

Chemical Analysis Report

NW-DIST-2019-10-09-01

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

Event Description: **CHOCTAWHATCHEE NORTH RUN**
Request ID: **RQ-2019-10-14-23**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 28-OCT-2019 09:56

A handwritten signature in black ink, appearing to read "Liang Lin", 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: Choctawhatchee River South of Carlisle Lake Collection Date/Time: 10/08/2019 11:27

Field ID: G3NW0130

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2126419	EPA 180.1 Rev. 2.0	Turbidity	7.0		NTU	P372217	
	EPA 300.0 Rev. 2.1	Chloride	6.1	A	mg Cl/L	P372586	
		Sulfate	3.8	A	mg SO4/L	P372590	
	SM 2120 B	Color (true)	6.9		PCU	P372292	
	SM 2320 B-97	Total Alkalinity	74		mg CaCO3/L	P372638	
	SM 2540 C-97	TDS	94		mg/L	P372815	
	SM 2540 D-97	TSS	14		mg/L	P372824	
	SM 4500 F-C-97	Fluoride	0.059	I	mg F/L	P372641	
2126422	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P372454	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.23		mg N/L	P372306	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.61		mg N/L	P372435	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P372346	
	SM 5310 B-00	Organic Carbon	1.6		mg C/L	P372323	
2126425	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.018		mg P/L	P372257	
2126439	EPA 200.7 Rev. 4.4	Barium	30.3		ug/L	P372277	
		Calcium	24.9		mg/L	P372277	
		Iron	840		ug/L	P372277	
		Magnesium	4.47		mg/L	P372277	
		Potassium	1.4		mg/L	P372277	
		Sodium	5.8		mg/L	P372277	
		Zinc	5.0	U	ug/L	P372277	
		Aluminum	372		ug/L	P372277	
		Antimony	0.050	U	ug/L	P372277	
		Arsenic	0.79		ug/L	P372277	
	EPA 200.8 Rev. 5.4	Boron**	15.5		ug/L	P372277	
		Cadmium	0.020	U	ug/L	P372277	
		Chromium	1.1	I	ug/L	P372277	
		Copper	0.40	U	ug/L	P372277	
		Lead	0.34	I	ug/L	P372277	
		Nickel	0.50	U	ug/L	P372277	
		Selenium	0.20	U	ug/L	P372277	
		Silver	0.010	U	ug/L	P372277	
		Thallium	0.10	U	ug/L	P372277	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: SISTER RIVER MOUTH

Collection Date/Time: 10/08/2019 13:18

Field ID: G3NW0154

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2126428	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P372217	
	EPA 300.0 Rev. 2.1	Chloride	540		mg Cl/L	P372586	
		Sulfate	76		mg SO4/L	P372590	
		Color (true)	14		PCU	P372293	
	SM 2320 B-97	Total Alkalinity	83		mg CaCO3/L	P372638	
	SM 2540 C-97	TDS	1.00E+03		mg/L	P372816	
	SM 2540 D-97	TSS	2	I	mg/L	P372825	
	SM 4500 F-C-97	Fluoride	0.083	I	mg F/L	P372641	
2126429	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P372454	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25		mg N/L	P372338	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.28		mg N/L	P372436	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P372347	
	SM 5310 B-00	Organic Carbon	2.4		mg C/L	P372323	
2126430	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P372257	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Choctawhatchee River upstream of Holmes Creek

