Chemical Analysis Report

SE-DIST-2021-07-21-01

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

Event Description: **SMP - Okeechobee**
Request ID: **RQ-2021-07-19-33**
Customer: **SE-DIST**
Project ID: **SMP**

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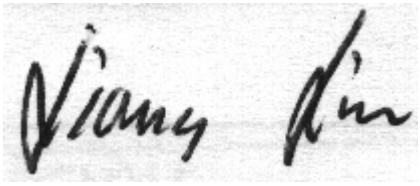
Certified by: Liang Lin, Environmental Administrator

Date Certified: 17-AUG-2021 14:03



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: Gore Branch @ 724 **Collection Date/Time: 07/20/2021 12:20**

Field ID: G4SE0130 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2263923	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P401343	
	EPA 300.0 Rev. 2.1	Chloride	39		mg Cl/L	P401812	
		Sulfate	6.3		mg SO4/L	P401815	
	SM 2120 B-2011	Color (true)	200		PCU	P401340	
	SM 2320 B-2011	Total Alkalinity	107		mg CaCO3/L	P401516	
	SM 2540 C-2011	TDS	255		mg/L	P401798	
	SM 2540 D-2011	TSS	2	I	mg/L	P401803	
	SM 4500 F-C-2011	Fluoride	0.19		mg F/L	P401520	
2263926	EPA 350.1 Rev. 2.0	Ammonia-N	0.062		mg N/L	P402257	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P402410	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P401478	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P401590	
	SM 5310 B-2011	Organic Carbon	29		mg C/L	P401867	
2263929	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.10		mg P/L	P401308	

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: Oak Creek @ 68 **Collection Date/Time: 07/20/2021 13:10**

Field ID: G4SE0080 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2263920	EPA 180.1 Rev. 2.0	Turbidity	3.8	A	NTU	P401343	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P401812	
		Sulfate	4.5		mg SO4/L	P401815	
	SM 2120 B-2011	Color (true)	380		PCU	P401340	
	SM 2320 B-2011	Total Alkalinity	32		mg CaCO3/L	P401516	
	SM 2540 C-2011	TDS	154	A	mg/L	P401798	
	SM 2540 D-2011	TSS	4	I A	mg/L	P401803	
	SM 4500 F-C-2011	Fluoride	0.092	I	mg F/L	P401520	
2263921	EPA 350.1 Rev. 2.0	Ammonia-N	0.24		mg N/L	P401767	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.8		mg N/L	P402410	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P401478	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P401590	
	SM 5310 B-2011	Organic Carbon	36		mg C/L	P401867	
2263922	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P401305	
2263950	EPA 200.7 Rev. 4.4	Barium	22.7		ug/L	P401538	
		Calcium	14.5		mg/L	P401538	
		Iron	1.47E+03		ug/L	P401538	
		Magnesium	3.06		mg/L	P401538	
		Manganese	25.1		ug/L	P401538	
		Potassium	2.8		mg/L	P401538	
		Sodium	13.3		mg/L	P401538	
		Zinc	5.8	I	ug/L	P401538	
	EPA 200.8 Rev. 5.4	Aluminum	218		ug/L	P401538	
		Antimony	0.092	I	ug/L	P401538	
		Arsenic	2.05		ug/L	P401538	
		Beryllium	0.045		ug/L	P401538	
		Boron**	41.1		ug/L	P401538	
		Cadmium	0.020	U	ug/L	P401538	
		Chromium	0.72	I	ug/L	P401538	
		Copper	1.19		ug/L	P401538	
		Lead	0.31	I	ug/L	P401538	
		Nickel	0.50	U	ug/L	P401538	
		Selenium	0.27	I	ug/L	P401538	
		Silver	0.010	U	ug/L	P401538	
		Thallium	0.10	U	ug/L	P401538	
	SM 2340B	Hardness	48.9		mg/L	P401538	

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: S-153 Unnamed creek @ 710 **Collection Date/Time: 07/20/2021 15:50**

