

Chemical Analysis Report

SO-DIST-2019-10-25-01

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-2019-10-07-10**
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: 20-NOV-2019 14:49

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: USGSStation-Punta Blanca

Collection Date/Time: 10/24/2019 09:50

Field ID: FB_10242019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131697	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P373311	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P373314	
2131698	SM 5310 B-00 dissolved	Organic Carbon	0.50	U	mg C/L	P373472	
2131699	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P373540	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P373499	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P373200	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P373349	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P373472	
2131700	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P373227	
2131743	EPA 200.7 Rev. 4.4	Iron	30	U	ug/L	P373359	
		Zinc	5.0	U	ug/L	P373359	
	EPA 200.8 Rev. 5.4	Arsenic	0.050	U	ug/L	P373359	
		Cadmium	0.020	U	ug/L	P373359	
		Chromium	0.40	U	ug/L	P373359	
		Copper	0.40	U	ug/L	P373359	
		Lead	0.20	U	ug/L	P373359	
		Nickel	0.50	U	ug/L	P373359	
		Silver	0.010	U	ug/L	P373359	

Sample Location: USGSStation-PuntaBlanca

Collection Date/Time: 10/24/2019 09:55

Field ID: G3SD0108

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131657	SM 2320 B-97	Total Alkalinity	127		mg CaCO3/L	P373394	
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P373395	
2131661	SM 5310 B-00 dissolved	Organic Carbon	5.9		mg C/L	P373405	
2131665	EPA 350.1 Rev. 2.0	Ammonia-N	0.038		mg N/L	P373457	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P373497	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P373326	
	EPA 365.1 Rev. 2.0	Total-P	0.069		mg P/L	P373350	
	SM 5310 B-00	Organic Carbon	5.8		mg C/L	P373405	
2131669	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.042		mg P/L	P373226	
2131731	EPA 200.7 Rev. 4.4	Iron	120	U	ug/L	P373414	
		Zinc	20	U	ug/L	P373414	
	EPA 200.8 Rev. 5.4	Arsenic	2.97		ug/L	P373414	
		Cadmium	0.080	U	ug/L	P373414	
		Chromium	1.6	U	ug/L	P373414	
		Copper	1.6	U	ug/L	P373414	
		Lead	2.0	U	ug/L	P373414	
		Nickel	2.0	U	ug/L	P373414	
		Silver	0.040	U	ug/L	P373414	

Sample Location: USGS Station-ShellPoint

Collection Date/Time: 10/24/2019 10:25

Field ID: G3SD0109

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131658	SM 2320 B-97	Total Alkalinity	123		mg CaCO3/L	P373394	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P373395	
2131662	SM 5310 B-00 dissolved	Organic Carbon	4.1		mg C/L	P373405	
2131666	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P373457	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P373497	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P373326	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P373350	
	SM 5310 B-00	Organic Carbon	4.4		mg C/L	P373405	
2131670	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P373226	
2131732	EPA 200.7 Rev. 4.4	Iron	120	U	ug/L	P373414	
		Zinc	20	U	ug/L	P373414	
	EPA 200.8 Rev. 5.4	Arsenic	2.81		ug/L	P373414	
		Cadmium	0.080	U	ug/L	P373414	
		Chromium	1.6	U	ug/L	P373414	
		Copper	1.6	U	ug/L	P373414	
		Lead	2.0	U	ug/L	P373414	
		Nickel	2.0	U	ug/L	P373414	
		Silver	0.040	U	ug/L	P373414	

Sample Location: Marker # 76

Collection Date/Time: 10/24/2019 10:50

Field ID: G3SD0110

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131659	SM 2320 B-97	Total Alkalinity	131		mg CaCO3/L	P373394	
	SM 4500 F-C-97	Fluoride	0.81		mg F/L	P373395	
2131663	SM 5310 B-00 dissolved	Organic Carbon	8.7		mg C/L	P373405	
2131667	EPA 350.1 Rev. 2.0	Ammonia-N	0.046		mg N/L	P373457	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P373497	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.056		mg N/L	P373326	
	EPA 365.1 Rev. 2.0	Total-P	0.090		mg P/L	P373350	
	SM 5310 B-00	Organic Carbon	9.0		mg C/L	P373405	
2131671	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.070		mg P/L	P373226	
2131733	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P373414	
		Zinc	15	U	ug/L	P373414	
	EPA 200.8 Rev. 5.4	Arsenic	2.84		ug/L	P373414	
		Cadmium	0.080	U	ug/L	P373414	
		Chromium	1.6	U	ug/L	P373414	
		Copper	1.6	U	ug/L	P373414	
		Lead	2.0	U	ug/L	P373414	
		Nickel	2.0	U	ug/L	P373414	
		Silver	0.040	U	ug/L	P373414	

Sample Location: Marker # 52

Collection Date/Time: 10/24/2019 11:25

Field ID: G3SD0111

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131660	SM 2320 B-97	Total Alkalinity	141		mg CaCO3/L	P373394	
	SM 4500 F-C-97	Fluoride	0.58		mg F/L	P373395	
2131664	SM 5310 B-00 dissolved	Organic Carbon	12		mg C/L	P373405	
2131668	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P373457	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P373497	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P373326	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P373350	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P373405	
2131672	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.071		mg P/L	P373226	
2131734	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P373414	
		Zinc	15	U	ug/L	P373414	
	EPA 200.8 Rev. 5.4	Arsenic	2.40		ug/L	P373414	
		Cadmium	0.080	U	ug/L	P373414	
		Chromium	1.6	U	ug/L	P373414	
		Copper	1.6	I	ug/L	P373414	
		Lead	0.80	U	ug/L	P373414	
		Nickel	2.0	U	ug/L	P373414	
		Silver	0.040	U	ug/L	P373414	

