Chemical Analysis Report

NW-DIST-2022-02-07-01

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

Event Description: **Eastern Lakes Run**
Request ID: **RQ-2022-01-31-52**
Customer: **NW-DIST**
Project ID: **SMP**

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

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

Certified by: Colin Wright, Program Administrator

Date Certified: 25-FEB-2022 09:11

NON-CONFORMANCE REPORT INCLUDED

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: Holly Lake Center **Collection Date/Time: 02/02/2022 12:25**

Field ID: G4NW0517 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2303931	EPA 300.0 Rev. 2.1	Chloride	3.2		mg Cl/L	P409772	
		Sulfate	0.60		mg SO4/L	P409781	
	SM 2320 B-2011	Total Alkalinity	1.9	I	mg CaCO3/L	P409649	
	SM 2540 C-2011	TDS	18	I	mg/L	P409977	
	SM 2540 D-2011	TSS	2	I	mg/L	P409969	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P409651	
2303932	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P409950	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P409505	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.066		mg N/L	P409704	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P409623	
	SM 5310 B-2011	Organic Carbon	4.2		mg C/L	P410065	

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: Kings Lake **Collection Date/Time: 02/02/2022 11:20**

Field ID: G4NW0537 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2303933	EPA 300.0 Rev. 2.1	Chloride	3.4		mg Cl/L	P409772	
		Sulfate	0.84		mg SO4/L	P409781	
	SM 2320 B-2011	Total Alkalinity	1.7	I	mg CaCO3/L	P409649	
	SM 2540 C-2011	TDS	19	I	mg/L	P409977	
	SM 2540 D-2011	TSS	2	U	mg/L	P409969	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P409651	
2303934	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P409951	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P409505	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.068		mg N/L	P409704	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P409623	
	SM 5310 B-2011	Organic Carbon	4.1		mg C/L	P410065	
2303940	EPA 200.7 Rev. 4.4	Calcium	0.98		mg/L	P409595	
		Iron	460		ug/L	P409595	
		Magnesium	0.57		mg/L	P409595	
		Potassium	0.30	U	mg/L	P409595	
		Sodium	1.9	I	mg/L	P409595	
		Strontium	3.7	I	ug/L	P409595	
		Tin	3.0	U	ug/L	P409595	
		Titanium	0.75	U	ug/L	P409595	
		Vanadium	2.0	U	ug/L	P409595	
		Zinc	5.0	U	ug/L	P409595	
	EPA 200.8 Rev. 5.4	Aluminum	13	I	ug/L	P409595	
		Antimony	0.10	U	ug/L	P409595	
		Arsenic	0.58		ug/L	P409595	
		Barium	12.6		ug/L	P409595	
		Beryllium	0.010	U	ug/L	P409595	
		Boron**	10.7		ug/L	P409595	
		Cadmium	0.040	U	ug/L	P409595	
		Chromium	0.40	U	ug/L	P409820	
		Cobalt	3.26		ug/L	P409595	
		Copper	1.49		ug/L	P409595	
		Lead	0.40	U	ug/L	P409595	
		Manganese	17.3		ug/L	P409595	
		Molybdenum	0.32	I	ug/L	P409595	
		Nickel	0.50	U	ug/L	P409820	
		Selenium	0.20	U	ug/L	P409595	
		Silver	0.020	U	ug/L	P409595	
		Thallium	0.20	U	ug/L	P409595	
	SM 2340B	Hardness	4.8		mg/L	P409595	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for titanium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.
EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for aluminum and beryllium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Anderson Mill Creek **Collection Date/Time: 02/02/2022 13:40**

