

Chemical Analysis Report

WAS-SECT-2020-09-08-01

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

Event Description: **Merritts Mill Pond BMAP**

Request ID: **RQ-2020-06-08-02**

Customer: **WAS-SECT**

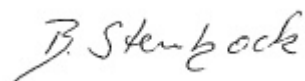
Project ID: **BMAP**

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Date Certified: 29-SEP-2020 18:56



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: Merritt's Mill Pond 600 Meters Downstream Of Jackson Blue Sp **Collection Date/Time: 09/08/2020 11:08**

Field ID: G2WA0007

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2194752	EPA 180.1 Rev. 2.0	Turbidity	0.45		NTU	P387155	
	EPA 300.0 Rev. 2.1	Chloride	4.8		mg Cl/L	P387331	
		Sulfate	1.3		mg SO4/L	P387334	
	SM 2120 B-2011	Color (true)	2.5	UA	PCU	P387168	
	SM 2320 B-2011	Total Alkalinity	118		mg CaCO3/L	P387255	
	SM 2540 C-2011	TDS	174		mg/L	P387620	
	SM 2540 D-2011	TSS	2	U	mg/L	P387624	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P387506	
2194756	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P387297	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.088	I	mg N/L	P387212	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	3.6		mg N/L	P387182	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P387765	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P387314	
2194760	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P387162	
2194768	EPA 200.7 Rev. 4.4	Barium	5.9		ug/L	P387343	
		Calcium	50.4		mg/L	P387343	
		Iron	30	U	ug/L	P387343	
		Magnesium	2.45		mg/L	P387343	
		Potassium	0.40	I	mg/L	P387343	
		Sodium	1.9	I	mg/L	P387343	
		Zinc	5.0	U	ug/L	P387343	
		Aluminum	5.0	U	ug/L	P387343	
		Antimony	0.050	U	ug/L	P387343	
		Arsenic	0.22		ug/L	P387343	
	EPA 200.8 Rev. 5.4	Boron**	7.9	I	ug/L	P387343	
		Cadmium	0.020	U	ug/L	P387343	
		Chromium	1.0	I	ug/L	P387343	
		Copper	0.40	U	ug/L	P387343	
		Lead	0.20	U	ug/L	P387343	
		Nickel	0.50	U	ug/L	P387343	
		Selenium	0.20	U	ug/L	P387343	
		Silver	0.010	U	ug/L	P387343	
		Thallium	0.10	U	ug/L	P387343	
		Hardness	136		mg/L	P387343	

Ref. Method and Comment:

SM 2120 B-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Merritt's Mill Pond Mid Under Powerlines

Collection Date/Time: 09/08/2020 10:39

Field ID: G2WA0008

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2194753	EPA 180.1 Rev. 2.0	Turbidity	0.65		NTU	P387155	
	EPA 300.0 Rev. 2.1	Chloride	5.0		mg Cl/L	P387331	
		Sulfate	1.3		mg SO4/L	P387334	
		Color (true)	2.5	U	PCU	P387168	
	SM 2320 B-2011	Total Alkalinity	110		mg CaCO3/L	P387255	
	SM 2540 C-2011	TDS	129		mg/L	P387620	
	SM 2540 D-2011	TSS	2	U	mg/L	P387624	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P387506	
2194757	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P387297	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.17	I	mg N/L	P387212	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.5		mg N/L	P387182	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P387765	
	SM 5310 B-2011	Organic Carbon	0.68	I	mg C/L	P387314	
2194761	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P387162	
2194769	EPA 200.7 Rev. 4.4	Barium	6.7		ug/L	P387343	
		Calcium	45.0		mg/L	P387343	
		Iron	30	U	ug/L	P387343	
		Magnesium	2.67		mg/L	P387343	
		Potassium	0.33	I	mg/L	P387343	
		Sodium	2.0	I	mg/L	P387343	
		Zinc	5.0	U	ug/L	P387343	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P387343	
		Antimony	0.050	U	ug/L	P387343	
		Arsenic	0.24		ug/L	P387343	
		Boron**	8.3		ug/L	P387343	
		Cadmium	0.020	U	ug/L	P387343	
		Chromium	0.73	I	ug/L	P387343	
		Copper	0.40	U	ug/L	P387343	
		Lead	0.20	U	ug/L	P387343	
		Nickel	0.50	U	ug/L	P387343	
		Selenium	0.20	U	ug/L	P387343	
		Silver	0.010	U	ug/L	P387343	
		Thallium	0.10	U	ug/L	P387343	
	SM 2340B	Hardness	123		mg/L	P387343	