Sample Location: US 41, Marker # 38

Collection Date/Time: 10/24/2019 11:50

Field ID: G3SD0112

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131673	SM 5310 B-00 dissolved	Organic Carbon	13		mg C/L	P373405	
2131681	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P373542	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P373497	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P373326	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P373350	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P373405	
2131689	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.089		mg P/L	P373226	
2131735	EPA 200.7 Rev. 4.4	Calcium	176		mg/L	P373414	
		Iron	90	U	ug/L	P373414	
		Magnesium	389		mg/L	P373414	
		Potassium	125		mg/L	P373414	
		Sodium	3.26E+03		mg/L	P373414	
		Zinc	15	U	ug/L	P373414	
	EPA 200.8 Rev. 5.4	Arsenic	2.61		ug/L	P373414	
		Cadmium	0.080	U	ug/L	P373414	
		Chromium	1.6	U	ug/L	P373414	
		Copper	1.6	U	ug/L	P373414	
		Lead	0.80	U	ug/L	P373414	
		Nickel	2.0	U	ug/L	P373414	
		Silver	0.040	U	ug/L	P373414	

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: 10/24/2019 12:00

Field ID: G3SD0113

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131674	SM 5310 B-00 dissolved	Organic Carbon	16		mg C/L	P373472	
2131682	EPA 350.1 Rev. 2.0	Ammonia-N	0.057		mg N/L	P373542	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P373497	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.26		mg N/L	P373326	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P373350	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P373472	
2131690	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P373226	
2131736	EPA 200.7 Rev. 4.4	Calcium	139		mg/L	P373414	
		Iron	90	U	ug/L	P373414	
		Magnesium	256		mg/L	P373414	
		Potassium	85		mg/L	P373414	
		Sodium	2.17E+03		mg/L	P373414	
		Zinc	15	U	ug/L	P373414	
	EPA 200.8 Rev. 5.4	Arsenic	2.32		ug/L	P373414	
		Cadmium	0.080	U	ug/L	P373414	
		Chromium	1.6	U	ug/L	P373414	
		Copper	1.6	U	ug/L	P373414	
		Lead	0.80	U	ug/L	P373414	
		Nickel	2.0	U	ug/L	P373414	
		Silver	0.040	U	ug/L	P373414	

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: 10/24/2019 12:10

Field ID: G3SD0114

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131675	SM 5310 B-00 dissolved	Organic Carbon	16		mg C/L	P373472	
2131683	EPA 350.1 Rev. 2.0	Ammonia-N	0.070		mg N/L	P373542	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P373497	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.29		mg N/L	P373326	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P373350	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P373472	
2131691	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P373226	
2131737	EPA 200.7 Rev. 4.4	Calcium	130		mg/L	P373414	
		Iron	110	I	ug/L	P373414	
		Magnesium	216		mg/L	P373414	
		Potassium	70		mg/L	P373414	
		Sodium	1.78E+03		mg/L	P373414	
		Zinc	15	U	ug/L	P373414	
	EPA 200.8 Rev. 5.4	Arsenic	2.38		ug/L	P373414	
		Cadmium	0.080	U	ug/L	P373414	
		Chromium	1.6	U	ug/L	P373414	
		Copper	1.6	U	ug/L	P373414	
		Lead	0.80	U	ug/L	P373414	
		Nickel	2.0	U	ug/L	P373414	
		Silver	0.040	U	ug/L	P373414	

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: 10/24/2019 12:25

Field ID: G3SD0115

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131676	SM 5310 B-00 dissolved	Organic Carbon	17		mg C/L	P373472	
2131684	EPA 350.1 Rev. 2.0	Ammonia-N	0.066		mg N/L	P373542	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P373498	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P373326	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P373351	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P373472	
2131692	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P373226	
2131738	EPA 200.7 Rev. 4.4	Calcium	118		mg/L	P373359	
		Iron	100	I	ug/L	P373359	
		Magnesium	200		mg/L	P373359	
		Potassium	61		mg/L	P373359	
		Sodium	1.56E+03		mg/L	P373359	
		Zinc	5.0	U	ug/L	P373359	
	EPA 200.8 Rev. 5.4	Arsenic	2.00		ug/L	P373359	
		Cadmium	0.020	U	ug/L	P373359	
		Chromium	0.46	I	ug/L	P373359	
		Copper	1.30		ug/L	P373359	
		Lead	1.0	U	ug/L	P373359	
		Nickel	0.63	I	ug/L	P373359	
		Silver	0.010	U	ug/L	P373359	

Sample Location: MidChannel@OrangeRiver

Collection Date/Time: 10/24/2019 12:35

Field ID: G3SD0116

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131677	SM 5310 B-00 dissolved	Organic Carbon	18		mg C/L	P373472	
2131685	EPA 350.1 Rev. 2.0	Ammonia-N	0.052		mg N/L	P373542	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P373498	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.39		mg N/L	P373327	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P373351	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P373472	
2131693	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P373226	
2131739	EPA 200.7 Rev. 4.4	Calcium	98.5		mg/L	P373359	
		Iron	140		ug/L	P373359	
		Magnesium	122		mg/L	P373359	
		Potassium	39		mg/L	P373359	
		Sodium	928		mg/L	P373359	
		Zinc	5.0	U	ug/L	P373359	
	EPA 200.8 Rev. 5.4	Arsenic	2.04		ug/L	P373359	
		Cadmium	0.020	U	ug/L	P373359	
		Chromium	0.40	U	ug/L	P373359	
		Copper	1.33		ug/L	P373359	
		Lead	1.0	U	ug/L	P373359	
		Nickel	0.69	I	ug/L	P373359	
		Silver	0.010	U	ug/L	P373359	