Field ID: G4SE0137 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2263924	EPA 180.1 Rev. 2.0	Turbidity	13		NTU	P401343	
	EPA 300.0 Rev. 2.1	Chloride	220		mg Cl/L	P401812	
		Sulfate	69		mg SO4/L	P401815	
	SM 2120 B-2011	Color (true)	300		PCU	P401340	
	SM 2320 B-2011	Total Alkalinity	90		mg CaCO3/L	P401516	
	SM 2540 C-2011	TDS	642		mg/L	P401798	
	SM 2540 D-2011	TSS	40		mg/L	P401803	
	SM 4500 F-C-2011	Fluoride	0.36		mg F/L	P401520	
2263927	EPA 350.1 Rev. 2.0	Ammonia-N	0.30		mg N/L	P401767	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	6.0	J	mg N/L	P402475	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P401478	
	EPA 365.1 Rev. 2.0	Total-P	1.5		mg P/L	P401590	
	SM 5310 B-2011	Organic Carbon	29		mg C/L	P401867	
2263930	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.51		mg P/L	P401308	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: The result may be biased because of sample matrix interference.

Sample Location: L-65 upstream of S-153 **Collection Date/Time: 07/20/2021 15:10**

Field ID: G1SE0050 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2263925	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P401343	
	EPA 300.0 Rev. 2.1	Chloride	130		mg Cl/L	P402022	
		Sulfate	38		mg SO4/L	P401815	
	SM 2120 B-2011	Color (true)	170		PCU	P401340	
	SM 2320 B-2011	Total Alkalinity	139		mg CaCO3/L	P401516	
	SM 2540 C-2011	TDS	480		mg/L	P401798	
	SM 2540 D-2011	TSS	2	U	mg/L	P401803	
	SM 4500 F-C-2011	Fluoride	0.25		mg F/L	P401520	
2263928	EPA 350.1 Rev. 2.0	Ammonia-N	0.062		mg N/L	P401767	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P402272	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.039		mg N/L	P401478	
	EPA 365.1 Rev. 2.0	Total-P	0.27		mg P/L	P401590	
	SM 5310 B-2011	Organic Carbon	24		mg C/L	P401867	
2263931	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.22		mg P/L	P401308	

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: P401343

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P401538

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
Manganese	1.0	U	ug/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: P401538

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	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: P401812

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401815

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402022

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401767

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402257

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402272

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402410

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402475

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401478

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401590

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401305

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401308

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

Quality Assurance Report
Method Blank Results

Reference Method: SM 2120 B-2011
Batch ID: P401340

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P401516

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

Reference Method: SM 2540 C-2011
Batch ID: P401798

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P401803

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P401520

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P401867

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: P401538

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	109		P	85 - 115
Iron	108		P	85 - 115
Magnesium	111		P	85 - 115
Manganese	101		P	85 - 115
Potassium	103		P	85 - 115
Sodium	107		P	85 - 115
Zinc	96.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P401538

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	115		P	80 - 120
Antimony	117		P	80 - 120
Arsenic	115		P	80 - 120
Beryllium	111		P	80 - 120
Boron	111		P	80 - 120
Cadmium	113		P	80 - 120
Chromium	111		P	80 - 120
Copper	114		P	80 - 120
Lead	114		P	80 - 120
Nickel	114		P	80 - 120
Selenium	114		P	80 - 120
Silver	114		P	80 - 120
Thallium	107		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401812

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401815

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402022

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	94.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401767

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402257

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402272

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402410

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402475

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	109		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401478

