

Chemical Analysis Report

SE-DIST-2020-02-07-02

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

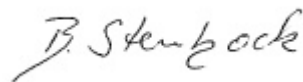
Event Description: **SMP-Palm Beach**
Request ID: **RQ-2020-01-20-25**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 02-MAR-2020 17:50



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: Lake Clarke Center

Collection Date/Time: 02/06/2020 11:30

Field ID: G3SE0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155659	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P378528	
	EPA 300.0 Rev. 2.1	Chloride	55		mg Cl/L	P379491	
		Sulfate	22		mg SO4/L	P379494	
	SM 2120 B-2011	Color (true)	38	A	PCU	P378527	
	SM 2320 B-2011	Total Alkalinity	191		mg CaCO3/L	P378741	
	SM 2540 C-2011	TDS	342		mg/L	P379350	
	SM 2540 D-2011	TSS	4	I	mg/L	P379041	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P378745	
2155660	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P379056	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.85		mg N/L	P379054	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.083		mg N/L	P379020	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P379045	
	SM 5310 B-2011	Organic Carbon	10		mg C/L	P378684	
2155661	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P378530	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Pine Lake Center

Collection Date/Time: 02/06/2020 12:50

Field ID: G3SE0045

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155665	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P378528	
	EPA 300.0 Rev. 2.1	Chloride	32		mg Cl/L	P379491	
		Sulfate	13		mg SO4/L	P379494	
	SM 2120 B-2011	Color (true)	30		PCU	P378527	
	SM 2320 B-2011	Total Alkalinity	146		mg CaCO3/L	P378741	
	SM 2540 C-2011	TDS	251		mg/L	P379350	
	SM 2540 D-2011	TSS	8	I	mg/L	P379041	
	SM 4500 F-C-2011	Fluoride	0.098	I	mg F/L	P378745	
2155666	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P379059	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P379054	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P379020	
	EPA 365.1 Rev. 2.0	Total-P	0.055		mg P/L	P379088	
	SM 5310 B-2011	Organic Carbon	8.2		mg C/L	P378684	
2155667	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P378530	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: C-17 @ 45th

Collection Date/Time: 02/06/2020 13:25

Field ID: G3SE0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155653	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P378528	
	EPA 300.0 Rev. 2.1	Chloride	42		mg Cl/L	P379491	
		Sulfate	14		mg SO4/L	P379494	
	SM 2120 B-2011	Color (true)	40		PCU	P378527	
	SM 2320 B-2011	Total Alkalinity	160		mg CaCO3/L	P378741	
	SM 2540 C-2011	TDS	283		mg/L	P379350	
	SM 2540 D-2011	TSS	6	I	mg/L	P379041	
	SM 4500 F-C-2011	Fluoride	0.092	I	mg F/L	P378745	
2155654	EPA 350.1 Rev. 2.0	Ammonia-N	0.099		mg N/L	P379056	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P379054	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P379019	
	EPA 365.1 Rev. 2.0	Total-P	0.060		mg P/L	P378914	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P378684	
2155655	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P378530	
2155697	EPA 200.7 Rev. 4.4	Barium	17.3		ug/L	P378666	
		Calcium	68.4		mg/L	P378666	
		Iron	250		ug/L	P378666	
		Magnesium	4.56		mg/L	P378666	
		Potassium	3.5		mg/L	P378666	
		Sodium	27.7		mg/L	P378666	
		Zinc	5.0	U	ug/L	P378666	
	EPA 200.8 Rev. 5.4	Aluminum	90		ug/L	P378666	
		Antimony	0.20		ug/L	P378666	
		Arsenic	1.58		ug/L	P378666	
		Boron**	38.6		ug/L	P378666	
		Cadmium	0.020	U	ug/L	P378666	
		Chromium	0.57	I	ug/L	P378666	
		Copper	2.07		ug/L	P378666	
		Lead	0.45		ug/L	P378666	
		Nickel	0.50	U	ug/L	P378666	
		Selenium	0.20	U	ug/L	P378666	
		Silver	0.010	U	ug/L	P378666	
		Thallium	0.10	U	ug/L	P378666	
	SM 2340B	Hardness	190		mg/L	P378666	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: C-17 @ 45th