Sample Location: Upstream of Power Plant

Collection Date/Time: 10/24/2019 12:45

Field ID: G3SD0117

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131678	SM 5310 B-00 dissolved	Organic Carbon	19		mg C/L	P373472	
2131686	EPA 350.1 Rev. 2.0	Ammonia-N	0.053		mg N/L	P373542	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.94		mg N/L	P373498	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.41		mg N/L	P373327	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P373351	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P373472	
2131694	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P373226	
2131740	EPA 200.7 Rev. 4.4	Calcium	97.8		mg/L	P373359	
		Iron	160		ug/L	P373359	
		Magnesium	113		mg/L	P373359	
		Potassium	36		mg/L	P373359	
		Sodium	844		mg/L	P373359	
		Zinc	5.0	U	ug/L	P373359	
	EPA 200.8 Rev. 5.4	Arsenic	2.07		ug/L	P373359	
		Cadmium	0.020	U	ug/L	P373359	
		Chromium	0.50	I	ug/L	P373359	
		Copper	1.25		ug/L	P373359	
		Lead	1.0	U	ug/L	P373359	
		Nickel	0.62	I	ug/L	P373359	
		Silver	0.010	U	ug/L	P373359	

Sample Location: Mid Channel off Oxbow

Collection Date/Time: 10/24/2019 13:00

Field ID: G3SD0118

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131679	SM 5310 B-00 dissolved	Organic Carbon	20		mg C/L	P373472	
2131687	EPA 350.1 Rev. 2.0	Ammonia-N	0.064		mg N/L	P373542	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P373498	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.42		mg N/L	P373327	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P373351	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P373472	
2131695	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P373228	
2131741	EPA 200.7 Rev. 4.4	Calcium	93.7		mg/L	P373359	
		Iron	160		ug/L	P373359	
		Magnesium	112		mg/L	P373359	
		Potassium	36		mg/L	P373359	
		Sodium	842		mg/L	P373359	
		Zinc	5.0	U	ug/L	P373359	
	EPA 200.8 Rev. 5.4	Arsenic	2.06		ug/L	P373359	
		Cadmium	0.020	U	ug/L	P373359	
		Chromium	0.40	U	ug/L	P373359	
		Copper	1.10		ug/L	P373359	
		Lead	1.0	U	ug/L	P373359	
		Nickel	0.57	I	ug/L	P373359	
		Silver	0.010	U	ug/L	P373359	

Sample Location: Mid channel off point

Collection Date/Time: 10/24/2019 13:15

Field ID: G3SD0119

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131680	SM 5310 B-00 dissolved	Organic Carbon	20		mg C/L	P373472	
2131688	EPA 350.1 Rev. 2.0	Ammonia-N	0.072		mg N/L	P373542	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P373498	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.41		mg N/L	P373327	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P373351	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P373472	
2131696	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P373228	
2131742	EPA 200.7 Rev. 4.4	Calcium	95.6		mg/L	P373359	
		Iron	170		ug/L	P373359	
		Magnesium	115		mg/L	P373359	
		Potassium	37		mg/L	P373359	
		Sodium	886		mg/L	P373359	
		Zinc	5.0	U	ug/L	P373359	
	EPA 200.8 Rev. 5.4	Arsenic	2.09		ug/L	P373359	
		Cadmium	0.020	U	ug/L	P373359	
		Chromium	0.40	U	ug/L	P373359	
		Copper	1.49		ug/L	P373359	
		Lead	1.0	U	ug/L	P373359	
		Nickel	0.64	I	ug/L	P373359	
		Silver	0.010	U	ug/L	P373359	

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P373359

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: P373414

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: P373359

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: P373414

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 350.1 Rev. 2.0
Batch ID: P373457

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373540

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373540

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373542

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373497

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373498

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373499

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373200

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373326

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373327

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373349

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
Batch ID: P373350

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373351

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373226

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373227

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373228

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

Reference Method: SM 2320 B-97
Batch ID: P373311

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

Reference Method: SM 2320 B-97
Batch ID: P373394

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

Reference Method: SM 4500 F-C-97
Batch ID: P373314

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P373395

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P373405

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

Reference Method: SM 5310 B-00
Batch ID: P373472

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P373405

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P373472

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: P373359

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	100		P	85 - 115
Iron	100		P	85 - 115
Magnesium	107		P	85 - 115
Potassium	104		P	85 - 115
Sodium	106		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P373414

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373359

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	98.5		P	85 - 115
Cadmium	110		P	85 - 115
Chromium	96.5		P	85 - 115
Copper	107		P	85 - 115
Lead	112		P	85 - 115
Nickel	108		P	85 - 115
Silver	115		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373414

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	101		P	85 - 115
Cadmium	97.0		P	85 - 115
Chromium	97.3		P	85 - 115
Copper	100		P	85 - 115
Lead	98.4		P	85 - 115
Nickel	102		P	85 - 115
Silver	102		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373457

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: P373540

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: P373540

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373542

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373497

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373498

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373499

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373200

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373326

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: P373327

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373349

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373350

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373351

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: P373226

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373227

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373228

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

Reference Method: SM 2320 B-97
Batch ID: P373311

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P373394

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P373314

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P373395

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P373405

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P373472

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P373405

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P373472

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P373359

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131631	Calcium	95.4		P	80 - 120
2131631	Iron	99.2	100	P/P	80 - 120
2131631	Magnesium	102	102	P/P	80 - 120
2131631	Potassium	104	105	P/P	80 - 120
2131631	Sodium	106	106	P/P	80 - 120
2131631	Zinc	100	102	P/P	80 - 120
2131816	Calcium	108		P	80 - 120
2131816	Iron	100		P	80 - 120
2131816	Magnesium	107		P	80 - 120
2131816	Potassium	108		P	80 - 120
2131816	Sodium	105		P	80 - 120
2131816	Zinc	103		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P373414