Field ID: G3NW0224 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2303927	EPA 300.0 Rev. 2.1	Chloride	3.7		mg Cl/L	P409772	
		Sulfate	0.54		mg SO4/L	P409781	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P409649	
	SM 2540 C-2011	TDS	15	I	mg/L	P409977	
	SM 2540 D-2011	TSS	2	U	mg/L	P409969	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P409651	
2303929	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P409950	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20		mg N/L	P409505	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.085		mg N/L	P409821	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P409622	
	SM 5310 B-2011	Organic Carbon	3.6		mg C/L	P410065	
2303938	EPA 200.7 Rev. 4.4	Calcium	0.60		mg/L	P409595	
		Iron	170		ug/L	P409595	
		Magnesium	0.50		mg/L	P409595	
		Potassium	0.30	U	mg/L	P409595	
		Sodium	1.7	I	mg/L	P409595	
		Strontium	4.2	I	ug/L	P409595	
		Tin	3.0	U	ug/L	P409595	
		Titanium	0.92	I	ug/L	P409595	
		Vanadium	2.0	U	ug/L	P409595	
		Zinc	5.0	U	ug/L	P409595	
	EPA 200.8 Rev. 5.4	Aluminum	111		ug/L	P409595	
		Antimony	0.050	U	ug/L	P409595	
		Arsenic	0.12	I	ug/L	P409595	
		Barium	11.5		ug/L	P409595	
		Beryllium	0.025	I	ug/L	P409595	
		Boron**	6.6	I	ug/L	P409595	
		Cadmium	0.020	U	ug/L	P409595	
		Chromium	0.40	U	ug/L	P409595	
		Cobalt	0.192		ug/L	P409595	
		Copper	0.40	U	ug/L	P409595	
		Lead	0.20	U	ug/L	P409595	
		Manganese	12.1		ug/L	P409595	
		Molybdenum	0.15	U	ug/L	P409595	
		Nickel	0.50	U	ug/L	P409595	
		Selenium	0.20	U	ug/L	P409595	
		Silver	0.010	U	ug/L	P409595	
		Thallium	0.10	U	ug/L	P409595	
	SM 2340B	Hardness	3.5		mg/L	P409595	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for titanium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.
EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for aluminum and beryllium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Cassidy Lake Center **Collection Date/Time: 02/02/2022 14:30**

Field ID: G3NW0183 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2303928	EPA 300.0 Rev. 2.1	Chloride	3.0		mg Cl/L	P409772	
		Sulfate	0.86		mg SO4/L	P409781	
	SM 2320 B-2011	Total Alkalinity	0.78	I	mg CaCO3/L	P409649	
	SM 2540 C-2011	TDS	15	U	mg/L	P409977	
	SM 2540 D-2011	TSS	2	I	mg/L	P409969	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P409651	
2303930	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P409950	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21		mg N/L	P409505	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P409704	
	EPA 365.1 Rev. 2.0	Total-P	0.005		mg P/L	P409623	
	SM 5310 B-2011	Organic Carbon	2.2		mg C/L	P410065	

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

Non-Conformance Report

NCR ID: 9254

Event(s)	Job(s)	Sample(s)	Test(s)
NW-DIST-2022-02-07-01			

NCR Type: SHIPPING/RECEIVING **NCR Category: Samples arrived late**

Observation: Samples arrived late, samples received within the acceptable temperature range.

Resolution: SMP Protocol Observed
Samples will be qualified as appropriate.
Customer contacted, email correspondence attached to sample submittal forms.
Biology and Chemistry supervisors were notified by email.

Authorized by/Date: Kyle Klug 2/7/2022

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report
Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P409595

Component	Result	Code	Units
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
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P409595

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	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
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	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 200.8 Rev. 5.4
Batch ID: P409820

Component	Result	Code	Units
Chromium	0.40	U	ug/L
Nickel	0.50	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409772

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409781

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409950

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409951

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409505

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409704

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409821

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409622

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409623

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

Reference Method: SM 2320 B-2011
Batch ID: P409649

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

Reference Method: SM 2540 C-2011
Batch ID: P409977

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P409969

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P409651

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P410065

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: P409595

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	106		P	85 - 115
Iron	105		P	85 - 115
Magnesium	106		P	85 - 115
Potassium	103		P	85 - 115
Sodium	105		P	85 - 115
Strontium	104		P	85 - 115
Tin	108		P	85 - 115
Titanium	105		P	85 - 115
Vanadium	98.6		P	85 - 115
Zinc	107		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P409595