Collection Date/Time: 02/06/2020 13:35

Field ID: FB_02062020

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155668	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P378528	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P379491	
		Sulfate	0.20	U	mg SO4/L	P379494	
		Color (true)	2.5	U	PCU	P378527	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P378741	
	SM 2540 C-2011	TDS	15	U	mg/L	P379350	
	SM 2540 D-2011	TSS	2	U	mg/L	P379041	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P378745	
2155669	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P379059	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P379054	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P379020	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P379088	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P378684	
2155670	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P378530	
2155699	EPA 200.7 Rev. 4.4	Barium	1.0	U	ug/L	P378666	
		Calcium	0.075	U	mg/L	P378666	
		Iron	30	U	ug/L	P378666	
		Magnesium	0.040	U	mg/L	P378666	
		Potassium	0.30	U	mg/L	P378666	
		Sodium	0.50	U	mg/L	P378666	
		Zinc	5.0	U	ug/L	P378666	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P378666	
		Antimony	0.050	U	ug/L	P378666	
		Arsenic	0.050	U	ug/L	P378666	
		Boron**	2.0	U	ug/L	P378666	
		Cadmium	0.020	U	ug/L	P378666	
		Chromium	0.40	U	ug/L	P378666	
		Copper	0.40	U	ug/L	P378666	
		Lead	0.20	U	ug/L	P378666	
		Nickel	0.50	U	ug/L	P378666	
		Selenium	0.20	U	ug/L	P378666	
		Silver	0.010	U	ug/L	P378666	
		Thallium	0.10	U	ug/L	P378666	
		Hardness	0.35	U	mg/L	P378666	
	SM 2340B						

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Lake Mangonia North

Collection Date/Time: 02/06/2020 14:00

Field ID: G3SE0030

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155662	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P378528	
	EPA 300.0 Rev. 2.1	Chloride	46		mg Cl/L	P379491	
		Sulfate	17		mg SO4/L	P379494	
	SM 2120 B-2011	Color (true)	30		PCU	P378527	
	SM 2320 B-2011	Total Alkalinity	100	A	mg CaCO3/L	P378741	
	SM 2540 C-2011	TDS	235		mg/L	P379350	
	SM 2540 D-2011	TSS	7	I	mg/L	P379041	
	SM 4500 F-C-2011	Fluoride	0.12		mg F/L	P378745	
2155663	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P379056	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P379054	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P379020	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P379088	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P378684	
2155664	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P378530	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: M-Canal @ Haverhill

Collection Date/Time: 02/06/2020 15:00

Field ID: G3SE0029

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2155656	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P378528	
	EPA 300.0 Rev. 2.1	Chloride	66		mg Cl/L	P379491	
		Sulfate	22		mg SO4/L	P379494	
		Color (true)	39		PCU	P378527	
	SM 2320 B-2011	Total Alkalinity	140		mg CaCO3/L	P378741	
	SM 2540 C-2011	TDS	329		mg/L	P379350	
	SM 2540 D-2011	TSS	5	I	mg/L	P379041	
	SM 4500 F-C-2011	Fluoride	0.17		mg F/L	P378745	
2155657	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P379056	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.83		mg N/L	P379054	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P379020	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P379045	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P378684	
2155658	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P378530	
2155698	EPA 200.7 Rev. 4.4	Barium	22.4		ug/L	P378666	
		Calcium	53.8		mg/L	P378666	
		Iron	100	I	ug/L	P378666	
		Magnesium	9.25		mg/L	P378666	
		Potassium	4.5		mg/L	P378666	
		Sodium	44.1		mg/L	P378666	
		Zinc	5.0	U	ug/L	P378666	
	EPA 200.8 Rev. 5.4	Aluminum	62		ug/L	P378666	
		Antimony	0.10	I	ug/L	P378666	
		Arsenic	0.86		ug/L	P378666	
		Boron**	58.1		ug/L	P378666	
		Cadmium	0.020	U	ug/L	P378666	
		Chromium	0.40	U	ug/L	P378666	
		Copper	0.86		ug/L	P378666	
		Lead	0.20	U	ug/L	P378666	
		Nickel	0.50	U	ug/L	P378666	
		Selenium	0.20	U	ug/L	P378666	
		Silver	0.010	U	ug/L	P378666	
		Thallium	0.10	U	ug/L	P378666	
		Hardness	172		mg/L	P378666	
	SM 2340B						

