

Chemical Analysis Report

SO-DIST-2020-02-26-01

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

Event Description: **2020 SMP : Canals**

Request ID: **RQ-2020-02-24-40**

Customer: **SO-DIST**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: Nicole Reistad

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: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 18-MAR-2020 09:47



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: C-19 @ US 27

Collection Date/Time: 02/25/2020 09:45

Field ID: G3SD0087

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2160711	EPA 180.1 Rev. 2.0	Turbidity	6.3	A	NTU	P379752	
	EPA 300.0 Rev. 2.1	Chloride	55		mg Cl/L	P380163	
		Sulfate	26		mg SO4/L	P380166	
	SM 2120 B-2011	Color (true)	71		PCU	P379669	
	SM 2320 B-2011	Total Alkalinity	147		mg CaCO3/L	P380322	
	SM 2540 C-2011	TDS	285		mg/L	P380328	
	SM 2540 D-2011	TSS	10	I	mg/L	P380332	
	SM 4500 F-C-2011	Fluoride	0.17		mg F/L	P380273	
2160715	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P379914	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P379880	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P380101	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P380042	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P379928	
2160719	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.072		mg P/L	P379694	

Sample Location: Lake Hicpochee in Canal

Collection Date/Time: 02/25/2020 10:10

Field ID: G3SD0102

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2160712	EPA 180.1 Rev. 2.0	Turbidity	5.1		NTU	P379752	
	EPA 300.0 Rev. 2.1	Chloride	49	A	mg Cl/L	P380163	
		Sulfate	26	A	mg SO4/L	P380166	
	SM 2120 B-2011	Color (true)	46		PCU	P379669	
	SM 2320 B-2011	Total Alkalinity	117		mg CaCO3/L	P380322	
	SM 2540 C-2011	TDS	247		mg/L	P380328	
	SM 2540 D-2011	TSS	5	I	mg/L	P380332	
	SM 4500 F-C-2011	Fluoride	0.18		mg F/L	P380273	
2160716	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P379914	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P379880	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P380101	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P380042	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P379928	
2160720	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P379694	

Sample Location: Caloosa Canal at 27

Collection Date/Time: 02/25/2020 10:30

Field ID: G3SD0162

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2160713	EPA 180.1 Rev. 2.0	Turbidity	9.0		NTU	P379752	
	EPA 300.0 Rev. 2.1	Chloride	51		mg Cl/L	P380163	
		Sulfate	29		mg SO4/L	P380166	
		Color (true)	78		PCU	P379669	
	SM 2120 B-2011	Total Alkalinity	95		mg CaCO3/L	P380322	
	SM 2540 C-2011	TDS	219		mg/L	P380328	
	SM 2540 D-2011	TSS	15		mg/L	P380332	
	SM 4500 F-C-2011	Fluoride	0.16		mg F/L	P380273	
2160717	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P380066	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P379880	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.072		mg N/L	P380102	
	EPA 365.1 Rev. 2.0	Total-P	0.083		mg P/L	P380135	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P379928	
2160721	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.011		mg P/L	P379694	