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131737	Iron	96.0	96.4	P/P	80 - 120
2131737	Zinc	105	103	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P373359

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131631	Arsenic	96.6	98.2	P/P	80 - 120
2131631	Cadmium	107	109	P/P	80 - 120
2131631	Chromium	93.3	96.3	P/P	80 - 120
2131631	Copper	101	100	P/P	80 - 120
2131631	Lead	109	110	P/P	80 - 120
2131631	Nickel	101	101	P/P	80 - 120
2131631	Silver	111	112	P/P	80 - 120
2131816	Arsenic	95.1		P	80 - 120
2131816	Cadmium	106		P	80 - 120
2131816	Chromium	95.8		P	80 - 120
2131816	Copper	108		P	80 - 120
2131816	Lead	111		P	80 - 120
2131816	Nickel	103		P	80 - 120
2131816	Silver	112		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P373414

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131737	Arsenic	120	120	P/P	70 - 130
2131737	Cadmium	104	103	P/P	70 - 130
2131737	Chromium	92.4	92.4	P/P	70 - 130
2131737	Copper	109	110	P/P	70 - 130
2131737	Lead	110	112	P/P	70 - 130
2131737	Nickel	111	111	P/P	70 - 130
2131737	Silver	102	104	P/P	70 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373457

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131665	Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373540

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131967	Ammonia-N	97.9	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373542

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131681	Ammonia-N	99.6	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373497

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131593	Kjeldahl Nitrogen	97.6	95.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373498

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131861	Kjeldahl Nitrogen	100	99.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373499

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131624	Kjeldahl Nitrogen	108	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373200

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131555	NO2NO3-N	97.5	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131665	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373327

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131685	NO2NO3-N	98.8		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373349

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131607	Total-P	95.4	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373350

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131593	Total-P	94.1	91.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373351

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131836	Total-P	97.6	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131670	O-Phosphate-P	97.4	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131609	O-Phosphate-P	96.8	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373228

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131863	O-Phosphate-P	96.1	96.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P373314

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131468	Fluoride	96.5	95.4	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P373395

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131859	Fluoride	93.6	94.3	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P373405

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131837	Organic Carbon	96.1	102	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P373472

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131682	Organic Carbon	100	103	P/P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P373405

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131837	Organic Carbon	96.1	102	P/P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P373472

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131682	Organic Carbon	100	103	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P373359

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131631	Calcium	0.894	Spike	P	0 - 20
2131631	Iron	0.816	Spike	P	0 - 20
2131631	Magnesium	0.358	Spike	P	0 - 20
2131631	Potassium	0.562	Spike	P	0 - 20
2131631	Sodium	0.246	Spike	P	0 - 20
2131631	Zinc	1.44	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P373414

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131737	Calcium	0.474	Spike	P	0 - 20
2131737	Iron	0.462	Spike	P	0 - 20
2131737	Magnesium	0.331	Spike	P	0 - 20
2131737	Potassium	2.39	Spike	P	0 - 20
2131737	Sodium	4.24	Spike	P	0 - 20
2131737	Zinc	2.01	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373359

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131631	Arsenic	1.66	Spike	P	0 - 20
2131631	Cadmium	1.55	Spike	P	0 - 20
2131631	Chromium	3.00	Spike	P	0 - 20
2131631	Copper	0.605	Spike	P	0 - 20
2131631	Lead	0.365	Spike	P	0 - 20
2131631	Nickel	0.250	Spike	P	0 - 20
2131631	Silver	0.591	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373414

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131737	Arsenic	0.271	Spike	P	0 - 20
2131737	Cadmium	0.704	Spike	P	0 - 20
2131737	Chromium	0.00242	Spike	P	0 - 20
2131737	Copper	1.01	Spike	P	0 - 20
2131737	Lead	1.43	Spike	P	0 - 20
2131737	Nickel	0.505	Spike	P	0 - 20
2131737	Silver	1.41	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131665	Ammonia-N	0.0589	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373540

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131967	Ammonia-N	1.11	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373542

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131681	Ammonia-N	0.964	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373497

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131593	Kjeldahl Nitrogen	1.97	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373498

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131861	Kjeldahl Nitrogen	0.502	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373499

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131624	Kjeldahl Nitrogen	1.71	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373200

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131555	NO2NO3-N	0.512	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131665	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131685	NO2NO3-N	0.169	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131607	Total-P	2.31	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131593	Total-P	2.68	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373351

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131836	Total-P	1.05	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131670	O-Phosphate-P	0.499	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131609	O-Phosphate-P	1.35	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373228

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131863	O-Phosphate-P	0.762	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P373311

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131468	Total Alkalinity	0.101	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P373394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131859	Total Alkalinity	0.955	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P373314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131468	Fluoride	1.01	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P373395

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131859	Fluoride	0.477	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P373405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131837	Organic Carbon	4.86	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P373472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131682	Organic Carbon	1.58	Spike	P	0 - 20

Reference Method: SM 5310 B-00 dissolved
Batch ID: P373405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131837	Organic Carbon	4.86	Spike	P	0 - 20

Reference Method: SM 5310 B-00 dissolved
Batch ID: P373472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131682	Organic Carbon	1.58	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95272

Included Lab Sample IDs: 2131699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A95277