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.9		P	85 - 115
Antimony	99.7		P	85 - 115
Arsenic	102		P	85 - 115
Barium	103		P	85 - 115
Beryllium	94.8		P	85 - 115
Boron	100		P	85 - 115
Cadmium	97.8		P	85 - 115
Chromium	96.9		P	85 - 115
Cobalt	100		P	85 - 115
Copper	98.6		P	85 - 115
Lead	97.4		P	85 - 115
Manganese	98.0		P	85 - 115
Molybdenum	100		P	85 - 115
Nickel	100		P	85 - 115
Selenium	98.4		P	85 - 115
Silver	105		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P409820

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chromium	97.0		P	85 - 115
Nickel	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409772

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409781

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409950

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409951

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409505

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409704

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: P409821

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409622

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409623

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

Reference Method: SM 2320 B-2011
Batch ID: P409649

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.3		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P409651

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	93 - 104

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P410065

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.4		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P409595

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303248	Calcium	103		P	80 - 120
2303248	Iron	101		P	80 - 120
2303248	Magnesium	100		P	80 - 120
2303248	Potassium	105		P	80 - 120
2303248	Sodium	101		P	80 - 120
2303248	Strontium	106		P	80 - 120
2303248	Tin	102		P	80 - 120
2303248	Vanadium	98.8		P	80 - 120
2303248	Zinc	111		P	80 - 120
2303749	Calcium	108	109	P/P	80 - 120
2303749	Iron	108	109	P/P	80 - 120
2303749	Magnesium	109	110	P/P	80 - 120
2303749	Potassium	110	110	P/P	80 - 120
2303749	Sodium	105	104	P/P	80 - 120
2303749	Strontium	106	106	P/P	80 - 120
2303749	Tin	107	110	P/P	80 - 120
2303749	Titanium	104	106	P/P	80 - 120
2303749	Vanadium	97.6	98.7	P/P	80 - 120
2303749	Zinc	106	108	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P409595

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303248	Antimony	95.4		P	80 - 120
2303248	Arsenic	103		P	80 - 120
2303248	Barium	106		P	80 - 120
2303248	Boron	107		P	80 - 120
2303248	Cadmium	101		P	80 - 120
2303248	Chromium	100		P	80 - 120
2303248	Cobalt	102		P	80 - 120
2303248	Copper	102		P	80 - 120
2303248	Lead	100		P	80 - 120
2303248	Manganese	99.7		P	80 - 120
2303248	Molybdenum	103		P	80 - 120
2303248	Nickel	102		P	80 - 120
2303248	Selenium	100		P	80 - 120
2303248	Silver	105		P	80 - 120
2303248	Thallium	106		P	80 - 120
2303749	Aluminum	98.8	100	P/P	80 - 120
2303749	Antimony	98.5	99.1	P/P	80 - 120
2303749	Arsenic	103	102	P/P	80 - 120
2303749	Barium	103	104	P/P	80 - 120
2303749	Beryllium	102	101	P/P	80 - 120
2303749	Boron	97.2	100	P/P	80 - 120
2303749	Cadmium	98.7	99.5	P/P	80 - 120
2303749	Chromium	97.3	97.1	P/P	80 - 120
2303749	Cobalt	102	102	P/P	80 - 120
2303749	Copper	101	102	P/P	80 - 120
2303749	Lead	97.7	97.6	P/P	80 - 120
2303749	Manganese	96.8	98.1	P/P	80 - 120
2303749	Molybdenum	99.9	99.6	P/P	80 - 120

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P409595

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303749	Nickel	103	105	P/P	80 - 120
2303749	Selenium	99.1	101	P/P	80 - 120
2303749	Silver	104	104	P/P	80 - 120
2303749	Thallium	103	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P409820