Sample Location: Nine Mile Canal @ SR 80

Collection Date/Time: 02/25/2020 11:00

Field ID: G3SD0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2160723	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P379752	
	EPA 300.0 Rev. 2.1	Chloride	63		mg Cl/L	P380164	
		Sulfate	35		mg SO4/L	P380167	
		Color (true)	75		PCU	P379669	
	SM 2320 B-2011	Total Alkalinity	141		mg CaCO3/L	P380322	
	SM 2540 C-2011	TDS	324		mg/L	P380328	
	SM 2540 D-2011	TSS	4	I	mg/L	P380332	
	SM 4500 F-C-2011	Fluoride	0.18		mg F/L	P380273	
2160724	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P380066	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P379881	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.034		mg N/L	P380102	
	EPA 365.1 Rev. 2.0	Total-P	0.065		mg P/L	P380135	
	SM 5310 B-2011	Organic Carbon	19		mg C/L	P379929	
2160725	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.021		mg P/L	P379694	
2160738	EPA 200.7 Rev. 4.4	Barium	30.2		ug/L	P379953	
		Calcium	57.8		mg/L	P379953	
		Iron	84	I	ug/L	P379953	
		Magnesium	11.8		mg/L	P379953	
		Potassium	8.6		mg/L	P379953	
		Sodium	37.9		mg/L	P379953	
		Zinc	5.0	U	ug/L	P379953	
	EPA 200.8 Rev. 5.4	Aluminum	40		ug/L	P379953	
		Antimony	0.12	I	ug/L	P379953	
		Arsenic	1.25		ug/L	P379953	
		Boron**	56.8		ug/L	P379953	
		Cadmium	0.020	U	ug/L	P379953	
		Chromium	0.40	U	ug/L	P379953	
		Copper	0.59	I	ug/L	P379953	
		Lead	0.20	U	ug/L	P379953	
		Nickel	0.50	U	ug/L	P379953	
		Selenium	0.20	U	ug/L	P379953	
		Silver	0.010	U	ug/L	P379953	
		Thallium	0.10	U	ug/L	P379953	
		Hardness	193		mg/L	P379953	
	SM 2340B						

Sample Location: C-139Annex@DeerFenceRd

Collection Date/Time: 02/25/2020 12:10

Field ID: G1SD0076

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2160714	EPA 180.1 Rev. 2.0	Turbidity	7.7		NTU	P379752	
	EPA 300.0 Rev. 2.1	Chloride	43		mg Cl/L	P380163	
		Sulfate	9.3		mg SO4/L	P380166	
		Color (true)	80	A	PCU	P379669	
	SM 2320 B-2011	Total Alkalinity	231	A	mg CaCO3/L	P380322	
	SM 2540 C-2011	TDS	346	A	mg/L	P380328	
	SM 2540 D-2011	TSS	12	A	mg/L	P380332	
	SM 4500 F-C-2011	Fluoride	0.30		mg F/L	P380273	
2160718	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P380066	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P379881	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P380102	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P380135	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P379929	
2160722	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.052		mg P/L	P379694	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P379752

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P379953

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: P379953

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: P380163

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380164

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380166

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380167

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379914

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380066

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379880

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379881

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380101

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380102

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380042

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380135

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379694

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

Reference Method: SM 2120 B-2011
Batch ID: P379669

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P380322

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

Reference Method: SM 2540 C-2011
Batch ID: P380328

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P380332

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P380273

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P379928

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

Reference Method: SM 5310 B-2011
Batch ID: P379929

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: P379953

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	99.2		P	85 - 115
Calcium	101		P	85 - 115
Iron	99.0		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	100		P	85 - 115
Sodium	104		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P379953

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	96.7		P	85 - 115
Arsenic	98.8		P	85 - 115
Boron	99.7		P	85 - 115
Cadmium	99.5		P	85 - 115
Chromium	103		P	85 - 115
Copper	102		P	85 - 115
Lead	98.5		P	85 - 115
Nickel	100		P	85 - 115
Selenium	98.6		P	85 - 115
Silver	102		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380163

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380164

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380166

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380167

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.9		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379914

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: P380066

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379880

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379881

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380101

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: P380102

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: P380042

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380135

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: P379694

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P379669

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.8		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P380322

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P380273

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P379928

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P379929

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P379953

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160544	Barium	97.0		P	80 - 120
2160544	Calcium	97.6		P	80 - 120
2160544	Iron	100		P	80 - 120
2160544	Magnesium	101		P	80 - 120
2160544	Potassium	94.7		P	80 - 120
2160544	Sodium	103		P	80 - 120
2160544	Zinc	100		P	80 - 120
2160921	Barium	98.6	98.8	P/P	80 - 120
2160921	Calcium	101		P	80 - 120
2160921	Iron	102	102	P/P	80 - 120
2160921	Magnesium	105		P	80 - 120
2160921	Potassium	110	111	P/P	80 - 120
2160921	Sodium	107		P	80 - 120
2160921	Zinc	100	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P379953