Included Lab Sample IDs: 2131669, 2131670, 2131671, 2131672, 2131689, 2131690, 2131691, 2131692, 2131693, 2131694, 2131695, 2131696, 2131700

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	101	102	P/P	90 - 110
O-Phosphate-P	102	100	P/P	90 - 110
O-Phosphate-P	99.7	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A95300

Included Lab Sample IDs: 2131697

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

Reference Method: SM 4500 F-C-97

Run ID: A95300

Included Lab Sample IDs: 2131697

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95303

Included Lab Sample IDs: 2131665, 2131666, 2131667, 2131668, 2131681, 2131682, 2131683, 2131684, 2131685, 2131686, 2131687, 2131688

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	100	102	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A95328

Included Lab Sample IDs: 2131657, 2131658, 2131659, 2131660

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

Reference Method: SM 4500 F-C-97

Run ID: A95328

Included Lab Sample IDs: 2131657, 2131658, 2131659, 2131660

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	99.5	P/P	90 - 110
Fluoride	99.5	99.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95336

Included Lab Sample IDs: 2131668, 2131681, 2131682, 2131683, 2131684, 2131685, 2131686, 2131687, 2131688

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

Reference Method: SM 5310 B-00

Run ID: A95339

Included Lab Sample IDs: 2131665, 2131666, 2131667, 2131668, 2131681

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

Reference Method: SM 5310 B-00 dissolved

Run ID: A95339

Included Lab Sample IDs: 2131661, 2131662, 2131663, 2131664, 2131673

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95343

Included Lab Sample IDs: 2131665, 2131666, 2131667, 2131699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	98.8	P/P	90 - 110
Total-P	98.8	99.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A95351

Included Lab Sample IDs: 2131738, 2131739, 2131740, 2131741, 2131742, 2131743

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	101	P/P	90 - 110
Calcium	101	102	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Iron	101	101	P/P	95 - 105
Magnesium	102	102	P/P	90 - 110
Magnesium	102	102	P/P	90 - 110
Potassium	100	100	P/P	90 - 110
Potassium	98.7	100	P/P	90 - 110
Sodium	101	102	P/P	90 - 110
Sodium	99.1	101	P/P	90 - 110
Zinc	102	102	P/P	95 - 105
Zinc	102	103	P/P	90 - 110
Zinc	103	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95359

Included Lab Sample IDs: 2131665, 2131666, 2131667, 2131668

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95359

Included Lab Sample IDs: 2131665, 2131666, 2131667, 2131668

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

Reference Method: SM 5310 B-00

Run ID: A95368

Included Lab Sample IDs: 2131682, 2131683, 2131684, 2131685, 2131686, 2131687, 2131688, 2131699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	106	106	P/P	90 - 110
Organic Carbon	106	107	P/P	90 - 110
Organic Carbon	107	106	P/P	90 - 110

Reference Method: SM 5310 B-00 dissolved

Run ID: A95368

Included Lab Sample IDs: 2131674, 2131675, 2131676, 2131677, 2131678, 2131679, 2131680, 2131698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	106	107	P/P	90 - 110
Organic Carbon	107	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95386

Included Lab Sample IDs: 2131681, 2131682, 2131683, 2131684, 2131685, 2131686, 2131687, 2131688, 2131699

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A95416

Included Lab Sample IDs: 2131665, 2131666, 2131667, 2131668, 2131681, 2131682, 2131683, 2131684, 2131685, 2131686, 2131687, 2131688, 2131699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	96.6	P/P	90 - 110
Kjeldahl Nitrogen	95.3	104	P/P	90 - 110
Kjeldahl Nitrogen	96.6	95.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A95433

Included Lab Sample IDs: 2131731, 2131732, 2131733, 2131734, 2131735, 2131736, 2131737

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	101	P/P	90 - 110
Iron	99.4	98.6	P/P	90 - 110
Iron	99.8	99.4	P/P	95 - 105
Magnesium	101	100	P/P	90 - 110
Potassium	105	107	P/P	90 - 110
Potassium	107	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A95433

Included Lab Sample IDs: 2131731, 2131732, 2131733, 2131734, 2131735, 2131736, 2131737

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sodium	104	107	P/P	90 - 110
Sodium	105	104	P/P	90 - 110
Zinc	101	102	P/P	90 - 110
Zinc	101	101	P/P	95 - 105

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95696

Included Lab Sample IDs: 2131738, 2131739, 2131740, 2131741, 2131742, 2131743

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	101	102	P/P	90 - 110
Cadmium	102	103	P/P	90 - 110
Cadmium	103	103	P/P	90 - 110
Copper	100	98.6	P/P	90 - 110
Copper	101	99.1	P/P	90 - 110
Copper	99.1	100	P/P	90 - 110
Lead	101	102	P/P	90 - 110
Nickel	101	99.6	P/P	90 - 110
Nickel	99.6	97.7	P/P	90 - 110
Nickel	99.6	99.6	P/P	90 - 110
Silver	103	104	P/P	90 - 110
Silver	104	105	P/P	90 - 110
Silver	105	105	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95730

Included Lab Sample IDs: 2131731, 2131732, 2131733, 2131734, 2131735, 2131736, 2131737

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	102	105	P/P	90 - 110
Cadmium	99.6	99.7	P/P	90 - 110
Chromium	96.7	97.8	P/P	90 - 110
Copper	104	106	P/P	90 - 110
Lead	97.0	97.0	P/P	90 - 110
Lead	97.9	99.8	P/P	90 - 110
Nickel	104	107	P/P	90 - 110
Silver	101	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95772