Ref. Method and Comment:

SM 2120 B-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Merritt's Mill Pond 500 Meters Upstream Of Dam

Collection Date/Time: 09/08/2020 10:05

Field ID: G2WA0009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2194754	EPA 180.1 Rev. 2.0	Turbidity	0.45		NTU	P387155	
	EPA 300.0 Rev. 2.1	Chloride	5.0		mg Cl/L	P387331	
		Sulfate	1.2		mg SO4/L	P387334	
	SM 2120 B-2011	Color (true)	2.5	U	PCU	P387168	
	SM 2320 B-2011	Total Alkalinity	98		mg CaCO3/L	P387255	
	SM 2540 C-2011	TDS	120		mg/L	P387620	
	SM 2540 D-2011	TSS	2	U	mg/L	P387624	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P387506	
2194758	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P387297	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.17	I	mg N/L	P387212	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.2		mg N/L	P387182	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P387765	
	SM 5310 B-2011	Organic Carbon	0.82	I	mg C/L	P387314	
2194762	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P387162	
2194770	EPA 200.7 Rev. 4.4	Barium	6.7		ug/L	P387343	
		Calcium	40.0		mg/L	P387343	
		Iron	30	U	ug/L	P387343	
		Magnesium	2.72		mg/L	P387343	
		Potassium	0.30	U	mg/L	P387343	
		Sodium	1.9	I	mg/L	P387343	
		Zinc	5.0	U	ug/L	P387343	
		Aluminum	5.0	U	ug/L	P387343	
		Antimony	0.050	U	ug/L	P387343	
		Arsenic	0.25		ug/L	P387343	
		Boron**	8.4		ug/L	P387343	
		Cadmium	0.020	U	ug/L	P387343	
		Chromium	0.57	I	ug/L	P387343	
		Copper	0.40	U	ug/L	P387343	
		Lead	0.20	U	ug/L	P387343	
		Nickel	0.50	U	ug/L	P387343	
		Selenium	0.20	U	ug/L	P387343	
		Silver	0.010	U	ug/L	P387343	
		Thallium	0.10	U	ug/L	P387343	
	SM 2340B	Hardness	111		mg/L	P387343	

Ref. Method and Comment:

SM 2120 B-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Shangri La Spring Vent