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160544	Aluminum	95.7		P	80 - 120
2160544	Antimony	98.8		P	80 - 120
2160544	Arsenic	102		P	80 - 120
2160544	Boron	98.8		P	80 - 120
2160544	Cadmium	104		P	80 - 120
2160544	Chromium	107		P	80 - 120
2160544	Copper	100		P	80 - 120
2160544	Lead	99.5		P	80 - 120
2160544	Nickel	99.5		P	80 - 120
2160544	Selenium	99.9		P	80 - 120
2160544	Silver	101		P	80 - 120
2160544	Thallium	104		P	80 - 120
2160921	Aluminum	95.9	100	P/P	80 - 120
2160921	Antimony	96.0	99.0	P/P	80 - 120
2160921	Arsenic	103	101	P/P	80 - 120
2160921	Boron	95.9	96.7	P/P	80 - 120
2160921	Cadmium	100	103	P/P	80 - 120
2160921	Chromium	103	104	P/P	80 - 120
2160921	Copper	98.3	101	P/P	80 - 120
2160921	Lead	95.3	99.0	P/P	80 - 120
2160921	Nickel	96.5	99.6	P/P	80 - 120
2160921	Selenium	101	98.7	P/P	80 - 120
2160921	Silver	102	102	P/P	80 - 120
2160921	Thallium	101	106	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380163

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160611	Chloride	99.5		P	90 - 110
2160712	Chloride	97.1		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380164

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160748	Chloride	103		P	90 - 110
2160965	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380166

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160611	Sulfate	100		P	90 - 110
2160712	Sulfate	99.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380167

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160748	Sulfate	102		P	90 - 110
2160965	Sulfate	99.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379914

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160652	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380066

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160718	Ammonia-N	99.8	99.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379880

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160652	Kjeldahl Nitrogen	107	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379881

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160900	Kjeldahl Nitrogen	97.2	94.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380101

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160613	NO2NO3-N	98.5	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380102

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160717	NO2NO3-N	99.2	99.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160558	Total-P	103	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160717	Total-P	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379694

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160720	O-Phosphate-P	96.2	98.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P380273

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161279	Fluoride	103	105	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P379928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160197	Organic Carbon	96.6	97.2	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P379929

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160718	Organic Carbon	104		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P379752

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160711	Turbidity	3.81	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P379953

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160921	Barium	0.232	Spike	P	0 - 20
2160921	Calcium	0.000615	Spike	P	0 - 20
2160921	Iron	0.371	Spike	P	0 - 20
2160921	Magnesium	1.08	Spike	P	0 - 20
2160921	Potassium	1.00	Spike	P	0 - 20
2160921	Sodium	0.0555	Spike	P	0 - 20
2160921	Zinc	0.847	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P379953

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160921	Aluminum	4.16	Spike	P	0 - 20
2160921	Antimony	3.05	Spike	P	0 - 20
2160921	Arsenic	1.29	Spike	P	0 - 20
2160921	Boron	0.683	Spike	P	0 - 20
2160921	Cadmium	2.85	Spike	P	0 - 20
2160921	Chromium	1.17	Spike	P	0 - 20
2160921	Copper	2.59	Spike	P	0 - 20
2160921	Lead	3.82	Spike	P	0 - 20
2160921	Nickel	3.22	Spike	P	0 - 20
2160921	Selenium	1.80	Spike	P	0 - 20
2160921	Silver	0.159	Spike	P	0 - 20
2160921	Thallium	5.28	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380163

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160712	Chloride	1.39	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380164

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160748	Chloride	0.387	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160712	Sulfate	1.09	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380167

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160748	Sulfate	0.903	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160652	Ammonia-N	0.881	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160718	Ammonia-N	0.132	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379880

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160652	Kjeldahl Nitrogen	0.938	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379881

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160900	Kjeldahl Nitrogen	1.58	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160613	NO2NO3-N	0.320	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380102

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160717	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160558	Total-P	2.40	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160717	Total-P	0.638	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379694

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160720	O-Phosphate-P	1.51	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P379669

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160714	Color (true)	0.281	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P380322

