0.180
	Cadmium	104	105	103			1.01
	Cadmium	103	103	103			0.174
	Chromium	105	104	102			2.17
	Chromium	105	107	108			1.05
	Copper	102	101	99.3			1.76
	Copper	100	94.8	95.8			0.999
	Copper	103	102	99.3	101		2.23
	Lead	101	103	100			2.52
	Lead	99.7	105	105			0.285
	Nickel	101	99.9	97.6			2.31
	Nickel	99.8	96.1	97.6			1.61
	Silver	106	98.3	98.5			0.194
EPA 350.1 Rev. 2.0	Silver	103	95.1	96.8			1.75
	Ammonia-N	100	106	108			1.27
	Ammonia-N	98.3	107	107			0.299
	Ammonia-N	102	101	101			0.0426
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	96.5	105			6.26
	Kjeldahl Nitrogen	100	99.6	104			2.70
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	101	100			0.290
	NO ₂ NO ₃ -N	101	95.3	94.8			0.526
EPA 365.1 Rev. 2.0	Total-P	103	102	103			0.661
	Total-P	102	103	103			0.0438
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	94.2	95.9			1.40
	O-Phosphate-P	99.1	95.9	94.0			1.18
SM 2320 B-2011	Total Alkalinity	102				0.0068	
SM 4500 F-C-2011	Fluoride	99.0	96.4	97.8			0.940
SM 5310 B-2011	Organic Carbon	103	102	102			0.254
	Organic Carbon	98.8	100	105			2.27
SM 5310 B-2011 dissolved	Organic Carbon	103	102	102			0.254
	Organic Carbon	105	104	106			1.23
	Organic Carbon	98.8	100	105			2.27

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2152849, 2152850, 2152851, 2152852, 2152853, 2152854, 2152855, 2152856, 2152857, 2152858, 2152859, 2152860

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2152849, 2152850, 2152851, 2152852, 2152853, 2152854, 2152855, 2152856, 2152857, 2152858, 2152859, 2152860
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2152762, 2152763, 2152764, 2152765, 2152778, 2152779, 2152780, 2152781, 2152782, 2152783, 2152784, 2152785
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2152762, 2152763, 2152764, 2152765, 2152778, 2152779, 2152780, 2152781, 2152782, 2152783, 2152784, 2152785
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2152762, 2152763, 2152764, 2152765, 2152778, 2152779, 2152780, 2152781, 2152782, 2152783, 2152784, 2152785
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2152762, 2152763, 2152764, 2152765, 2152778, 2152779, 2152780, 2152781, 2152782, 2152783, 2152784, 2152785
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2152766, 2152767, 2152768, 2152769, 2152786, 2152787, 2152788, 2152789, 2152790, 2152791, 2152792, 2152793
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2152754, 2152755, 2152756, 2152757
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2152754, 2152755, 2152756, 2152757
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2152762, 2152763, 2152764, 2152765, 2152778, 2152779, 2152780, 2152781, 2152782, 2152783, 2152784, 2152785
SM 5310 B-2011 dissolved	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	2152758, 2152759, 2152760, 2152761, 2152770, 2152771, 2152772, 2152773, 2152774, 2152775, 2152776, 2152777

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.7 Rev. 4.4	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 14:35	Betina Topolski	2152855
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 14:43	Betina Topolski	2152855
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 14:51	Betina Topolski	2152856
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 14:59	Betina Topolski	2152856
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 15:08	Betina Topolski	2152857
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 15:14	Betina Topolski	2152857
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 15:19	Betina Topolski	2152858
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 15:27	Betina Topolski	2152858
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 15:32	Betina Topolski	2152856
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 16:04	Betina Topolski	2152859
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 16:37	Betina Topolski	2152859
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 17:46	Betina Topolski	2152860
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 17:54	Betina Topolski	2152860
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 19:31	Betina Topolski	2152849
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 19:39	Betina Topolski	2152850
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 19:47	Betina Topolski	2152851
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 19:55	Betina Topolski	2152852
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 20:03	Betina Topolski	2152853
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 20:12	Betina Topolski	2152853
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 20:56	Betina Topolski	2152854
EPA 200.8 Rev. 5.4	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/05/2020 21:29	Betina Topolski	2152854
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/14/2020 20:22	Justin Cutchin	2152859
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/14/2020 20:50	Justin Cutchin	2152855
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/14/2020 20:59	Justin Cutchin	2152856
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/14/2020 21:27	Justin Cutchin	2152857
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/14/2020 21:37	Justin Cutchin	2152858
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/14/2020 21:46	Justin Cutchin	2152860
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/15/2020 00:07	Justin Cutchin	2152849
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/15/2020 01:41	Justin Cutchin	2152849
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/15/2020 01:50	Justin Cutchin	2152850
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/15/2020 02:00	Justin Cutchin	2152851
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/15/2020 02:09	Justin Cutchin	2152852
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/15/2020 02:19	Justin Cutchin	2152853
	01/30/2020	02/04/2020 14:30	Elliott D. Healy	02/15/2020 02:28	Justin Cutchin	2152854
	01/30/2020	02/19/2020 16:50	Elliott D. Healy	02/24/2020 16:17	Justin Cutchin	2152855
EPA 350.1 Rev. 2.0	01/30/2020			02/07/2020 11:11	Ping Hua	2152762
	01/30/2020			02/07/2020 11:25	Ping Hua	2152765
	01/30/2020			02/07/2020 11:26	Ping Hua	2152778
	01/30/2020			02/07/2020 11:28	Ping Hua	2152779
	01/30/2020			02/07/2020 11:29	Ping Hua	2152780