Collection Date/Time: 09/08/2020 11:36

Field ID: G2WA0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2194755	EPA 180.1 Rev. 2.0	Turbidity	0.10	I	NTU	P387155	
	EPA 300.0 Rev. 2.1	Chloride	5.1		mg Cl/L	P387331	
		Sulfate	1.4		mg SO4/L	P387334	
		Color (true)	2.5	U	PCU	P387168	
	SM 2320 B-2011	Total Alkalinity	131	A	mg CaCO3/L	P387255	
	SM 2540 C-2011	TDS	190	A	mg/L	P387620	
	SM 2540 D-2011	TSS	2	UA	mg/L	P387624	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P387506	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P387297	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.083	I	mg N/L	P387212	MS
2194759	EPA 353.2 Rev. 2.0	NO2NO3-N	4.1		mg N/L	P387182	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P387765	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P387314	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.023		mg P/L	P387162	
	dissolved						
2194771	EPA 200.7 Rev. 4.4	Barium	5.4		ug/L	P387343	
		Calcium	52.0		mg/L	P387343	
		Iron	30	U	ug/L	P387343	
		Magnesium	1.91		mg/L	P387343	
		Potassium	0.37	I	mg/L	P387343	
		Sodium	1.7	I	mg/L	P387343	
		Zinc	5.0	U	ug/L	P387343	
		Aluminum	5.0	U	ug/L	P387343	
		Antimony	0.050	U	ug/L	P387343	
		Arsenic	0.19	I	ug/L	P387343	
	EPA 200.8 Rev. 5.4	Boron**	8.1		ug/L	P387343	
		Cadmium	0.020	U	ug/L	P387343	
		Chromium	1.2	I	ug/L	P387343	
		Copper	0.40	U	ug/L	P387343	
		Lead	0.20	U	ug/L	P387343	
		Nickel	0.50	U	ug/L	P387343	
		Selenium	0.20	U	ug/L	P387343	
		Silver	0.010	U	ug/L	P387343	
		Thallium	0.10	U	ug/L	P387343	
		Hardness	138		mg/L	P387343	
	SM 2340B						

Ref. Method and Comment:

SM 2120 B-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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: P387155

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P387343

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: P387343

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: P387331

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P387334

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P387297

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: P387212

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387182

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387765

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387162

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

Reference Method: SM 2120 B-2011
Batch ID: P387168

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P387255

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-2011
Batch ID: P387620

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P387624

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P387506

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011

Batch ID: P387314

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: P387343**

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	98.2		P	85 - 115
Calcium	99.3		P	85 - 115
Iron	96.3		P	85 - 115
Magnesium	96.9		P	85 - 115
Potassium	94.7		P	85 - 115
Sodium	95.3		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4**Batch ID: P387343**

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	92.3		P	85 - 115
Antimony	100		P	85 - 115
Arsenic	97.0		P	85 - 115
Boron	90.9		P	85 - 115
Cadmium	96.2		P	85 - 115
Chromium	96.3		P	85 - 115
Copper	97.4		P	85 - 115
Lead	99.2		P	85 - 115
Nickel	96.1		P	85 - 115
Selenium	95.7		P	85 - 115
Silver	96.2		P	85 - 115
Thallium	100		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1**Batch ID: P387331**

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

Reference Method: EPA 300.0 Rev. 2.1**Batch ID: P387334**

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

Reference Method: EPA 350.1 Rev. 2.0**Batch ID: P387297**

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

Reference Method: EPA 351.2 Rev. 2.0**Batch ID: P387212**

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387182

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: P387765

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387162

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

Reference Method: SM 2120 B-2011
Batch ID: P387168

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.5		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P387255

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.3		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P387506

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	93.6		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P387314

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P387343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194770	Barium	100	101	P/P	80 - 120
2194770	Calcium	87.3		P	80 - 120
2194770	Iron	100	99.8	P/P	80 - 120
2194770	Magnesium	98.9	99.4	P/P	80 - 120
2194770	Potassium	104	104	P/P	80 - 120
2194770	Sodium	98.3	99.2	P/P	80 - 120
2194770	Zinc	103	103	P/P	80 - 120
2195378	Barium	102		P	80 - 120
2195378	Calcium	99.1		P	80 - 120
2195378	Iron	103		P	80 - 120
2195378	Magnesium	97.2		P	80 - 120
2195378	Potassium	96.0		P	80 - 120
2195378	Sodium	95.5		P	80 - 120
2195378	Zinc	108		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P387343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194770	Aluminum	91.3	93.1	P/P	80 - 120
2194770	Antimony	104	105	P/P	80 - 120
2194770	Arsenic	99.1	100	P/P	80 - 120
2194770	Boron	92.4	95.1	P/P	80 - 120
2194770	Cadmium	99.3	98.9	P/P	80 - 120
2194770	Chromium	98.4	98.9	P/P	80 - 120
2194770	Copper	97.3	97.2	P/P	80 - 120
2194770	Lead	99.2	100	P/P	80 - 120
2194770	Nickel	96.8	96.9	P/P	80 - 120
2194770	Selenium	97.7	96.9	P/P	80 - 120
2194770	Silver	96.8	95.6	P/P	80 - 120
2194770	Thallium	102	105	P/P	80 - 120
2195378	Aluminum	92.2		P	80 - 120
2195378	Antimony	104		P	80 - 120
2195378	Arsenic	101		P	80 - 120
2195378	Boron	94.1		P	80 - 120
2195378	Cadmium	100		P	80 - 120
2195378	Chromium	99.2		P	80 - 120
2195378	Copper	98.0		P	80 - 120
2195378	Lead	100		P	80 - 120
2195378	Nickel	97.0		P	80 - 120
2195378	Selenium	96.4		P	80 - 120
2195378	Silver	94.6		P	80 - 120
2195378	Thallium	103		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P387331