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401590

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401305

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401308

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

Reference Method: SM 2120 B-2011
Batch ID: P401340

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.1		P	85 - 115

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P401516

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P401520

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P401867

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.1		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P401538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263583	Barium	102		P	80 - 120
2263583	Calcium	111		P	80 - 120
2263583	Iron	111		P	80 - 120
2263583	Magnesium	108		P	80 - 120
2263583	Manganese	101		P	80 - 120
2263583	Potassium	104		P	80 - 120
2263583	Sodium	109		P	80 - 120
2263583	Zinc	95.1		P	80 - 120
2263836	Barium	103	101	P/P	80 - 120
2263836	Calcium	110	109	P/P	80 - 120
2263836	Iron	108	109	P/P	80 - 120
2263836	Magnesium	111	111	P/P	80 - 120
2263836	Manganese	101	99.8	P/P	80 - 120
2263836	Potassium	107	106	P/P	80 - 120
2263836	Sodium	108	108	P/P	80 - 120
2263836	Zinc	96.7	95.6	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P401538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263583	Aluminum	107		P	80 - 120
2263583	Antimony	114		P	80 - 120
2263583	Arsenic	107		P	80 - 120
2263583	Beryllium	111		P	80 - 120
2263583	Boron	105		P	80 - 120
2263583	Cadmium	109		P	80 - 120
2263583	Chromium	108		P	80 - 120
2263583	Copper	103		P	80 - 120
2263583	Lead	109		P	80 - 120
2263583	Nickel	103		P	80 - 120
2263583	Selenium	103		P	80 - 120
2263583	Silver	111		P	80 - 120
2263583	Thallium	107		P	80 - 120
2263836	Aluminum	104	105	P/P	80 - 120
2263836	Antimony	110	109	P/P	80 - 120
2263836	Arsenic	103	105	P/P	80 - 120
2263836	Beryllium	107	108	P/P	80 - 120
2263836	Boron	104	102	P/P	80 - 120
2263836	Cadmium	106	103	P/P	80 - 120
2263836	Chromium	103	102	P/P	80 - 120
2263836	Copper	104	105	P/P	80 - 120
2263836	Lead	107	108	P/P	80 - 120
2263836	Nickel	102	103	P/P	80 - 120
2263836	Selenium	102	101	P/P	80 - 120
2263836	Silver	106	105	P/P	80 - 120
2263836	Thallium	106	107	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401812

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401812

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263862	Chloride	100		P	90 - 110
2263991	Chloride	97.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401815

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263862	Sulfate	101		P	90 - 110
2263991	Sulfate	94.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402022

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263988	Chloride	98.2		P	90 - 110
2264579	Chloride	97.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401767

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263906	Ammonia-N	96.2	97.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402257

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2266030	Ammonia-N	101	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263986	Kjeldahl Nitrogen	111	106	F/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402410

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263906	Kjeldahl Nitrogen	109	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402475

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264982	Kjeldahl Nitrogen	110	94.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401478

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263926	NO2NO3-N	97.0	96.0	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401590

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263921	Total-P	106	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401305

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263635	O-Phosphate-P	99.4	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263993	O-Phosphate-P	97.6	96.4	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P401520

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263991	Fluoride	101	101	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P401867

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263621	Organic Carbon	95.4	95.7	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P401343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263920	Turbidity	2.35	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P401538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263836	Barium	1.47	Spike	P	0 - 20
2263836	Calcium	0.420	Spike	P	0 - 20
2263836	Iron	0.638	Spike	P	0 - 20
2263836	Magnesium	0.00299	Spike	P	0 - 20
2263836	Manganese	1.44	Spike	P	0 - 20
2263836	Potassium	0.761	Spike	P	0 - 20
2263836	Sodium	0.195	Spike	P	0 - 20
2263836	Zinc	1.17	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P401538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263836	Aluminum	0.906	Spike	P	0 - 20
2263836	Antimony	0.681	Spike	P	0 - 20
2263836	Arsenic	1.24	Spike	P	0 - 20
2263836	Beryllium	0.661	Spike	P	0 - 20
2263836	Boron	1.86	Spike	P	0 - 20
2263836	Cadmium	2.27	Spike	P	0 - 20
2263836	Chromium	0.275	Spike	P	0 - 20
2263836	Copper	0.739	Spike	P	0 - 20
2263836	Lead	0.505	Spike	P	0 - 20
2263836	Nickel	0.389	Spike	P	0 - 20
2263836	Selenium	0.856	Spike	P	0 - 20
2263836	Silver	0.193	Spike	P	0 - 20
2263836	Thallium	1.45	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401812