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160714	Total Alkalinity	0.124	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
Batch ID: P380328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160714	TDS	4.34	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P380332

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160714	TSS	3.39	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P380273

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161279	Fluoride	0.960	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P379928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160197	Organic Carbon	0.374	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P379929

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160718	Organic Carbon	1.05	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B-2011

Run ID: A97825

Included Lab Sample IDs: 2160711, 2160712, 2160713, 2160714, 2160723

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.0	99.9	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97831

Included Lab Sample IDs: 2160719, 2160720, 2160721, 2160722, 2160725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	93.4	93.9	P/P	90 - 110
O-Phosphate-P	93.9	93.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97852

Included Lab Sample IDs: 2160711, 2160712, 2160713, 2160714, 2160723

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.0	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97928

Included Lab Sample IDs: 2160715, 2160716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	91.6	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A97937

Included Lab Sample IDs: 2160715, 2160716, 2160717, 2160718, 2160724

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	96.0	P/P	90 - 110
Organic Carbon	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97957

Included Lab Sample IDs: 2160715, 2160716, 2160717, 2160718, 2160724

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	96.1	P/P	90 - 110
Kjeldahl Nitrogen	96.1	98.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97999

Included Lab Sample IDs: 2160717, 2160718, 2160724

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A98001

Included Lab Sample IDs: 2160711, 2160712, 2160713, 2160714, 2160723

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	100	P/P	90 - 110
Chloride	97.7	101	P/P	90 - 110
Chloride	98.2	97.7	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110
Sulfate	98.0	102	P/P	90 - 110
Sulfate	98.5	98.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98009

Included Lab Sample IDs: 2160738

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	101	P/P	90 - 110
Calcium	96.9	96.8	P/P	90 - 110
Iron	99.0	98.8	P/P	90 - 110
Magnesium	99.4	99.0	P/P	90 - 110
Potassium	97.3	98.0	P/P	90 - 110
Sodium	100	101	P/P	90 - 110
Zinc	99.8	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98011

Included Lab Sample IDs: 2160715, 2160716

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98012

Included Lab Sample IDs: 2160715, 2160716, 2160717, 2160718, 2160724

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98029

Included Lab Sample IDs: 2160738

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	102	P/P	90 - 110
Antimony	96.9	96.0	P/P	90 - 110
Arsenic	101	99.3	P/P	90 - 110
Boron	98.7	99.8	P/P	90 - 110
Cadmium	99.6	101	P/P	90 - 110
Chromium	101	101	P/P	90 - 110
Copper	102	101	P/P	90 - 110
Lead	100	101	P/P	90 - 110
Nickel	104	101	P/P	90 - 110
Selenium	101	103	P/P	90 - 110
Silver	99.6	98.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98029

Included Lab Sample IDs: 2160738

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	97.5	98.2	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A98059