Included Lab Sample IDs: 2131738, 2131739, 2131740, 2131741, 2131742, 2131743

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	97.0	98.0	P/P	90 - 110
Arsenic	98.7	97.9	P/P	90 - 110
Chromium	97.2	98.4	P/P	90 - 110
Chromium	98.9	92.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95802

Included Lab Sample IDs: 2131738, 2131739, 2131740, 2131741, 2131742

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	94.6	95.2	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 SMP	MS
EPA 200.7 Rev. 4.4	Calcium	100	95.4	108				0.894
	Calcium	103						0.474
	Iron	100	99.2	100	100			0.816
	Iron	102	96.0	96.4				0.462
	Magnesium	107	102	102	107			0.358
	Magnesium	101						0.331
	Potassium	104	104	105	108			0.562
	Potassium	102						2.39
	Sodium	106	106	106	105			0.246
	Sodium	102						4.24
	Zinc	102	100	102	103			1.44
	Zinc	103	105	103				2.01
EPA 200.8 Rev. 5.4	Arsenic	98.5	96.6	98.2	95.1			1.66
	Arsenic	101	120	120				0.271
	Cadmium	110	107	109	106			1.55
	Cadmium	97.0	104	103				0.704
	Chromium	96.5	93.3	96.3	95.8			3.00
	Chromium	97.3	92.4	92.4				0.0024
	Copper	107	101	100	108			0.605
	Copper	100	109	110				1.01
	Lead	112	109	110	111			0.365
	Lead	98.4	110	112				1.43
	Nickel	108	101	101	103			0.250
	Nickel	102	111	111				0.505
	Silver	115	111	112	112			0.591
	Silver	102	102	104				1.41
EPA 350.1 Rev. 2.0	Ammonia-N	100	103	103				0.0589
	Ammonia-N	98.9	97.9	99.2				1.11
	Ammonia-N	99.3	99.6	101				0.964
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.1	97.6	95.5				1.97
	Kjeldahl Nitrogen	95.3	100	99.7				0.502
	Kjeldahl Nitrogen	105	108	106				1.71
EPA 353.2 Rev. 2.0	NO2NO3-N	100	97.5	98.0				0.512
	NO2NO3-N	102	102	102				0.0
	NO2NO3-N	102	98.8					0.169
EPA 365.1 Rev. 2.0	Total-P	101	95.4	99.3				2.31
	Total-P	102	94.1	91.6				2.68
	Total-P	104	97.6	99.2				1.05
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	97.4	98.0				0.499
	O-Phosphate-P	99.6	96.8	98.4				1.35
	O-Phosphate-P	101	96.1	96.9				0.762
SM 2320 B-97	Total Alkalinity	104					0.101	
	Total Alkalinity	104					0.955	
SM 4500 F-C-97	Fluoride	97.6	96.5	95.4				1.01
	Fluoride	96.7	93.6	94.3				0.477
SM 5310 B-00	Organic Carbon	101	96.1	102				4.86
	Organic Carbon	104	100	103				1.58
SM 5310 B-00 dissolved	Organic Carbon	101	96.1	102				4.86
	Organic Carbon	104	100	103				1.58

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
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Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2131731, 2131732, 2131733, 2131734, 2131735, 2131736, 2131737, 2131738, 2131739, 2131740, 2131741, 2131742, 2131743
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2131731, 2131732, 2131733, 2131734, 2131735, 2131736, 2131737, 2131738, 2131739, 2131740, 2131741, 2131742, 2131743
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2131665, 2131666, 2131667, 2131668, 2131681, 2131682, 2131683, 2131684, 2131685, 2131686, 2131687, 2131688, 2131699
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2131665, 2131666, 2131667, 2131668, 2131681, 2131682, 2131683, 2131684, 2131685, 2131686, 2131687, 2131688, 2131699
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2131665, 2131666, 2131667, 2131668, 2131681, 2131682, 2131683, 2131684, 2131685, 2131686, 2131687, 2131688, 2131699
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2131665, 2131666, 2131667, 2131668, 2131681, 2131682, 2131683, 2131684, 2131685, 2131686, 2131687, 2131688, 2131699
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2131669, 2131670, 2131671, 2131672, 2131689, 2131690, 2131691, 2131692, 2131693, 2131694, 2131695, 2131696, 2131700
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2131657, 2131658, 2131659, 2131660, 2131697
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2131657, 2131658, 2131659, 2131660, 2131697
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2131665, 2131666, 2131667, 2131668, 2131681, 2131682, 2131683, 2131684, 2131685, 2131686, 2131687, 2131688, 2131699
SM 5310 B-00 dissolved / E31780	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	2131661, 2131662, 2131663, 2131664, 2131673, 2131674, 2131675, 2131676, 2131677, 2131678, 2131679, 2131680, 2131698