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263991	Chloride	0.779	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263991	Sulfate	1.35	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402022

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263988	Chloride	0.654	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401767

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263906	Ammonia-N	0.651	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2266030	Ammonia-N	2.21	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263986	Kjeldahl Nitrogen	3.32	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402410

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263906	Kjeldahl Nitrogen	1.46	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264982	Kjeldahl Nitrogen	10.3	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401478

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263926	NO2NO3-N	0.615	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401590

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263921	Total-P	0.264	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263635	O-Phosphate-P	0.0684	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263993	O-Phosphate-P	0.963	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P401340

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263959	Color (true)	0.703	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P401516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263991	Total Alkalinity	2.31	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P401798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263920	TDS	4.56	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P401520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263991	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P401867

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263621	Organic Carbon	0.219	Spike	P	0 - 20

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A106743
Included Lab Sample IDs: 2263922, 2263929, 2263930, 2263931

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	99.6	P/P	90 - 110
O-Phosphate-P	99.6	99.7	P/P	90 - 110

Reference Method: SM 2120 B-2011
Run ID: A106751
Included Lab Sample IDs: 2263920, 2263923, 2263924, 2263925

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	101	P/P	90 - 115
Color (true)	99.7	102	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A106752
Included Lab Sample IDs: 2263920, 2263923, 2263924, 2263925

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A106796
Included Lab Sample IDs: 2263921, 2263926, 2263927, 2263928

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

Reference Method: SM 2320 B-2011
Run ID: A106814
Included Lab Sample IDs: 2263920, 2263923, 2263924, 2263925

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	99.9	P/P	90 - 110
Total Alkalinity	99.6	104	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A106814
Included Lab Sample IDs: 2263920, 2263923, 2263924, 2263925

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A106868
Included Lab Sample IDs: 2263921, 2263926, 2263927, 2263928

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A106905
Included Lab Sample IDs: 2263920, 2263923, 2263924

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A106929
Included Lab Sample IDs: 2263950

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	106	104	P/P	90 - 110
Antimony	108	110	P/P	90 - 110
Arsenic	103	103	P/P	90 - 110
Beryllium	101	100	P/P	90 - 110
Boron	105	102	P/P	90 - 110
Cadmium	104	106	P/P	90 - 110
Chromium	103	102	P/P	90 - 110
Copper	102	101	P/P	90 - 110
Lead	103	103	P/P	90 - 110
Nickel	101	101	P/P	90 - 110
Selenium	103	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A106946
Included Lab Sample IDs: 2263921, 2263927, 2263928

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.6	98.5	P/P	90 - 110
Ammonia-N	99.7	98.7	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A106958
Included Lab Sample IDs: 2263950

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	103	P/P	90 - 110
Calcium	101	105	P/P	90 - 110
Iron	99.9	104	P/P	90 - 110
Magnesium	99.9	104	P/P	90 - 110
Manganese	102	103	P/P	90 - 110
Potassium	100	103	P/P	90 - 110
Sodium	102	105	P/P	90 - 110
Zinc	103	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A106989
Included Lab Sample IDs: 2263950

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	107	104	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-2011
Run ID: A106995
Included Lab Sample IDs: 2263921, 2263926, 2263927, 2263928

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	97.2	P/P	90 - 110
Organic Carbon	97.4	97.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A107016
Included Lab Sample IDs: 2263950

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	109	108	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A107025
Included Lab Sample IDs: 2263925

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.9	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A107151
Included Lab Sample IDs: 2263926

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A107191
Included Lab Sample IDs: 2263928

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A107270
Included Lab Sample IDs: 2263921, 2263926

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A107272
Included Lab Sample IDs: 2263927