Included Lab Sample IDs: 2160711, 2160712, 2160713, 2160714, 2160723

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98070

Included Lab Sample IDs: 2160717, 2160718, 2160724

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

Reference Method: SM 2320 B-2011

Run ID: A98082

Included Lab Sample IDs: 2160711, 2160712, 2160713, 2160714, 2160723

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.6	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					3.81	
EPA 200.7 Rev. 4.4	Barium	99.2	97.0	98.6	98.8		0.232
	Calcium	101	97.6	101			0.0006
	Iron	99.0	100	102	102		0.371
	Magnesium	105	101	105			1.08
	Potassium	100	94.7	110	111		1.00
	Sodium	104	103	107			0.0555
	Zinc	100	100	100	101		0.847
EPA 200.8 Rev. 5.4	Aluminum	101	95.7	95.9	100		4.16
	Antimony	96.7	98.8	96.0	99.0		3.05
	Arsenic	98.8	102	103	101		1.29
	Boron	99.7	98.8	95.9	96.7		0.683
	Cadmium	99.5	104	100	103		2.85
	Chromium	103	107	103	104		1.17
	Copper	102	100	98.3	101		2.59
	Lead	98.5	99.5	95.3	99.0		3.82
	Nickel	100	99.5	96.5	99.6		3.22
	Selenium	98.6	99.9	101	98.7		1.80
	Silver	102	101	102	102		0.159
	Thallium	101	104	101	106		5.28
EPA 300.0 Rev. 2.1	Chloride	98.8	97.1	99.5		1.39	
	Chloride	100	103	100		0.387	
	Sulfate	101	99.8	100		1.09	
	Sulfate	97.9	102	99.7		0.903	
EPA 350.1 Rev. 2.0	Ammonia-N	100	101	102			0.881
	Ammonia-N	101	99.8	99.7			0.132
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.6	107	106			0.938
	Kjeldahl Nitrogen	101	97.2	94.7			1.58
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	98.5	99.0			0.320
	NO ₂ NO ₃ -N	100	99.2	99.2			0.0
EPA 365.1 Rev. 2.0	Total-P	104	103	106			2.40
	Total-P	104	104	105			0.638
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6	96.2	98.0			1.51
SM 2120 B-2011	Color (true)	98.8				0.281	
SM 2320 B-2011	Total Alkalinity	103				0.124	
SM 2540 C-2011	TDS					4.34	
SM 2540 D-2011	TSS					3.39	
SM 4500 F-C-2011	Fluoride	101	103	105			0.960
SM 5310 B-2011	Organic Carbon	95.6	96.6	97.2			0.374
	Organic Carbon	97.4	104				1.05

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2160711, 2160712, 2160713, 2160714, 2160723
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2160738
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2160738
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2160711, 2160712, 2160713, 2160714, 2160723
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2160711, 2160712, 2160713, 2160714, 2160723

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2160715, 2160716, 2160717, 2160718, 2160724
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2160715, 2160716, 2160717, 2160718, 2160724
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2160715, 2160716, 2160717, 2160718, 2160724
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2160715, 2160716, 2160717, 2160718, 2160724
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2160719, 2160720, 2160721, 2160722, 2160725
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2160711, 2160712, 2160713, 2160714, 2160723
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2160711, 2160712, 2160713, 2160714, 2160723
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2160738
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2160711, 2160712, 2160713, 2160714, 2160723
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2160711, 2160712, 2160713, 2160714, 2160723
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2160711, 2160712, 2160713, 2160714, 2160723
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2160715, 2160716, 2160717, 2160718, 2160724