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P378528

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P378666

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: P378666

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: P379491

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379494

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379056

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379059

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379054

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379019

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379020

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378914

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379045

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379088

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378530

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

Reference Method: SM 2120 B-2011
Batch ID: P378527

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P378741

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

Reference Method: SM 2540 C-2011
Batch ID: P379350

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P379041

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P378745

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P378684

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: P378666

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	104		P	85 - 115
Calcium	105		P	85 - 115
Iron	108		P	85 - 115
Magnesium	110		P	85 - 115
Potassium	106		P	85 - 115
Sodium	104		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P378666

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	106		P	85 - 115
Arsenic	103		P	85 - 115
Boron	102		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	98.2		P	85 - 115
Copper	101		P	85 - 115
Lead	98.6		P	85 - 115
Nickel	100		P	85 - 115
Selenium	101		P	85 - 115
Silver	104		P	85 - 115
Thallium	96.8		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379491

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379494

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379056

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379059

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379054

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	92.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379019

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: P379020

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: P378914

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379045

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379088

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378530

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

Reference Method: SM 2120 B-2011
Batch ID: P378527

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

Reference Method: SM 2320 B-2011
Batch ID: P378741

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P378745

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

Reference Method: SM 5310 B-2011
Batch ID: P378684

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P378666

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156164	Barium	102		P	80 - 120
2156164	Calcium	105		P	80 - 120
2156164	Iron	105		P	80 - 120
2156164	Magnesium	104		P	80 - 120
2156164	Potassium	102		P	80 - 120
2156164	Sodium	104		P	80 - 120
2156164	Zinc	103		P	80 - 120
2156185	Barium	99.3	101	P/P	80 - 120
2156185	Calcium	96.5		P	80 - 120
2156185	Iron	103	104	P/P	80 - 120
2156185	Magnesium	100	102	P/P	80 - 120
2156185	Potassium	102	102	P/P	80 - 120
2156185	Sodium	101		P	80 - 120
2156185	Zinc	98.0	100	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P378666

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156164	Aluminum	101		P	80 - 120
2156164	Antimony	107		P	80 - 120
2156164	Arsenic	108		P	80 - 120
2156164	Boron	102		P	80 - 120
2156164	Cadmium	104		P	80 - 120
2156164	Chromium	99.8		P	80 - 120
2156164	Copper	102		P	80 - 120
2156164	Lead	99.3		P	80 - 120
2156164	Nickel	100		P	80 - 120
2156164	Selenium	104		P	80 - 120
2156164	Silver	103		P	80 - 120
2156164	Thallium	96.5		P	80 - 120
2156185	Aluminum	98.4	101	P/P	80 - 120
2156185	Antimony	106	108	P/P	80 - 120
2156185	Arsenic	103	106	P/P	80 - 120
2156185	Boron	102	104	P/P	80 - 120
2156185	Cadmium	103	105	P/P	80 - 120
2156185	Chromium	97.6	99.9	P/P	80 - 120
2156185	Copper	99.4	102	P/P	80 - 120
2156185	Lead	97.6	98.5	P/P	80 - 120
2156185	Nickel	98.3	98.5	P/P	80 - 120
2156185	Selenium	101	103	P/P	80 - 120
2156185	Silver	103	104	P/P	80 - 120
2156185	Thallium	95.0	97.0	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379491

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155348	Chloride	100		P	90 - 110
2156149	Chloride	104		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155348	Sulfate	99.9		P	90 - 110
2156149	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379056

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155657	Ammonia-N	99.7	99.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379059

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155666	Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379054

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155354	Kjeldahl Nitrogen	107	98.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379019

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155350	NO2NO3-N	99.5	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379020

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155657	NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378914

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155299	Total-P	107	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379045

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154312	Total-P	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379088

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155663	Total-P	106	105	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378530

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155655	O-Phosphate-P	95.8	96.2	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P378745

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155662	Fluoride	99.0	99.6	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P378684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155352	Organic Carbon	102	103	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P378528