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194472	Chloride	99.1		P	90 - 110
2194716	Chloride	98.5		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387334

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194472	Sulfate	93.8		P	90 - 110
2194716	Sulfate	95.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194717	Ammonia-N	96.6	97.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387212

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194619	Kjeldahl Nitrogen	107	112	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387182

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194717	NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194758	Total-P	108	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387162

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194760	O-Phosphate-P	99.8	99.4	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P387506

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194752	Fluoride	102	102	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P387314

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194492	Organic Carbon	96.6	98.4	P/P	85 - 115

Quality Assurance Report

Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P387155

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194776	Turbidity	14.3	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P387343

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194770	Barium	0.329	Spike	P	0 - 20
2194770	Calcium	0.748	Spike	P	0 - 20
2194770	Iron	0.332	Spike	P	0 - 20
2194770	Magnesium	0.319	Spike	P	0 - 20
2194770	Potassium	0.163	Spike	P	0 - 20
2194770	Sodium	0.617	Spike	P	0 - 20
2194770	Zinc	0.104	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P387343

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194770	Aluminum	1.93	Spike	P	0 - 20
2194770	Antimony	0.515	Spike	P	0 - 20
2194770	Arsenic	1.03	Spike	P	0 - 20
2194770	Boron	2.65	Spike	P	0 - 20
2194770	Cadmium	0.378	Spike	P	0 - 20
2194770	Chromium	0.528	Spike	P	0 - 20
2194770	Copper	0.117	Spike	P	0 - 20
2194770	Lead	1.01	Spike	P	0 - 20
2194770	Nickel	0.0551	Spike	P	0 - 20
2194770	Selenium	0.832	Spike	P	0 - 20
2194770	Silver	1.21	Spike	P	0 - 20
2194770	Thallium	2.74	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P387331

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194472	Chloride	0.0776	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P387334

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194472	Sulfate	0.218	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194717	Ammonia-N	0.468	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387212

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194619	Kjeldahl Nitrogen	4.14	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387182

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194717	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194758	Total-P	0.410	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387162

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194760	O-Phosphate-P	0.346	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P387255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194755	Total Alkalinity	0.520	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P387620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194755	TDS	1.58	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P387506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194752	Fluoride	0.0	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P387314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194492	Organic Carbon	1.41	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: A100883

Included Lab Sample IDs: 2194752, 2194753, 2194754, 2194755

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A100885

Included Lab Sample IDs: 2194760, 2194761, 2194762, 2194763

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	97.9	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A100887

Included Lab Sample IDs: 2194752, 2194753, 2194754, 2194755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	95.1	106	P/P	85 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100898

Included Lab Sample IDs: 2194756, 2194757, 2194758, 2194759

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.2	P/P	90 - 110
NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A100928

Included Lab Sample IDs: 2194752, 2194753, 2194754, 2194755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.4	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100944