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	10/25/2019	10/29/2019 15:25	Elliott D. Healy	10/30/2019 11:42	Betina Topolski	2131743
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	10/30/2019 12:57	Betina Topolski	2131738
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	10/30/2019 13:08	Betina Topolski	2131738
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	10/30/2019 13:32	Betina Topolski	2131739
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	10/30/2019 13:42	Betina Topolski	2131739
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	10/30/2019 13:48	Betina Topolski	2131740
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	10/30/2019 13:59	Betina Topolski	2131740
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	10/30/2019 14:05	Betina Topolski	2131741
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	10/30/2019 14:15	Betina Topolski	2131741
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	10/30/2019 14:21	Betina Topolski	2131742
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	10/30/2019 14:31	Betina Topolski	2131742
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/01/2019 09:43	Alexander Thompson	2131731
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/01/2019 09:49	Alexander Thompson	2131732
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/01/2019 09:56	Alexander Thompson	2131733
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/01/2019 10:02	Alexander Thompson	2131734
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/01/2019 10:31	Alexander Thompson	2131735
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/01/2019 10:38	Alexander Thompson	2131735
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/01/2019 10:44	Alexander Thompson	2131736
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/01/2019 10:51	Alexander Thompson	2131736
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/01/2019 10:57	Alexander Thompson	2131737
EPA 200.8 Rev. 5.4	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/01/2019 11:40	Alexander Thompson	2131737
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	11/13/2019 06:49	Robert K Palmer	2131743
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	11/13/2019 08:47	Robert K Palmer	2131738
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	11/13/2019 08:56	Robert K Palmer	2131739
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	11/13/2019 09:06	Robert K Palmer	2131740
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	11/13/2019 09:16	Robert K Palmer	2131741
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	11/13/2019 10:25	Robert K Palmer	2131742
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	11/16/2019 00:49	Robert K Palmer	2131743
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	11/16/2019 03:14	Robert K Palmer	2131738
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	11/16/2019 03:22	Robert K Palmer	2131739
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	11/16/2019 03:29	Robert K Palmer	2131740
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	11/16/2019 03:37	Robert K Palmer	2131741
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	11/16/2019 03:45	Robert K Palmer	2131742
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	11/18/2019 15:59	Robert K Palmer	2131738
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	11/18/2019 16:09	Robert K Palmer	2131739
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	11/18/2019 16:19	Robert K Palmer	2131740
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	11/18/2019 16:29	Robert K Palmer	2131741
	10/25/2019	10/29/2019 15:25	Elliott D. Healy	11/18/2019 16:38	Robert K Palmer	2131742
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/14/2019 01:50	Justin Cutchin	2131731
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/14/2019 01:59	Justin Cutchin	2131732

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Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.8 Rev. 5.4	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/14/2019 02:09	Justin Cutchin	2131733
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/14/2019 04:25	Justin Cutchin	2131731
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/14/2019 04:35	Justin Cutchin	2131732
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/14/2019 04:44	Justin Cutchin	2131733
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/14/2019 04:54	Justin Cutchin	2131734
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/14/2019 05:04	Justin Cutchin	2131735
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/14/2019 05:13	Justin Cutchin	2131736
	10/25/2019	10/30/2019 14:43	Elliott D. Healy	11/14/2019 05:23	Justin Cutchin	2131737
	10/25/2019			10/29/2019 13:05	Ping Hua	2131665
EPA 350.1 Rev. 2.0	10/25/2019			10/29/2019 13:25	Ping Hua	2131666
	10/25/2019			10/29/2019 13:26	Ping Hua	2131667
	10/25/2019			10/29/2019 13:34	Ping Hua	2131668
	10/25/2019			10/31/2019 12:25	Ping Hua	2131699
	10/25/2019			10/31/2019 13:05	Ping Hua	2131685
	10/25/2019			10/31/2019 13:15	Ping Hua	2131681
	10/25/2019			10/31/2019 13:17	Ping Hua	2131682
	10/25/2019			10/31/2019 13:18	Ping Hua	2131683
	10/25/2019			10/31/2019 13:20	Ping Hua	2131684
	10/25/2019			10/31/2019 13:21	Ping Hua	2131686
	10/25/2019			10/31/2019 13:23	Ping Hua	2131687
	10/25/2019			10/31/2019 13:24	Ping Hua	2131688
EPA 351.2 Rev. 2.0	10/25/2019	10/31/2019 12:16	Sima Feizi	11/01/2019 14:04	Jhamieka S. Greenwood	2131665
	10/25/2019	10/31/2019 12:16	Sima Feizi	11/01/2019 14:05	Jhamieka S. Greenwood	2131666
	10/25/2019	10/31/2019 12:16	Sima Feizi	11/01/2019 14:07	Jhamieka S. Greenwood	2131667
	10/25/2019	10/31/2019 12:16	Sima Feizi	11/01/2019 14:08	Jhamieka S. Greenwood	2131668
	10/25/2019	10/31/2019 12:16	Sima Feizi	11/01/2019 14:10	Jhamieka S. Greenwood	2131681
	10/25/2019	10/31/2019 12:16	Sima Feizi	11/01/2019 14:11	Jhamieka S. Greenwood	2131682
	10/25/2019	10/31/2019 12:16	Sima Feizi	11/01/2019 14:13	Jhamieka S. Greenwood	2131683
	10/25/2019	10/31/2019 12:16	Sima Feizi	11/01/2019 14:25	Jhamieka S. Greenwood	2131684
	10/25/2019	10/31/2019 12:16	Sima Feizi	11/01/2019 14:27	Jhamieka S. Greenwood	2131685
	10/25/2019	10/31/2019 12:16	Sima Feizi	11/01/2019 14:28	Jhamieka S. Greenwood	2131686
	10/25/2019	10/31/2019 12:16	Sima Feizi	11/01/2019 14:30	Jhamieka S. Greenwood	2131687
	10/25/2019	10/31/2019 12:16	Sima Feizi	11/01/2019 14:31	Jhamieka S. Greenwood	2131688
EPA 353.2 Rev. 2.0	10/25/2019	10/31/2019 12:35	Sima Feizi	11/01/2019 15:06	Jhamieka S. Greenwood	2131699
	10/25/2019			10/28/2019 10:49	Beverly Y. Sanders	2131699
	10/25/2019			10/29/2019 10:47	Beverly Y. Sanders	2131665
	10/25/2019			10/29/2019 10:56	Beverly Y. Sanders	2131666
	10/25/2019			10/29/2019 10:57	Beverly Y. Sanders	2131667
	10/25/2019			10/29/2019 10:58	Beverly Y. Sanders	2131668
	10/25/2019			10/29/2019 10:59	Beverly Y. Sanders	2131681