Collection Date/Time: 10/08/2019 14:40

Field ID: G3NW0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2126420	EPA 180.1 Rev. 2.0	Turbidity	8.4		NTU	P372217	
	EPA 300.0 Rev. 2.1	Chloride	6.4		mg Cl/L	P372586	
		Sulfate	2.9		mg SO4/L	P372590	
		Color (true)	26	A	PCU	P372293	
	SM 2320 B-97	Total Alkalinity	22		mg CaCO3/L	P372638	
	SM 2540 C-97	TDS	39		mg/L	P372815	
	SM 2540 D-97	TSS	7	I	mg/L	P372824	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P372641	
2126423	EPA 350.1 Rev. 2.0	Ammonia-N	0.072		mg N/L	P372454	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24		mg N/L	P372306	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.046		mg N/L	P372436	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P372346	
	SM 5310 B-00	Organic Carbon	1.9		mg C/L	P372323	
2126426	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P372257	
2126440	EPA 200.7 Rev. 4.4	Barium	26.9		ug/L	P372277	
		Calcium	7.30		mg/L	P372277	
		Iron	690		ug/L	P372277	
		Magnesium	1.56		mg/L	P372277	
		Potassium	0.76	I	mg/L	P372277	
		Sodium	4.1		mg/L	P372277	
		Zinc	5.0	U	ug/L	P372277	
	EPA 200.8 Rev. 5.4	Aluminum	175		ug/L	P372277	
		Antimony	0.050	U	ug/L	P372277	
		Arsenic	0.48		ug/L	P372277	
		Boron**	11.1		ug/L	P372277	
		Cadmium	0.020	U	ug/L	P372277	
		Chromium	0.47	I	ug/L	P372277	
		Copper	0.40	U	ug/L	P372277	
		Lead	0.20	U	ug/L	P372277	
		Nickel	0.50	U	ug/L	P372277	
		Selenium	0.20	U	ug/L	P372277	
		Silver	0.010	U	ug/L	P372277	
		Thallium	0.10	U	ug/L	P372277	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Yellow River at Milligan/Yellow River Park

Collection Date/Time: 10/08/2019 16:26

Field ID: G4NW0260

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2126421	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P372217	
	EPA 300.0 Rev. 2.1	Chloride	3.9		mg Cl/L	P372586	
		Sulfate	1.1		mg SO4/L	P372590	
		Color (true)	14		PCU	P372293	
	SM 2320 B-97	Total Alkalinity	41		mg CaCO3/L	P372638	
	SM 2540 C-97	TDS	62		mg/L	P372815	
	SM 2540 D-97	TSS	5	I	mg/L	P372824	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P372641	
2126424	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P372454	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P372338	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P372436	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P372347	
	SM 5310 B-00	Organic Carbon	2.0		mg C/L	P372323	
2126427	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P372257	
2126441	EPA 200.7 Rev. 4.4	Barium	17.7		ug/L	P372277	
		Calcium	13.9		mg/L	P372277	
		Iron	410		ug/L	P372277	
		Magnesium	2.75		mg/L	P372277	
		Potassium	0.59	I	mg/L	P372277	
		Sodium	2.3		mg/L	P372277	
		Zinc	5.0	U	ug/L	P372277	
	EPA 200.8 Rev. 5.4	Aluminum	96		ug/L	P372277	
		Antimony	0.050	U	ug/L	P372277	
		Arsenic	0.36		ug/L	P372277	
		Boron**	8.7		ug/L	P372277	
		Cadmium	0.020	U	ug/L	P372277	
		Chromium	0.40	U	ug/L	P372277	
		Copper	0.40	U	ug/L	P372277	
		Lead	0.20	U	ug/L	P372277	
		Nickel	0.50	U	ug/L	P372277	
		Selenium	0.20	U	ug/L	P372277	
		Silver	0.010	U	ug/L	P372277	
		Thallium	0.10	U	ug/L	P372277	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P372217

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P372277

Component	Result	Code	Units
Barium	1.0	U	ug/L
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: P372277

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372586

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372590

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372454

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372306

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372338

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372435

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372436

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372346

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372347

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372257

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

Reference Method: SM 2120 B
Batch ID: P372292

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P372293

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P372638

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

Reference Method: SM 2540 C-97
Batch ID: P372815

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P372816

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P372824

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P372825

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P372641

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P372323

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: P372277

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	109		P	85 - 115
Iron	104		P	85 - 115
Magnesium	112		P	85 - 115
Potassium	107		P	85 - 115
Sodium	99.5		P	85 - 115
Zinc	97.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P372277