Included Lab Sample IDs: 2194756, 2194757, 2194758, 2194759

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.2	98.7	P/P	90 - 110
Ammonia-N	98.7	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100951

Included Lab Sample IDs: 2194756, 2194757, 2194758, 2194759

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.6	103	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A100952

Included Lab Sample IDs: 2194756, 2194757, 2194758, 2194759

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

Reference Method: SM 5310 B-2011

Run ID: A100952

Included Lab Sample IDs: 2194756, 2194757, 2194758, 2194759

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	97.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100958

Included Lab Sample IDs: 2194752, 2194753, 2194754, 2194755

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A100997

Included Lab Sample IDs: 2194768, 2194769, 2194770, 2194771

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	103	P/P	95 - 105
Barium	103	99.7	P/P	90 - 110
Calcium	100	95.7	P/P	95 - 105
Calcium	95.7	95.6	P/P	90 - 110
Iron	100	95.1	P/P	95 - 105
Iron	95.1	94.6	P/P	90 - 110
Magnesium	94.9	94.6	P/P	90 - 110
Magnesium	99.2	94.9	P/P	95 - 105
Potassium	93.3	92.5	P/P	90 - 110
Potassium	96.4	93.3	P/P	95 - 105
Sodium	94.3	93.5	P/P	90 - 110
Sodium	97.0	94.3	P/P	95 - 105
Zinc	101	105	P/P	95 - 105
Zinc	105	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A101053

Included Lab Sample IDs: 2194752, 2194753, 2194754, 2194755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.2	97.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A101063

Included Lab Sample IDs: 2194768, 2194769, 2194770, 2194771

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	93.9	94.6	P/P	90 - 110
Aluminum	94.0	93.9	P/P	90 - 110
Antimony	102	102	P/P	90 - 110
Antimony	102	102	P/P	90 - 110
Arsenic	94.0	93.9	P/P	90 - 110
Arsenic	95.8	94.0	P/P	90 - 110
Boron	90.2	92.9	P/P	90 - 110
Boron	92.9	93.6	P/P	90 - 110
Cadmium	93.3	93.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A101063

Included Lab Sample IDs: 2194768, 2194769, 2194770, 2194771

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	93.6	94.3	P/P	90 - 110
Chromium	91.9	93.4	P/P	90 - 110
Chromium	92.7	91.9	P/P	90 - 110
Copper	92.5	93.3	P/P	90 - 110
Copper	95.0	92.5	P/P	90 - 110
Lead	94.5	95.0	P/P	90 - 110
Lead	95.4	94.5	P/P	90 - 110
Nickel	92.2	92.1	P/P	90 - 110
Nickel	94.2	92.2	P/P	90 - 110
Selenium	92.7	92.2	P/P	90 - 110
Selenium	93.3	92.7	P/P	90 - 110
Silver	95.9	96.2	P/P	90 - 110
Silver	96.3	95.9	P/P	90 - 110
Thallium	94.4	95.0	P/P	90 - 110
Thallium	95.0	94.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101202