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Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 353.2 Rev. 2.0	10/25/2019			10/29/2019 11:00	Beverly Y. Sanders	2131682
	10/25/2019			10/29/2019 11:01	Beverly Y. Sanders	2131683
	10/25/2019			10/29/2019 11:03	Beverly Y. Sanders	2131684
	10/25/2019			10/29/2019 11:10	Beverly Y. Sanders	2131685
	10/25/2019			10/29/2019 11:16	Beverly Y. Sanders	2131686
	10/25/2019			10/29/2019 11:17	Beverly Y. Sanders	2131687
	10/25/2019			10/29/2019 11:18	Beverly Y. Sanders	2131688
	10/25/2019			10/29/2019 11:18	Beverly Y. Sanders	2131688
EPA 365.1 Rev. 2.0	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 11:27	Lipi Saha	2131668
	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 11:28	Lipi Saha	2131681
	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 11:29	Lipi Saha	2131682
	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 11:30	Lipi Saha	2131683
	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 11:40	Lipi Saha	2131684
	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 11:41	Lipi Saha	2131685
	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 11:42	Lipi Saha	2131686
	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 11:43	Lipi Saha	2131687
	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 11:44	Lipi Saha	2131688
	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 12:58	Lipi Saha	2131699
	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 13:09	Lipi Saha	2131665
	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 13:10	Lipi Saha	2131666
	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 13:11	Lipi Saha	2131667
EPA 365.1 Rev. 2.0 dissolved	10/25/2019			10/25/2019 15:22	Jhamieka S. Greenwood	2131670
	10/25/2019			10/25/2019 15:47	Jhamieka S. Greenwood	2131671
	10/25/2019			10/25/2019 15:48	Jhamieka S. Greenwood	2131672
	10/25/2019			10/25/2019 15:49	Jhamieka S. Greenwood	2131669
	10/25/2019			10/25/2019 15:55	Jhamieka S. Greenwood	2131689
	10/25/2019			10/25/2019 15:56	Jhamieka S. Greenwood	2131690, 2131691
	10/25/2019			10/25/2019 15:57	Jhamieka S. Greenwood	2131692
	10/25/2019			10/25/2019 15:58	Jhamieka S. Greenwood	2131693
	10/25/2019			10/25/2019 15:59	Jhamieka S. Greenwood	2131694
	10/25/2019			10/25/2019 16:08	Jhamieka S. Greenwood	2131700
	10/25/2019			10/25/2019 16:10	Jhamieka S. Greenwood	2131695
	10/25/2019			10/25/2019 16:11	Jhamieka S. Greenwood	2131696
	10/25/2019			10/29/2019 09:23	Dale L. Simmons	2131697
SM 2320 B-97	10/25/2019			10/29/2019 17:40	Dale L. Simmons	2131657
	10/25/2019			10/29/2019 17:52	Dale L. Simmons	2131658
	10/25/2019			10/29/2019 18:05	Dale L. Simmons	2131659
	10/25/2019			10/29/2019 19:15	Dale L. Simmons	2131660
SM 4500 F-C-97	10/25/2019			10/29/2019 09:23	Dale L. Simmons	2131697
	10/25/2019			10/29/2019 14:42	Dale L. Simmons	2131657
	10/25/2019			10/29/2019 14:46	Dale L. Simmons	2131658

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Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-97	10/25/2019			10/29/2019 15:44	Dale L. Simmons	2131659
	10/25/2019			10/29/2019 15:48	Dale L. Simmons	2131660
SM 5310 B-00	10/25/2019			10/30/2019 08:53	Madeline Funaro	2131665
	10/25/2019			10/30/2019 09:10	Madeline Funaro	2131666
	10/25/2019			10/30/2019 09:36	Madeline Funaro	2131667
	10/25/2019			10/30/2019 10:17	Madeline Funaro	2131668
	10/25/2019			10/30/2019 10:35	Madeline Funaro	2131681
	10/25/2019			10/30/2019 16:41	Lauren Lees	2131682
	10/25/2019			10/30/2019 20:43	Lauren Lees	2131683
	10/25/2019			10/30/2019 20:59	Lauren Lees	2131684
	10/25/2019			10/30/2019 21:14	Lauren Lees	2131685
	10/25/2019			10/30/2019 21:29	Lauren Lees	2131686
	10/25/2019			10/30/2019 22:11	Lauren Lees	2131687
	10/25/2019			10/30/2019 22:43	Lauren Lees	2131688
	10/25/2019			10/30/2019 22:57	Lauren Lees	2131699
	10/25/2019			10/30/2019 07:26	Madeline Funaro	2131661
SM 5310 B-00 dissolved	10/25/2019			10/30/2019 07:39	Madeline Funaro	2131662
	10/25/2019			10/30/2019 08:06	Madeline Funaro	2131663
	10/25/2019			10/30/2019 08:22	Madeline Funaro	2131664
	10/25/2019			10/30/2019 08:36	Madeline Funaro	2131673
	10/25/2019			10/30/2019 18:14	Lauren Lees	2131674
	10/25/2019			10/30/2019 18:29	Lauren Lees	2131675
	10/25/2019			10/30/2019 19:11	Lauren Lees	2131676
	10/25/2019			10/30/2019 19:26	Lauren Lees	2131677
	10/25/2019			10/30/2019 19:41	Lauren Lees	2131678
	10/25/2019			10/30/2019 19:57	Lauren Lees	2131679
	10/25/2019			10/30/2019 20:12	Lauren Lees	2131680
	10/25/2019			10/30/2019 20:26	Lauren Lees	2131698