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	105		P	85 - 115
Antimony	106		P	85 - 115
Arsenic	105		P	85 - 115
Boron	104		P	85 - 115
Cadmium	98.9		P	85 - 115
Chromium	101		P	85 - 115
Copper	102		P	85 - 115
Lead	100		P	85 - 115
Nickel	101		P	85 - 115
Selenium	98.7		P	85 - 115
Silver	104		P	85 - 115
Thallium	106		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372586

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372590

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372454

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372306

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.3		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372338

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372435

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: P372436

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372346

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372347

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372257

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

Reference Method: SM 2120 B
Batch ID: P372292

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P372293

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.8		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P372638

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P372641

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P372323

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P372277

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126324	Barium	96.7	98.5	P/P	80 - 120
2126324	Calcium	106	107	P/P	80 - 120
2126324	Iron	100	101	P/P	80 - 120
2126324	Magnesium	106	107	P/P	80 - 120
2126324	Potassium	106	106	P/P	80 - 120
2126324	Sodium	98.9		P	80 - 120
2126324	Zinc	95.0	96.8	P/P	80 - 120
2126664	Barium	96.4		P	80 - 120
2126664	Calcium	103		P	80 - 120
2126664	Iron	103		P	80 - 120
2126664	Magnesium	103		P	80 - 120
2126664	Potassium	100		P	80 - 120
2126664	Sodium	100		P	80 - 120
2126664	Zinc	94.3		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P372277

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126324	Aluminum	103	106	P/P	80 - 120
2126324	Antimony	106	109	P/P	80 - 120
2126324	Arsenic	106	108	P/P	80 - 120
2126324	Boron	104	106	P/P	80 - 120
2126324	Cadmium	103	104	P/P	80 - 120
2126324	Chromium	103	104	P/P	80 - 120
2126324	Copper	103	105	P/P	80 - 120
2126324	Lead	101	105	P/P	80 - 120
2126324	Nickel	104	104	P/P	80 - 120
2126324	Selenium	98.6	99.1	P/P	80 - 120
2126324	Silver	104	107	P/P	80 - 120
2126324	Thallium	107	112	P/P	80 - 120
2126664	Aluminum	118		P	80 - 120
2126664	Antimony	109		P	80 - 120
2126664	Arsenic	109		P	80 - 120
2126664	Boron	104		P	80 - 120
2126664	Cadmium	108		P	80 - 120
2126664	Chromium	105		P	80 - 120
2126664	Copper	103		P	80 - 120
2126664	Lead	105		P	80 - 120
2126664	Nickel	106		P	80 - 120
2126664	Selenium	101		P	80 - 120
2126664	Silver	107		P	80 - 120
2126664	Thallium	111		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P372586

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126419	Chloride	103		P	90 - 110
2126534	Chloride	103		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372590

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126419	Sulfate	105		P	90 - 110
2126534	Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372454

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126422	Ammonia-N	97.9	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372306

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126422	Kjeldahl Nitrogen	106	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126537	Kjeldahl Nitrogen	97.1	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372435

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126359	NO2NO3-N	98.0	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372436

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126423	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126360	Total-P	97.5	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372347

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126429	Total-P	97.9	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372257

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126400	O-Phosphate-P	97.3	97.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P372641

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126934	Fluoride	96.3	95.7	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P372323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126552	Organic Carbon	94.3	97.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P372217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126381	Turbidity	0.334	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P372277

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126324	Barium	1.89	Spike	P	0 - 20
2126324	Calcium	0.827	Spike	P	0 - 20
2126324	Iron	0.597	Spike	P	0 - 20
2126324	Magnesium	0.789	Spike	P	0 - 20
2126324	Potassium	0.299	Spike	P	0 - 20
2126324	Sodium	0.287	Spike	P	0 - 20
2126324	Zinc	1.91	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P372277

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126324	Aluminum	2.55	Spike	P	0 - 20
2126324	Antimony	2.88	Spike	P	0 - 20
2126324	Arsenic	1.84	Spike	P	0 - 20
2126324	Boron	1.72	Spike	P	0 - 20
2126324	Cadmium	1.21	Spike	P	0 - 20
2126324	Chromium	1.58	Spike	P	0 - 20
2126324	Copper	1.26	Spike	P	0 - 20
2126324	Lead	3.37	Spike	P	0 - 20
2126324	Nickel	0.412	Spike	P	0 - 20
2126324	Selenium	0.477	Spike	P	0 - 20
2126324	Silver	2.21	Spike	P	0 - 20
2126324	Thallium	4.56	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126419	Chloride	0.646	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372590