Included Lab Sample IDs: 2194756, 2194757, 2194758, 2194759

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.5	95.5	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					14.3	
EPA 200.7 Rev. 4.4	Barium	98.2	100	101	102		0.329
	Calcium	99.3	87.3	99.1			0.748
	Iron	96.3	100	99.8	103		0.332
	Magnesium	96.9	98.9	99.4	97.2		0.319
	Potassium	94.7	104	104	96.0		0.163
	Sodium	95.3	98.3	99.2	95.5		0.617
	Zinc	101	103	103	108		0.104
EPA 200.8 Rev. 5.4	Aluminum	92.3	91.3	93.1	92.2		1.93
	Antimony	100	104	105	104		0.515
	Arsenic	97.0	99.1	100	101		1.03
	Boron	90.9	92.4	95.1	94.1		2.65
	Cadmium	96.2	99.3	98.9	100		0.378
	Chromium	96.3	98.4	98.9	99.2		0.528
	Copper	97.4	97.3	97.2	98.0		0.117
	Lead	99.2	99.2	100	100		1.01
	Nickel	96.1	96.8	96.9	97.0		0.0551
	Selenium	95.7	97.7	96.9	96.4		0.832
	Silver	96.2	96.8	95.6	94.6		1.21
	Thallium	100	102	105	103		2.74
EPA 300.0 Rev. 2.1	Chloride	100	99.1	98.5		0.0776	
	Sulfate	98.8	93.8	95.1		0.218	
EPA 350.1 Rev. 2.0	Ammonia-N	99.2	96.6	97.1			0.468
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	107	112			4.14
EPA 353.2 Rev. 2.0	NO2NO3-N	100	99.5	99.5			0.0
EPA 365.1 Rev. 2.0	Total-P	106	108	108			0.410
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.0	99.8	99.4			0.346
SM 2120 B-2011	Color (true)	98.5					
SM 2320 B-2011	Total Alkalinity	99.3				0.520	
SM 2540 C-2011	TDS					1.58	
SM 4500 F-C-2011	Fluoride	93.6	102	102			0.0
SM 5310 B-2011	Organic Carbon	98.1	96.6	98.4			1.41

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2194752, 2194753, 2194754, 2194755
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2194768, 2194769, 2194770, 2194771
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2194768, 2194769, 2194770, 2194771
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2194752, 2194753, 2194754, 2194755
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2194752, 2194753, 2194754, 2194755
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2194756, 2194757, 2194758, 2194759
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2194756, 2194757, 2194758, 2194759
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2194756, 2194757, 2194758, 2194759
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2194756, 2194757, 2194758, 2194759
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2194760, 2194761, 2194762, 2194763
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2194752, 2194753, 2194754, 2194755
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2194752, 2194753, 2194754, 2194755
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2194768, 2194769, 2194770, 2194771
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2194752, 2194753, 2194754, 2194755

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2194752, 2194753, 2194754, 2194755
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2194752, 2194753, 2194754, 2194755
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2194756, 2194757, 2194758, 2194759