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.2	99.8	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	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						2.35	
EPA 200.7 Rev. 4.4	Barium	102	102	103	101			1.47
	Calcium	109	111	110	109			0.420
	Iron	108	111	108	109			0.638
	Magnesium	111	108	111	111			0.0029
	Manganese	101	101	101	99.8			1.44
	Potassium	103	104	107	106			0.761
	Sodium	107	109	108	108			0.195
	Zinc	96.3	95.1	96.7	95.6			1.17
EPA 200.8 Rev. 5.4	Aluminum	115	104	105	107			0.906
	Antimony	117	110	109	114			0.681
	Arsenic	115	103	105	107			1.24
	Beryllium	111	107	108	111			0.661
	Boron	111	104	102	105			1.86
	Cadmium	113	106	103	109			2.27
	Chromium	111	103	102	108			0.275
	Copper	114	104	105	103			0.739
	Lead	114	107	108	109			0.505
	Nickel	114	102	103	103			0.389
	Selenium	114	102	101	103			0.856
	Silver	114	106	105	111			0.193
	Thallium	107	106	107	107			1.45
EPA 300.0 Rev. 2.1	Chloride	100	97.0	100			0.779	
	Chloride	94.5	98.2	97.2			0.654	
	Sulfate	99.5	94.0	101			1.35	
EPA 350.1 Rev. 2.0	Ammonia-N	97.6	96.2	97.2				0.651
	Ammonia-N	100	101	105				2.21
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	111	106				3.32
	Kjeldahl Nitrogen	107	109	106				1.46
	Kjeldahl Nitrogen	109	110	94.7				10.3
EPA 353.2 Rev. 2.0	NO2NO3-N	101	97.0	96.0				0.615
EPA 365.1 Rev. 2.0	Total-P	107	106	105				0.264
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.1	99.4	99.3				0.0684
	O-Phosphate-P	101	97.6	96.4				0.963
SM 2120 B-2011	Color (true)	99.1					0.703	
SM 2320 B-2011	Total Alkalinity	102					2.31	
SM 2540 C-2011	TDS						4.56	
SM 4500 F-C-2011	Fluoride	100	101	101				0.0
SM 5310 B-2011	Organic Carbon	95.1	95.4	95.7				0.219

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2263920, 2263923, 2263924, 2263925
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2263950
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2263950
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2263920, 2263923, 2263924, 2263925
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2263920, 2263923, 2263924, 2263925
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2263921, 2263926, 2263927, 2263928
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2263921, 2263926, 2263927, 2263928
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2263921, 2263926, 2263927, 2263928

Reference Method Descriptions

Method	Description	Associated Samples
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2263921, 2263926, 2263927, 2263928
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2263922, 2263929, 2263930, 2263931
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2263920, 2263923, 2263924, 2263925
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2263920, 2263923, 2263924, 2263925
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2263950
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2263920, 2263923, 2263924, 2263925
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2263920, 2263923, 2263924, 2263925
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2263920, 2263923, 2263924, 2263925
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2263921, 2263926, 2263927, 2263928