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 350.1 Rev. 2.0	01/30/2020			02/07/2020 11:31	Ping Hua	2152781
	01/30/2020			02/07/2020 11:32	Ping Hua	2152782
	01/30/2020			02/07/2020 11:34	Ping Hua	2152783
	01/30/2020			02/07/2020 13:46	Ping Hua	2152784
	01/30/2020			02/07/2020 13:48	Ping Hua	2152785
	01/30/2020			02/07/2020 14:19	Ping Hua	2152763
	01/30/2020			02/07/2020 14:24	Ping Hua	2152764
	01/30/2020			02/06/2020 12:23	Jhamieka S. Greenwood	2152762
EPA 351.2 Rev. 2.0	01/30/2020	02/05/2020 14:50	Jhamieka S. Greenwood	02/06/2020 12:25	Jhamieka S. Greenwood	2152763
	01/30/2020	02/05/2020 14:50	Jhamieka S. Greenwood	02/06/2020 12:26	Jhamieka S. Greenwood	2152764
	01/30/2020	02/05/2020 14:50	Jhamieka S. Greenwood	02/06/2020 12:28	Jhamieka S. Greenwood	2152765
	01/30/2020	02/05/2020 14:50	Jhamieka S. Greenwood	02/06/2020 12:29	Jhamieka S. Greenwood	2152778
	01/30/2020	02/05/2020 14:50	Jhamieka S. Greenwood	02/06/2020 12:31	Jhamieka S. Greenwood	2152779
	01/30/2020	02/05/2020 14:50	Jhamieka S. Greenwood	02/06/2020 12:33	Jhamieka S. Greenwood	2152780
	01/30/2020	02/05/2020 14:50	Jhamieka S. Greenwood	02/06/2020 13:37	Jhamieka S. Greenwood	2152781
	01/30/2020	02/05/2020 14:50	Jhamieka S. Greenwood	02/06/2020 13:41	Jhamieka S. Greenwood	2152782
	01/30/2020	02/05/2020 14:50	Jhamieka S. Greenwood	02/06/2020 13:43	Jhamieka S. Greenwood	2152783
	01/30/2020	02/05/2020 14:50	Jhamieka S. Greenwood	02/06/2020 13:44	Jhamieka S. Greenwood	2152784
	01/30/2020	02/05/2020 14:50	Jhamieka S. Greenwood	02/06/2020 13:46	Jhamieka S. Greenwood	2152785
	01/30/2020			01/31/2020 10:49	Beverly Y. Sanders	2152780
EPA 353.2 Rev. 2.0	01/30/2020			01/31/2020 10:55	Beverly Y. Sanders	2152781
	01/30/2020			01/31/2020 10:57	Beverly Y. Sanders	2152782
	01/30/2020			01/31/2020 10:58	Beverly Y. Sanders	2152783
	01/30/2020			01/31/2020 10:59	Beverly Y. Sanders	2152784
	01/30/2020			01/31/2020 11:00	Beverly Y. Sanders	2152785
	01/30/2020			02/05/2020 08:26	Beverly Y. Sanders	2152762
	01/30/2020			02/05/2020 08:27	Beverly Y. Sanders	2152763
	01/30/2020			02/05/2020 08:28	Beverly Y. Sanders	2152764
	01/30/2020			02/05/2020 08:29	Beverly Y. Sanders	2152765
	01/30/2020			02/05/2020 08:31	Beverly Y. Sanders	2152778
	01/30/2020			02/05/2020 08:32	Beverly Y. Sanders	2152779
	01/30/2020	02/03/2020 15:03	Lipi Saha	02/06/2020 13:50	Benjamin T. Nordmann	2152762
EPA 365.1 Rev. 2.0	01/30/2020	02/03/2020 15:03	Lipi Saha	02/06/2020 13:51	Benjamin T. Nordmann	2152763
	01/30/2020	02/03/2020 15:03	Lipi Saha	02/06/2020 13:52	Benjamin T. Nordmann	2152764
	01/30/2020	02/03/2020 15:03	Lipi Saha	02/06/2020 14:00	Benjamin T. Nordmann	2152765
	01/30/2020	02/03/2020 15:03	Lipi Saha	02/06/2020 14:01	Benjamin T. Nordmann	2152778
	01/30/2020	02/03/2020 15:03	Lipi Saha	02/06/2020 14:02	Benjamin T. Nordmann	2152779
	01/30/2020	02/03/2020 15:03	Lipi Saha	02/06/2020 14:21	Benjamin T. Nordmann	2152780
	01/30/2020	02/03/2020 15:03	Lipi Saha	02/06/2020 14:22	Benjamin T. Nordmann	2152781
	01/30/2020	02/03/2020 15:03	Lipi Saha	02/06/2020 14:23	Benjamin T. Nordmann	2152782