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	09/08/2020			09/09/2020 15:55	Yen Ta	2194752, 2194753, 2194754, 2194755
EPA 200.7 Rev. 4.4	09/08/2020	09/14/2020 15:10	Elliott D. Healy	09/15/2020 15:49	Betina Topolski	2194768
	09/08/2020	09/14/2020 15:10	Elliott D. Healy	09/15/2020 15:54	Betina Topolski	2194769
	09/08/2020	09/14/2020 15:10	Elliott D. Healy	09/15/2020 16:24	Betina Topolski	2194770
	09/08/2020	09/14/2020 15:10	Elliott D. Healy	09/15/2020 16:52	Betina Topolski	2194771
EPA 200.8 Rev. 5.4	09/08/2020	09/14/2020 15:10	Elliott D. Healy	09/17/2020 18:04	Alexander Thompson	2194768
	09/08/2020	09/14/2020 15:10	Elliott D. Healy	09/17/2020 18:11	Alexander Thompson	2194770
	09/08/2020	09/14/2020 15:10	Elliott D. Healy	09/17/2020 18:57	Alexander Thompson	2194769
	09/08/2020	09/14/2020 15:10	Elliott D. Healy	09/17/2020 19:04	Alexander Thompson	2194771
EPA 300.0 Rev. 2.1	09/08/2020			09/11/2020 13:07	Elliott Rodriguez	2194752
	09/08/2020			09/11/2020 13:21	Elliott Rodriguez	2194753
	09/08/2020			09/11/2020 13:34	Elliott Rodriguez	2194754
	09/08/2020			09/11/2020 13:47	Elliott Rodriguez	2194755
EPA 350.1 Rev. 2.0	09/08/2020			09/12/2020 16:18	Ping Hua	2194757
	09/08/2020			09/12/2020 16:19	Ping Hua	2194758
	09/08/2020			09/12/2020 16:21	Ping Hua	2194759
	09/08/2020			09/12/2020 16:35	Ping Hua	2194756
EPA 351.2 Rev. 2.0	09/08/2020	09/10/2020 11:36	Sima Feizi	09/11/2020 15:52	Elliott Rodriguez	2194756
	09/08/2020	09/10/2020 11:36	Sima Feizi	09/11/2020 15:53	Elliott Rodriguez	2194757
	09/08/2020	09/10/2020 11:36	Sima Feizi	09/11/2020 15:55	Elliott Rodriguez	2194758
	09/08/2020	09/10/2020 11:36	Sima Feizi	09/11/2020 15:56	Elliott Rodriguez	2194759
EPA 353.2 Rev. 2.0	09/08/2020			09/10/2020 09:17	Beverly Y. Sanders	2194756
	09/08/2020			09/10/2020 09:18	Beverly Y. Sanders	2194757
	09/08/2020			09/10/2020 09:19	Beverly Y. Sanders	2194758
	09/08/2020			09/10/2020 09:24	Beverly Y. Sanders	2194759
EPA 365.1 Rev. 2.0	09/08/2020	09/23/2020 17:40	Madeline Gruver	09/25/2020 13:35	Lipi Saha	2194758
	09/08/2020	09/23/2020 17:40	Madeline Gruver	09/25/2020 13:36	Lipi Saha	2194756
	09/08/2020	09/23/2020 17:40	Madeline Gruver	09/25/2020 13:37	Lipi Saha	2194757
	09/08/2020	09/23/2020 17:40	Madeline Gruver	09/25/2020 13:38	Lipi Saha	2194759
EPA 365.1 Rev. 2.0 dissolved	09/08/2020			09/09/2020 15:51	Virginia P. Brown	2194760
	09/08/2020			09/09/2020 15:54	Virginia P. Brown	2194761
	09/08/2020			09/09/2020 15:55	Virginia P. Brown	2194762, 2194763
SM 2120 B-2011	09/08/2020			09/09/2020 16:01	Benjamin T. Nordmann	2194752
	09/08/2020			09/09/2020 16:02	Benjamin T. Nordmann	2194753, 2194754
	09/08/2020			09/09/2020 16:03	Benjamin T. Nordmann	2194755
SM 2320 B-2011	09/08/2020			09/10/2020 14:09	Dale L. Simmons	2194755
	09/08/2020			09/10/2020 14:31	Dale L. Simmons	2194752
	09/08/2020			09/10/2020 14:44	Dale L. Simmons	2194753
	09/08/2020			09/10/2020 14:58	Dale L. Simmons	2194754
SM 2340B	09/08/2020			09/15/2020 15:49	Betina Topolski	2194768

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2340B	09/08/2020			09/15/2020 15:54	Betina Topolski	2194769
	09/08/2020			09/15/2020 16:24	Betina Topolski	2194770
	09/08/2020			09/15/2020 16:52	Betina Topolski	2194771
SM 2540 C-2011	09/08/2020			09/14/2020 15:06	Yijie Li	2194752, 2194753, 2194754, 2194755
SM 2540 D-2011	09/08/2020			09/14/2020 15:06	Yijie Li	2194752, 2194753, 2194754, 2194755
SM 4500 F-C-2011	09/08/2020			09/16/2020 18:08	Dale L. Simmons	2194752
	09/08/2020			09/16/2020 18:22	Dale L. Simmons	2194753
	09/08/2020			09/16/2020 18:27	Dale L. Simmons	2194754
	09/08/2020			09/16/2020 18:32	Dale L. Simmons	2194755
SM 5310 B-2011	09/08/2020			09/12/2020 04:36	David Boose	2194756
	09/08/2020			09/12/2020 04:48	David Boose	2194757
	09/08/2020			09/12/2020 05:00	David Boose	2194758
	09/08/2020			09/12/2020 05:13	David Boose	2194759