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155752	Turbidity	3.32	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P378666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156185	Barium	2.13	Spike	P	0 - 20
2156185	Calcium	0.409	Spike	P	0 - 20
2156185	Iron	0.442	Spike	P	0 - 20
2156185	Magnesium	0.726	Spike	P	0 - 20
2156185	Potassium	0.000413	Spike	P	0 - 20
2156185	Sodium	0.131	Spike	P	0 - 20
2156185	Zinc	2.28	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P378666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156185	Aluminum	2.72	Spike	P	0 - 20
2156185	Antimony	1.81	Spike	P	0 - 20
2156185	Arsenic	2.36	Spike	P	0 - 20
2156185	Boron	2.39	Spike	P	0 - 20
2156185	Cadmium	2.04	Spike	P	0 - 20
2156185	Chromium	2.25	Spike	P	0 - 20
2156185	Copper	2.51	Spike	P	0 - 20
2156185	Lead	0.946	Spike	P	0 - 20
2156185	Nickel	0.206	Spike	P	0 - 20
2156185	Selenium	1.58	Spike	P	0 - 20
2156185	Silver	1.17	Spike	P	0 - 20
2156185	Thallium	2.11	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379491

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155348	Chloride	0.503	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155348	Sulfate	1.07	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155657	Ammonia-N	0.132	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379059

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155666	Ammonia-N	1.45	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155354	Kjeldahl Nitrogen	4.71	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155350	NO2NO3-N	1.01	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379020

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155657	NO2NO3-N	0.501	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155299	Total-P	0.600	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379045

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154312	Total-P	0.0440	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155663	Total-P	0.807	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P378530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155655	O-Phosphate-P	0.386	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
 Batch ID: P378527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155659	Color (true)	1.63	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
 Batch ID: P378741

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155662	Total Alkalinity	0.340	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
 Batch ID: P379350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155349	TDS	2.76	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
 Batch ID: P378745

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155662	Fluoride	0.467	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
 Batch ID: P378684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155352	Organic Carbon	0.509	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: A97394

Included Lab Sample IDs: 2155653, 2155656, 2155659, 2155662, 2155665, 2155668

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.5	103	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97395

Included Lab Sample IDs: 2155653, 2155656, 2155659, 2155662, 2155665, 2155668

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97396

Included Lab Sample IDs: 2155655, 2155658, 2155661, 2155664, 2155667, 2155670

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.2	95.5	P/P	90 - 110
O-Phosphate-P	97.5	97.2	P/P	90 - 110
O-Phosphate-P	97.7	97.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A97440

Included Lab Sample IDs: 2155654, 2155657, 2155660, 2155663, 2155666, 2155669

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.9	99.4	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A97465

Included Lab Sample IDs: 2155653, 2155656, 2155659, 2155662, 2155665, 2155668

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	100	P/P	90 - 110
Total Alkalinity	99.8	103	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A97465

Included Lab Sample IDs: 2155653, 2155656, 2155659, 2155662, 2155665, 2155668

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	95.4	P/P	90 - 110
Fluoride	99.5	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A97493

Included Lab Sample IDs: 2155697, 2155698, 2155699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	103	103	P/P	90 - 110
Barium	104	103	P/P	90 - 110
Calcium	102	102	P/P	90 - 110
Calcium	102	102	P/P	90 - 110
Iron	103	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A97493

Included Lab Sample IDs: 2155697, 2155698, 2155699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	104	104	P/P	90 - 110
Magnesium	103	103	P/P	90 - 110
Magnesium	103	103	P/P	90 - 110
Potassium	102	102	P/P	90 - 110
Potassium	102	103	P/P	90 - 110
Sodium	101	102	P/P	90 - 110
Sodium	102	103	P/P	90 - 110
Zinc	103	104	P/P	90 - 110
Zinc	105	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97543

Included Lab Sample IDs: 2155654

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97576

Included Lab Sample IDs: 2155654, 2155657, 2155660, 2155663, 2155666, 2155669

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97585

Included Lab Sample IDs: 2155654, 2155657, 2155660, 2155663, 2155666, 2155669

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97630

Included Lab Sample IDs: 2155666

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97637

Included Lab Sample IDs: 2155697, 2155698, 2155699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	101	P/P	90 - 110
Antimony	103	104	P/P	90 - 110
Arsenic	102	102	P/P	90 - 110
Boron	103	107	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97637