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	07/21/2021			07/21/2021 16:04	Sarah A Nixon	2263920, 2263923, 2263924, 2263925
EPA 200.7 Rev. 4.4	07/21/2021	07/26/2021 14:45	Elliott D. Healy	07/30/2021 16:21	Betina Topolski	2263950
EPA 200.8 Rev. 5.4	07/21/2021	07/26/2021 14:45	Elliott D. Healy	07/29/2021 20:14	McKinley C Carter	2263950
	07/21/2021	07/26/2021 14:45	Elliott D. Healy	08/02/2021 20:43	McKinley C Carter	2263950
	07/21/2021	07/26/2021 14:45	Elliott D. Healy	08/04/2021 04:56	Alexander Thompson	2263950
EPA 300.0 Rev. 2.1	07/21/2021			07/30/2021 16:16	Lipi Saha	2263920
	07/21/2021			07/30/2021 16:28	Lipi Saha	2263923
	07/21/2021			07/30/2021 16:40	Lipi Saha	2263924
	07/21/2021			07/30/2021 16:52	Lipi Saha	2263925
	07/21/2021			08/04/2021 16:51	Lipi Saha	2263925
EPA 350.1 Rev. 2.0	07/21/2021			07/30/2021 14:24	Roberta Tatti	2263927
	07/21/2021			07/30/2021 14:25	Roberta Tatti	2263928
	07/21/2021			07/30/2021 15:09	Roberta Tatti	2263921
	07/21/2021			08/10/2021 12:12	Roberta Tatti	2263926
EPA 351.2 Rev. 2.0	07/21/2021	08/10/2021 16:25	Madeline Gruver	08/11/2021 13:54	Virginia P. Brown	2263928
	07/21/2021	08/13/2021 13:09	Madeline Gruver	08/16/2021 10:55	Virginia P. Brown	2263921
	07/21/2021	08/13/2021 13:09	Madeline Gruver	08/16/2021 10:57	Virginia P. Brown	2263926
	07/21/2021	08/13/2021 13:09	Madeline Gruver	08/16/2021 12:22	Virginia P. Brown	2263927
EPA 353.2 Rev. 2.0	07/21/2021			07/23/2021 09:11	Beverly Y. Sanders	2263926
	07/21/2021			07/23/2021 09:17	Beverly Y. Sanders	2263921
	07/21/2021			07/23/2021 09:18	Beverly Y. Sanders	2263927
	07/21/2021			07/23/2021 09:19	Beverly Y. Sanders	2263928
EPA 365.1 Rev. 2.0	07/21/2021	07/27/2021 15:15	Simonne.V. Calhoun	07/28/2021 09:02	Shengyu Ding	2263921
	07/21/2021	07/27/2021 15:15	Simonne.V. Calhoun	07/28/2021 09:05	Shengyu Ding	2263926
	07/21/2021	07/27/2021 15:15	Simonne.V. Calhoun	07/28/2021 09:07	Shengyu Ding	2263928
	07/21/2021	07/27/2021 15:15	Simonne.V. Calhoun	07/28/2021 09:57	Shengyu Ding	2263927
EPA 365.1 Rev. 2.0 dissolved	07/21/2021			07/21/2021 13:23	Lipi Saha	2263922
	07/21/2021			07/21/2021 13:59	Lipi Saha	2263929
	07/21/2021			07/21/2021 14:00	Lipi Saha	2263930
	07/21/2021			07/21/2021 14:01	Lipi Saha	2263931
SM 2120 B-2011	07/21/2021			07/21/2021 17:13	Sarah A Nixon	2263920
	07/21/2021			07/21/2021 17:14	Sarah A Nixon	2263923
	07/21/2021			07/21/2021 17:15	Sarah A Nixon	2263924
	07/21/2021			07/21/2021 17:20	Sarah A Nixon	2263925
SM 2320 B-2011	07/21/2021			07/24/2021 00:28	Dale L. Simmons	2263920
	07/21/2021			07/24/2021 00:43	Dale L. Simmons	2263923
	07/21/2021			07/24/2021 01:33	Dale L. Simmons	2263924
	07/21/2021			07/24/2021 01:48	Dale L. Simmons	2263925
SM 2340B	07/21/2021			07/30/2021 16:21	Betina Topolski	2263950
SM 2540 C-2011	07/21/2021			07/23/2021 15:22	Yijie Li	2263920, 2263923, 2263924, 2263925

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 D-2011	07/21/2021			07/23/2021 15:22	Yijie Li	2263920, 2263923, 2263924, 2263925
SM 4500 F-C-2011	07/21/2021			07/24/2021 00:28	Dale L. Simmons	2263920
	07/21/2021			07/24/2021 00:43	Dale L. Simmons	2263923
	07/21/2021			07/24/2021 01:33	Dale L. Simmons	2263924
	07/21/2021			07/24/2021 01:48	Dale L. Simmons	2263925
SM 5310 B-2011	07/21/2021			08/02/2021 16:08	Madeline Gruver	2263921
	07/21/2021			08/02/2021 16:21	Madeline Gruver	2263926
	07/21/2021			08/02/2021 16:34	Madeline Gruver	2263927
	07/21/2021			08/02/2021 17:14	Madeline Gruver	2263928