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126419	Sulfate	0.725	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372454

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126422	Ammonia-N	1.04	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126422	Kjeldahl Nitrogen	4.94	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126537	Kjeldahl Nitrogen	4.75	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372435

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126359	NO2NO3-N	0.913	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126423	NO2NO3-N	0.810	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126360	Total-P	2.53	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372347

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126429	Total-P	2.25	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126400	O-Phosphate-P	0.369	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
 Batch ID: P372292

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126380	Color (true)	1.24	Sample	P	0 - 20

Reference Method: SM 2120 B
 Batch ID: P372293

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126420	Color (true)	0.302	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P372638

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126934	Total Alkalinity	0.590	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
 Batch ID: P372815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126280	TDS	1.03	Sample	P	0 - 10

Reference Method: SM 2540 C-97
 Batch ID: P372816

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126446	TDS	3.09	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P372641

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126934	Fluoride	0.480	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P372323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126552	Organic Carbon	2.78	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A94835

Included Lab Sample IDs: 2126419, 2126420, 2126421, 2126428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	97.5	98.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A94852

Included Lab Sample IDs: 2126425, 2126426, 2126427, 2126430

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.6	98.2	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A94864

Included Lab Sample IDs: 2126419, 2126420, 2126421, 2126428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	99.3	P/P	90 - 115
Color (true)	99.3	101	P/P	90 - 115

Reference Method: SM 5310 B-00

Run ID: A94882

Included Lab Sample IDs: 2126422, 2126423, 2126424, 2126429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.0	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A94889

Included Lab Sample IDs: 2126422, 2126423, 2126424, 2126429

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A94914

Included Lab Sample IDs: 2126439, 2126440, 2126441

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94931

Included Lab Sample IDs: 2126422, 2126423, 2126424, 2126429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	97.9	P/P	90 - 110
Kjeldahl Nitrogen	102	100	P/P	90 - 110
Kjeldahl Nitrogen	94.1	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94935

Included Lab Sample IDs: 2126422, 2126423, 2126424, 2126429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110
Ammonia-N	101	101	P/P	90 - 110
Ammonia-N	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94966

Included Lab Sample IDs: 2126422, 2126423, 2126424, 2126429

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A95003

Included Lab Sample IDs: 2126419, 2126420, 2126421, 2126428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	103	P/P	90 - 110
Sulfate	103	104	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A95021

Included Lab Sample IDs: 2126419, 2126420, 2126421, 2126428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A95021

Included Lab Sample IDs: 2126419, 2126420, 2126421, 2126428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	98.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95119

Included Lab Sample IDs: 2126439, 2126440, 2126441

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	101	P/P	90 - 110
Antimony	101	102	P/P	90 - 110
Arsenic	103	105	P/P	90 - 110
Boron	101	99.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95119

Included Lab Sample IDs: 2126439, 2126440, 2126441

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	104	103	P/P	90 - 110
Chromium	101	100	P/P	90 - 110
Copper	102	103	P/P	90 - 110
Lead	99.5	99.1	P/P	90 - 110
Nickel	102	103	P/P	90 - 110
Silver	102	102	P/P	90 - 110
Thallium	98.2	97.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95161