Included Lab Sample IDs: 2155697, 2155698, 2155699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	96.3	96.5	P/P	90 - 110
Chromium	100	96.3	P/P	90 - 110
Copper	101	102	P/P	90 - 110
Lead	92.6	94.2	P/P	90 - 110
Selenium	100	98.6	P/P	90 - 110
Silver	98.6	98.7	P/P	90 - 110
Thallium	92.6	95.7	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A97638

Included Lab Sample IDs: 2155653, 2155656, 2155659, 2155662, 2155665, 2155668

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.1	98.4	P/P	90 - 110
Chloride	98.4	98.4	P/P	90 - 110
Sulfate	98.5	99.2	P/P	90 - 110
Sulfate	99.2	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97643

Included Lab Sample IDs: 2155657, 2155660, 2155663, 2155669

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	104	P/P	90 - 110
Total-P	104	106	P/P	90 - 110
Total-P	106	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97690

Included Lab Sample IDs: 2155654, 2155657, 2155660, 2155663, 2155666, 2155669

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.9	99.7	P/P	90 - 110
Kjeldahl Nitrogen	99.7	98.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97713

Included Lab Sample IDs: 2155697, 2155698, 2155699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	96.8	93.0	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	
								LCS	MS
EPA 180.1 Rev. 2.0	Turbidity							3.32	
EPA 200.7 Rev. 4.4	Barium	104	102	99.3	101				2.13
	Calcium	105	105	96.5					0.409
	Iron	108	105	103	104				0.442
	Magnesium	110	104	100	102				0.726
	Potassium	106	102	102	102				0.0004
	Sodium	104	104	101					0.131
	Zinc	103	103	98.0	100				2.28
EPA 200.8 Rev. 5.4	Aluminum	102	98.4	101	101				2.72
	Antimony	106	106	108	107				1.81
	Arsenic	103	103	106	108				2.36
	Boron	102	102	104	102				2.39
	Cadmium	102	103	105	104				2.04
	Chromium	98.2	97.6	99.9	99.8				2.25
	Copper	101	99.4	102	102				2.51
	Lead	98.6	97.6	98.5	99.3				0.946
	Nickel	100	98.3	98.5	100				0.206
	Selenium	101	101	103	104				1.58
	Silver	104	103	104	103				1.17
	Thallium	96.8	95.0	97.0	96.5				2.11
EPA 300.0 Rev. 2.1	Chloride	99.2	100	104				0.503	
	Sulfate	99.8	99.9	100				1.07	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	99.7	99.9					0.132
	Ammonia-N	100	102	103					1.45
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	92.0	107	98.9					4.71
EPA 353.2 Rev. 2.0	NO2NO3-N	100	99.5	98.5					1.01
	NO2NO3-N	100	100	99.5					0.501
EPA 365.1 Rev. 2.0	Total-P	106	107	106					0.600
	Total-P	107	106	106					0.0440
	Total-P	105	106	105					0.807
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6	95.8	96.2					0.386
SM 2120 B-2011	Color (true)	99.8						1.63	
SM 2320 B-2011	Total Alkalinity	102						0.340	
SM 2540 C-2011	TDS							2.76	
SM 4500 F-C-2011	Fluoride	96.5	99.0	99.6					0.467
SM 5310 B-2011	Organic Carbon	98.8	102	103					0.509

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2155653, 2155656, 2155659, 2155662, 2155665, 2155668
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2155697, 2155698, 2155699
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2155697, 2155698, 2155699
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2155653, 2155656, 2155659, 2155662, 2155665, 2155668
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2155653, 2155656, 2155659, 2155662, 2155665, 2155668
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2155654, 2155657, 2155660, 2155663, 2155666, 2155669
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2155654, 2155657, 2155660, 2155663, 2155666, 2155669