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	02/26/2020			02/26/2020 15:06	Blanca Fach	2160711, 2160712, 2160713, 2160714, 2160723
EPA 200.7 Rev. 4.4	02/26/2020	03/03/2020 15:15	Elliott D. Healy	03/04/2020 16:57	Betina Topolski	2160738
EPA 200.8 Rev. 5.4	02/26/2020	03/03/2020 15:15	Elliott D. Healy	03/05/2020 16:19	Alexander Thompson	2160738
EPA 300.0 Rev. 2.1	02/26/2020			03/05/2020 19:56	Lipi Saha	2160712
	02/26/2020			03/05/2020 23:32	Lipi Saha	2160711
	02/26/2020			03/05/2020 23:44	Lipi Saha	2160713
	02/26/2020			03/05/2020 23:56	Lipi Saha	2160714
	02/26/2020			03/06/2020 03:09	Lipi Saha	2160723
EPA 350.1 Rev. 2.0	02/26/2020			03/02/2020 13:51	Ping Hua	2160715
	02/26/2020			03/02/2020 13:52	Ping Hua	2160716
	02/26/2020			03/04/2020 11:15	Ping Hua	2160717
	02/26/2020			03/04/2020 11:22	Ping Hua	2160718
	02/26/2020			03/04/2020 11:24	Ping Hua	2160724
EPA 351.2 Rev. 2.0	02/26/2020	03/02/2020 14:35	Sima Feizi	03/03/2020 13:15	Jhamieka S. Greenwood	2160715
	02/26/2020	03/02/2020 14:35	Sima Feizi	03/03/2020 13:16	Jhamieka S. Greenwood	2160716
	02/26/2020	03/02/2020 14:35	Sima Feizi	03/03/2020 13:18	Jhamieka S. Greenwood	2160717
	02/26/2020	03/02/2020 14:35	Sima Feizi	03/03/2020 13:30	Jhamieka S. Greenwood	2160718
	02/26/2020	03/02/2020 14:35	Sima Feizi	03/03/2020 13:32	Jhamieka S. Greenwood	2160724
EPA 353.2 Rev. 2.0	02/26/2020			03/05/2020 10:47	Beverly Y. Sanders	2160715
	02/26/2020			03/05/2020 10:48	Beverly Y. Sanders	2160716
	02/26/2020			03/05/2020 10:56	Beverly Y. Sanders	2160717
	02/26/2020			03/05/2020 11:01	Beverly Y. Sanders	2160718
	02/26/2020			03/05/2020 11:03	Beverly Y. Sanders	2160724
EPA 365.1 Rev. 2.0	02/26/2020	03/04/2020 13:06	Yen Ta	03/05/2020 12:43	Benjamin T. Nordmann	2160715
	02/26/2020	03/04/2020 13:06	Yen Ta	03/05/2020 12:44	Benjamin T. Nordmann	2160716
	02/26/2020	03/05/2020 13:48	Yen Ta	03/06/2020 14:05	Benjamin T. Nordmann	2160717
	02/26/2020	03/05/2020 13:48	Yen Ta	03/06/2020 14:10	Benjamin T. Nordmann	2160718
	02/26/2020	03/05/2020 13:48	Yen Ta	03/06/2020 14:13	Benjamin T. Nordmann	2160724
EPA 365.1 Rev. 2.0 dissolved	02/26/2020			02/26/2020 17:31	Carlos Miranda	2160720
	02/26/2020			02/26/2020 17:37	Carlos Miranda	2160719
	02/26/2020			02/26/2020 17:38	Carlos Miranda	2160721
	02/26/2020			02/26/2020 17:43	Carlos Miranda	2160722
	02/26/2020			02/26/2020 17:44	Carlos Miranda	2160725
SM 2120 B-2011	02/26/2020			02/26/2020 14:43	Madeline Funaro	2160711
	02/26/2020			02/26/2020 14:44	Madeline Funaro	2160712
	02/26/2020			02/26/2020 14:45	Madeline Funaro	2160713
	02/26/2020			02/26/2020 14:46	Madeline Funaro	2160714
	02/26/2020			02/26/2020 14:47	Madeline Funaro	2160723
SM 2320 B-2011	02/26/2020			03/09/2020 22:38	Lauren Lees	2160714

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-2011	02/26/2020			03/09/2020 23:15	Lauren Lees	2160711
	02/26/2020			03/09/2020 23:26	Lauren Lees	2160712
	02/26/2020			03/09/2020 23:37	Lauren Lees	2160713
	02/26/2020			03/09/2020 23:48	Lauren Lees	2160723
SM 2340B	02/26/2020			03/04/2020 16:57	Betina Topolski	2160738
SM 2540 C-2011	02/26/2020			03/02/2020 15:08	Yijie Li	2160711, 2160712, 2160713, 2160714, 2160723
SM 2540 D-2011	02/26/2020			03/02/2020 14:22	Yijie Li	2160711, 2160712, 2160713, 2160714, 2160723
SM 4500 F-C-2011	02/26/2020			03/07/2020 09:43	Samantha Davila	2160711
	02/26/2020			03/07/2020 09:57	Samantha Davila	2160712
	02/26/2020			03/07/2020 10:09	Samantha Davila	2160713
	02/26/2020			03/07/2020 10:23	Samantha Davila	2160714
	02/26/2020			03/07/2020 10:36	Samantha Davila	2160723
SM 5310 B-2011	02/26/2020			03/02/2020 21:12	Lauren Lees	2160715
	02/26/2020			03/02/2020 21:25	Lauren Lees	2160716
	02/26/2020			03/02/2020 21:39	Lauren Lees	2160717
	02/26/2020			03/02/2020 22:23	Lauren Lees	2160718
	02/26/2020			03/02/2020 23:48	Lauren Lees	2160724