Included Lab Sample IDs: 2126439, 2126440, 2126441

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	93.5	96.0	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					0.334	
EPA 200.7 Rev. 4.4	Barium	101	96.7	98.5	96.4		1.89
	Calcium	109	106	107	103		0.827
	Iron	104	100	101	103		0.597
	Magnesium	112	106	107	103		0.789
	Potassium	107	106	106	100		0.299
	Sodium	99.5	98.9	100			0.287
	Zinc	97.6	95.0	96.8	94.3		1.91
EPA 200.8 Rev. 5.4	Aluminum	105	103	106	118		2.55
	Antimony	106	106	109	109		2.88
	Arsenic	105	106	108	109		1.84
	Boron	104	104	106	104		1.72
	Cadmium	98.9	103	104	108		1.21
	Chromium	101	103	104	105		1.58
	Copper	102	103	105	103		1.26
	Lead	100	101	105	105		3.37
	Nickel	101	104	104	106		0.412
	Selenium	98.7	98.6	99.1	101		0.477
	Silver	104	104	107	107		2.21
	Thallium	106	107	112	111		4.56
EPA 300.0 Rev. 2.1	Chloride	104	103	103		0.646	
	Sulfate	104	105	104		0.725	
EPA 350.1 Rev. 2.0	Ammonia-N	98.9	97.9	99.5			1.04
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.3	106	99.6			4.94
	Kjeldahl Nitrogen	97.5	97.1	104			4.75
EPA 353.2 Rev. 2.0	NO2NO3-N	102	98.0	99.0			0.913
	NO2NO3-N	100	101	100			0.810
EPA 365.1 Rev. 2.0	Total-P	100	97.5	101			2.53
	Total-P	99.8	97.9	100			2.25
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	97.3	97.8			0.369
SM 2120 B	Color (true)	101				1.24	
	Color (true)	99.8				0.302	
SM 2320 B-97	Total Alkalinity	104				0.590	
SM 2540 C-97	TDS					1.03	
	TDS					3.09	
SM 4500 F-C-97	Fluoride	96.5	96.3	95.7			0.480
SM 5310 B-00	Organic Carbon	93.6	94.3	97.9			2.78

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2126419, 2126420, 2126421, 2126428
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2126439, 2126440, 2126441
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2126439, 2126440, 2126441
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2126419, 2126420, 2126421, 2126428
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2126419, 2126420, 2126421, 2126428
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2126422, 2126423, 2126424, 2126429

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2126422, 2126423, 2126424, 2126429
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2126422, 2126423, 2126424, 2126429
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2126422, 2126423, 2126424, 2126429
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2126425, 2126426, 2126427, 2126430
SM 2120 B / E31780	True Color measured at 450 nm	2126419, 2126420, 2126421, 2126428
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2126419, 2126420, 2126421, 2126428
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2126419, 2126420, 2126421, 2126428
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2126419, 2126420, 2126421, 2126428
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2126419, 2126420, 2126421, 2126428
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2126422, 2126423, 2126424, 2126429