Reference Method Descriptions

Method	Description	Associated Samples
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2155654, 2155657, 2155660, 2155663, 2155666, 2155669
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2155654, 2155657, 2155660, 2155663, 2155666, 2155669
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2155655, 2155658, 2155661, 2155664, 2155667, 2155670
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2155653, 2155656, 2155659, 2155662, 2155665, 2155668
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2155653, 2155656, 2155659, 2155662, 2155665, 2155668
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2155697, 2155698, 2155699
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2155653, 2155656, 2155659, 2155662, 2155665, 2155668
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2155653, 2155656, 2155659, 2155662, 2155665, 2155668
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2155653, 2155656, 2155659, 2155662, 2155665, 2155668
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2155654, 2155657, 2155660, 2155663, 2155666, 2155669

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	02/07/2020			02/07/2020 15:07	Yen Ta	2155653, 2155656, 2155659, 2155662, 2155665, 2155668
EPA 200.7 Rev. 4.4	02/07/2020	02/11/2020 14:00	Elliott D. Healy	02/12/2020 14:08	Betina Topolski	2155699
	02/07/2020	02/11/2020 14:00	Elliott D. Healy	02/12/2020 16:07	Betina Topolski	2155697
	02/07/2020	02/11/2020 14:00	Elliott D. Healy	02/12/2020 16:15	Betina Topolski	2155698
EPA 200.8 Rev. 5.4	02/07/2020	02/11/2020 14:00	Elliott D. Healy	02/19/2020 00:24	Justin Cutchin	2155699
	02/07/2020	02/11/2020 14:00	Elliott D. Healy	02/19/2020 01:01	Justin Cutchin	2155697
	02/07/2020	02/11/2020 14:00	Elliott D. Healy	02/19/2020 01:11	Justin Cutchin	2155698
	02/07/2020	02/11/2020 14:00	Elliott D. Healy	02/21/2020 01:35	Justin Cutchin	2155697
	02/07/2020	02/11/2020 14:00	Elliott D. Healy	02/21/2020 01:42	Justin Cutchin	2155698
	02/07/2020	02/11/2020 14:00	Elliott D. Healy	02/21/2020 01:49	Justin Cutchin	2155699
EPA 300.0 Rev. 2.1	02/07/2020			02/20/2020 22:35	Elliott Rodriguez	2155653
	02/07/2020			02/20/2020 22:47	Elliott Rodriguez	2155656
	02/07/2020			02/20/2020 22:59	Elliott Rodriguez	2155659
	02/07/2020			02/20/2020 23:11	Elliott Rodriguez	2155662
	02/07/2020			02/20/2020 23:48	Elliott Rodriguez	2155665
	02/07/2020			02/21/2020 00:00	Elliott Rodriguez	2155668
EPA 350.1 Rev. 2.0	02/07/2020			02/14/2020 11:15	Ping Hua	2155654
	02/07/2020			02/14/2020 11:22	Ping Hua	2155657
	02/07/2020			02/14/2020 11:24	Ping Hua	2155660
	02/07/2020			02/14/2020 11:25	Ping Hua	2155663
	02/07/2020			02/14/2020 12:31	Ping Hua	2155666
	02/07/2020			02/14/2020 12:43	Ping Hua	2155669
EPA 351.2 Rev. 2.0	02/07/2020	02/18/2020 11:20	Sima Feizi	02/20/2020 14:39	Jhamieka S. Greenwood	2155654
	02/07/2020	02/18/2020 11:20	Sima Feizi	02/20/2020 14:44	Jhamieka S. Greenwood	2155657
	02/07/2020	02/18/2020 11:20	Sima Feizi	02/20/2020 14:45	Jhamieka S. Greenwood	2155660
	02/07/2020	02/18/2020 11:20	Sima Feizi	02/20/2020 14:47	Jhamieka S. Greenwood	2155663
	02/07/2020	02/18/2020 11:20	Sima Feizi	02/20/2020 14:48	Jhamieka S. Greenwood	2155666
	02/07/2020	02/18/2020 11:20	Sima Feizi	02/20/2020 14:50	Jhamieka S. Greenwood	2155669
EPA 353.2 Rev. 2.0	02/07/2020			02/17/2020 10:33	Beverly Y. Sanders	2155654
	02/07/2020			02/17/2020 10:40	Beverly Y. Sanders	2155657
	02/07/2020			02/17/2020 10:46	Beverly Y. Sanders	2155660
	02/07/2020			02/17/2020 10:48	Beverly Y. Sanders	2155663
	02/07/2020			02/17/2020 10:49	Beverly Y. Sanders	2155666
	02/07/2020			02/17/2020 10:50	Beverly Y. Sanders	2155669
EPA 365.1 Rev. 2.0	02/07/2020	02/13/2020 13:46	Yen Ta	02/14/2020 11:25	Benjamin T. Nordmann	2155654
	02/07/2020	02/17/2020 17:00	Yen Ta	02/18/2020 16:42	Benjamin T. Nordmann	2155657
	02/07/2020	02/17/2020 17:00	Yen Ta	02/18/2020 16:43	Benjamin T. Nordmann	2155660
	02/07/2020	02/17/2020 17:00	Yen Ta	02/18/2020 17:39	Benjamin T. Nordmann	2155669
	02/07/2020	02/17/2020 17:00	Yen Ta	02/18/2020 17:50	Benjamin T. Nordmann	2155663