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0	01/30/2020	02/03/2020 15:03	Lipi Saha	02/06/2020 14:24	Benjamin T. Nordmann	2152783
	01/30/2020	02/03/2020 15:03	Lipi Saha	02/06/2020 14:25	Benjamin T. Nordmann	2152784
	01/30/2020	02/03/2020 15:03	Lipi Saha	02/06/2020 14:33	Benjamin T. Nordmann	2152785
EPA 365.1 Rev. 2.0 dissolved	01/30/2020			01/30/2020 16:11	Carlos Miranda	2152766
	01/30/2020			01/30/2020 16:20	Carlos Miranda	2152792
	01/30/2020			01/30/2020 16:56	Carlos Miranda	2152767
	01/30/2020			01/30/2020 16:57	Carlos Miranda	2152768
	01/30/2020			01/30/2020 16:58	Carlos Miranda	2152769
	01/30/2020			01/30/2020 16:59	Carlos Miranda	2152786
	01/30/2020			01/30/2020 17:00	Carlos Miranda	2152787, 2152788
	01/30/2020			01/30/2020 17:01	Carlos Miranda	2152789
	01/30/2020			01/30/2020 17:02	Carlos Miranda	2152790
	01/30/2020			01/30/2020 17:03	Carlos Miranda	2152791
	01/30/2020			01/30/2020 17:08	Carlos Miranda	2152793
SM 2320 B-2011	01/30/2020			02/07/2020 06:22	Dale L. Simmons	2152754
	01/30/2020			02/07/2020 06:35	Dale L. Simmons	2152755
	01/30/2020			02/07/2020 06:47	Dale L. Simmons	2152756
	01/30/2020			02/07/2020 07:00	Dale L. Simmons	2152757
SM 4500 F-C-2011	01/30/2020			02/07/2020 03:46	Dale L. Simmons	2152754
	01/30/2020			02/07/2020 03:50	Dale L. Simmons	2152755
	01/30/2020			02/07/2020 03:54	Dale L. Simmons	2152756
	01/30/2020			02/07/2020 03:58	Dale L. Simmons	2152757
SM 5310 B-2011	01/30/2020			02/04/2020 10:03	Madeline Funaro	2152762
	01/30/2020			02/04/2020 10:16	Madeline Funaro	2152763
	01/30/2020			02/04/2020 10:28	Madeline Funaro	2152764
	01/30/2020			02/04/2020 10:54	Madeline Funaro	2152765
	01/30/2020			02/04/2020 11:19	Madeline Funaro	2152778
	01/30/2020			02/05/2020 16:32	Madeline Funaro	2152782
	01/30/2020			02/05/2020 18:13	Madeline Funaro	2152779
	01/30/2020			02/05/2020 18:28	Madeline Funaro	2152780
	01/30/2020			02/05/2020 18:42	Madeline Funaro	2152781
	01/30/2020			02/05/2020 18:57	Madeline Funaro	2152783
	01/30/2020			02/05/2020 19:11	Madeline Funaro	2152784
SM 5310 B-2011 dissolved	01/30/2020			02/05/2020 19:24	Madeline Funaro	2152785
	01/30/2020			02/04/2020 04:39	Madeline Funaro	2152771
	01/30/2020			02/04/2020 04:56	Madeline Funaro	2152772
	01/30/2020			02/04/2020 05:14	Madeline Funaro	2152773
	01/30/2020			02/04/2020 05:32	Madeline Funaro	2152774
	01/30/2020			02/04/2020 08:28	Madeline Funaro	2152758
	01/30/2020			02/04/2020 08:41	Madeline Funaro	2152759

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011 dissolved	01/30/2020			02/04/2020 09:05	Madeline Funaro	2152760
	01/30/2020			02/04/2020 09:51	Madeline Funaro	2152761
	01/30/2020			02/04/2020 11:07	Madeline Funaro	2152770
	01/30/2020			02/05/2020 16:59	Madeline Funaro	2152775
	01/30/2020			02/05/2020 17:13	Madeline Funaro	2152776
	01/30/2020			02/05/2020 18:01	Madeline Funaro	2152777