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	10/09/2019			10/09/2019 15:36	Rosalyn Ballman	2126419, 2126420, 2126421, 2126428
EPA 200.7 Rev. 4.4	10/09/2019	10/10/2019 17:30	Elliott D. Healy	10/11/2019 15:05	Betina Topolski	2126439
	10/09/2019	10/10/2019 17:30	Elliott D. Healy	10/11/2019 15:11	Betina Topolski	2126440
	10/09/2019	10/10/2019 17:30	Elliott D. Healy	10/11/2019 15:36	Betina Topolski	2126441
EPA 200.8 Rev. 5.4	10/09/2019	10/10/2019 17:30	Elliott D. Healy	10/21/2019 19:38	Justin Cutchin	2126439
	10/09/2019	10/10/2019 17:30	Elliott D. Healy	10/21/2019 19:48	Justin Cutchin	2126440
	10/09/2019	10/10/2019 17:30	Elliott D. Healy	10/21/2019 19:57	Justin Cutchin	2126441
	10/09/2019	10/10/2019 17:30	Elliott D. Healy	10/22/2019 19:34	Justin Cutchin	2126439
	10/09/2019	10/10/2019 17:30	Elliott D. Healy	10/22/2019 19:42	Justin Cutchin	2126440
	10/09/2019	10/10/2019 17:30	Elliott D. Healy	10/22/2019 19:51	Justin Cutchin	2126441
EPA 300.0 Rev. 2.1	10/09/2019			10/15/2019 14:11	Jhamieka S. Greenwood	2126419
	10/09/2019			10/15/2019 15:24	Jhamieka S. Greenwood	2126420
	10/09/2019			10/15/2019 15:36	Jhamieka S. Greenwood	2126421
	10/09/2019			10/15/2019 15:48	Jhamieka S. Greenwood	2126428
EPA 350.1 Rev. 2.0	10/09/2019			10/11/2019 14:39	Ping Hua	2126422
	10/09/2019			10/11/2019 14:53	Ping Hua	2126424
	10/09/2019			10/11/2019 14:54	Ping Hua	2126429
	10/09/2019			10/11/2019 15:29	Ping Hua	2126423
EPA 351.2 Rev. 2.0	10/09/2019	10/11/2019 10:11	Sima Feizi	10/14/2019 15:02	Jhamieka S. Greenwood	2126422
	10/09/2019	10/11/2019 10:11	Sima Feizi	10/14/2019 15:18	Jhamieka S. Greenwood	2126423
	10/09/2019	10/11/2019 10:11	Sima Feizi	10/14/2019 15:35	Jhamieka S. Greenwood	2126424
	10/09/2019	10/11/2019 10:11	Sima Feizi	10/14/2019 15:37	Jhamieka S. Greenwood	2126429
EPA 353.2 Rev. 2.0	10/09/2019			10/11/2019 10:09	Beverly Y. Sanders	2126422
	10/09/2019			10/11/2019 10:16	Beverly Y. Sanders	2126423
	10/09/2019			10/11/2019 10:22	Beverly Y. Sanders	2126424
	10/09/2019			10/11/2019 10:23	Beverly Y. Sanders	2126429
EPA 365.1 Rev. 2.0	10/09/2019	10/10/2019 14:40	Lipi Saha	10/14/2019 16:40	Rosalyn Ballman	2126422
	10/09/2019	10/10/2019 14:40	Lipi Saha	10/14/2019 16:41	Rosalyn Ballman	2126423
	10/09/2019	10/10/2019 14:40	Lipi Saha	10/14/2019 16:43	Rosalyn Ballman	2126424
	10/09/2019	10/10/2019 14:40	Lipi Saha	10/14/2019 16:44	Rosalyn Ballman	2126429
EPA 365.1 Rev. 2.0 dissolved	10/09/2019			10/09/2019 17:20	Julia Storbeck	2126425
	10/09/2019			10/09/2019 17:21	Julia Storbeck	2126426
	10/09/2019			10/09/2019 17:22	Julia Storbeck	2126427
	10/09/2019			10/09/2019 17:23	Julia Storbeck	2126430
SM 2120 B	10/09/2019			10/09/2019 17:18	Madeline Funaro	2126419
	10/09/2019			10/09/2019 17:22	Madeline Funaro	2126420
	10/09/2019			10/09/2019 17:23	Madeline Funaro	2126421
	10/09/2019			10/09/2019 17:24	Madeline Funaro	2126428
SM 2320 B-97	10/09/2019			10/15/2019 02:18	Dale L. Simmons	2126419
	10/09/2019			10/15/2019 02:31	Dale L. Simmons	2126420

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-97	10/09/2019			10/15/2019 02:44	Dale L. Simmons	2126421
	10/09/2019			10/15/2019 04:15	Dale L. Simmons	2126428
SM 2540 C-97	10/09/2019			10/11/2019 12:48	Yijie Li	2126419, 2126420, 2126421, 2126428
SM 2540 D-97	10/09/2019			10/11/2019 12:48	Yijie Li	2126419, 2126420, 2126421, 2126428
SM 4500 F-C-97	10/09/2019			10/15/2019 02:18	Dale L. Simmons	2126419
	10/09/2019			10/15/2019 02:31	Dale L. Simmons	2126420
	10/09/2019			10/15/2019 02:44	Dale L. Simmons	2126421
	10/09/2019			10/15/2019 04:15	Dale L. Simmons	2126428
SM 5310 B-00	10/09/2019			10/10/2019 23:25	Madeline Funaro	2126422
	10/09/2019			10/10/2019 23:40	Madeline Funaro	2126423
	10/09/2019			10/10/2019 23:52	Madeline Funaro	2126424
	10/09/2019			10/11/2019 00:04	Madeline Funaro	2126429