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0	02/07/2020	02/17/2020 17:00	Yen Ta	02/18/2020 18:05	Benjamin T. Nordmann	2155666
EPA 365.1 Rev. 2.0 dissolved	02/07/2020			02/07/2020 16:41	Carlos Miranda	2155655
	02/07/2020			02/07/2020 16:48	Carlos Miranda	2155670
	02/07/2020			02/07/2020 17:03	Carlos Miranda	2155658
	02/07/2020			02/07/2020 17:04	Carlos Miranda	2155661, 2155664
	02/07/2020			02/07/2020 17:05	Carlos Miranda	2155667
SM 2120 B-2011	02/07/2020			02/07/2020 15:59	Madeline Funaro	2155653
	02/07/2020			02/07/2020 16:00	Madeline Funaro	2155656
	02/07/2020			02/07/2020 16:02	Madeline Funaro	2155659, 2155662
	02/07/2020			02/07/2020 16:03	Madeline Funaro	2155665
	02/07/2020			02/07/2020 16:04	Madeline Funaro	2155668
SM 2320 B-2011	02/07/2020			02/10/2020 18:48	Dale L. Simmons	2155662
	02/07/2020			02/10/2020 20:56	Dale L. Simmons	2155653
	02/07/2020			02/10/2020 21:08	Dale L. Simmons	2155656
	02/07/2020			02/10/2020 21:21	Dale L. Simmons	2155659
	02/07/2020			02/10/2020 21:34	Dale L. Simmons	2155665
	02/07/2020			02/10/2020 21:48	Dale L. Simmons	2155668
SM 2340B	02/07/2020			02/12/2020 14:08	Betina Topolski	2155699
	02/07/2020			02/12/2020 16:07	Betina Topolski	2155697
	02/07/2020			02/12/2020 16:15	Betina Topolski	2155698
SM 2540 C-2011	02/07/2020			02/11/2020 15:30	Sima Feizi	2155653, 2155656, 2155659, 2155662, 2155665, 2155668
SM 2540 D-2011	02/07/2020			02/11/2020 15:30	Sima Feizi	2155653, 2155656, 2155659, 2155662, 2155665, 2155668
SM 4500 F-C-2011	02/07/2020			02/10/2020 18:38	Dale L. Simmons	2155662
	02/07/2020			02/10/2020 20:56	Dale L. Simmons	2155653
	02/07/2020			02/10/2020 21:08	Dale L. Simmons	2155656
	02/07/2020			02/10/2020 21:21	Dale L. Simmons	2155659
	02/07/2020			02/10/2020 21:34	Dale L. Simmons	2155665
	02/07/2020			02/10/2020 21:48	Dale L. Simmons	2155668
SM 5310 B-2011	02/07/2020			02/11/2020 04:43	Madeline Funaro	2155654
	02/07/2020			02/11/2020 04:55	Madeline Funaro	2155657
	02/07/2020			02/11/2020 05:09	Madeline Funaro	2155660
	02/07/2020			02/11/2020 05:24	Madeline Funaro	2155663
	02/07/2020			02/11/2020 05:36	Madeline Funaro	2155666
	02/07/2020			02/11/2020 05:48	Madeline Funaro	2155669