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2305148	Chromium	100	104	P/P	80 - 120
2305148	Nickel	103	108	P/P	80 - 120
2305387	Chromium	97.7		P	80 - 120
2305387	Nickel	104		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409772

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303729	Chloride	103		P	90 - 110
2303948	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409781

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303729	Sulfate	98.0		P	90 - 110
2303948	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409950

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303671	Ammonia-N	98.6	98.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303445	Ammonia-N	98.8	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303934	Kjeldahl Nitrogen	101	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303930	NO2NO3-N	102	102	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409821

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303775	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409622

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303773	Total-P	102	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409623

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303930	Total-P	105	104	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P409651

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303948	Fluoride	95.2	97.0	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P410065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303636	Organic Carbon	93.4	94.0	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P409595

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303749	Calcium	0.829	Spike	P	0 - 20
2303749	Iron	0.821	Spike	P	0 - 20
2303749	Magnesium	0.561	Spike	P	0 - 20
2303749	Potassium	0.246	Spike	P	0 - 20
2303749	Sodium	0.324	Spike	P	0 - 20
2303749	Strontium	0.00528	Spike	P	0 - 20
2303749	Tin	3.09	Spike	P	0 - 20
2303749	Titanium	1.14	Spike	P	0 - 20
2303749	Vanadium	1.15	Spike	P	0 - 20
2303749	Zinc	1.17	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P409595

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303749	Aluminum	1.38	Spike	P	0 - 20
2303749	Antimony	0.604	Spike	P	0 - 20
2303749	Arsenic	0.0250	Spike	P	0 - 20
2303749	Barium	0.811	Spike	P	0 - 20
2303749	Beryllium	0.975	Spike	P	0 - 20
2303749	Boron	2.83	Spike	P	0 - 20
2303749	Cadmium	0.888	Spike	P	0 - 20
2303749	Chromium	0.203	Spike	P	0 - 20
2303749	Cobalt	0.690	Spike	P	0 - 20
2303749	Copper	0.111	Spike	P	0 - 20
2303749	Lead	0.0895	Spike	P	0 - 20
2303749	Manganese	1.23	Spike	P	0 - 20
2303749	Molybdenum	0.370	Spike	P	0 - 20
2303749	Nickel	1.57	Spike	P	0 - 20
2303749	Selenium	1.39	Spike	P	0 - 20
2303749	Silver	0.132	Spike	P	0 - 20
2303749	Thallium	1.70	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P409820

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2305148	Chromium	3.83	Spike	P	0 - 20
2305148	Nickel	4.26	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409772

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303729	Chloride	0.539	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409781

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303729	Sulfate	0.745	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409950

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303671	Ammonia-N	0.180	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303445	Ammonia-N	1.24	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303934	Kjeldahl Nitrogen	1.79	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303930	NO2NO3-N	0.491	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409821

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303775	NO2NO3-N	0.494	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303773	Total-P	1.18	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303930	Total-P	1.55	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2320 B-2011
Batch ID: P409649

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303948	Total Alkalinity	0.0205	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P409977

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303730	TDS	1.77	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P409651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303948	Fluoride	1.53	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P410065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303636	Organic Carbon	0.491	Spike	P	0 - 20

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A110318
Included Lab Sample IDs: 2303938, 2303940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	95.6	98.2	P/P	90 - 110
Antimony	92.8	93.7	P/P	90 - 110
Arsenic	100	98.1	P/P	90 - 110
Barium	97.7	96.2	P/P	90 - 110
Beryllium	94.9	91.8	P/P	90 - 110
Boron	92.5	98.0	P/P	90 - 110
Cadmium	96.2	97.6	P/P	90 - 110
Chromium	94.0	95.4	P/P	90 - 110
Cobalt	99.0	96.7	P/P	90 - 110
Copper	99.6	96.6	P/P	90 - 110
Lead	93.6	94.4	P/P	90 - 110
Manganese	95.2	95.3	P/P	90 - 110
Molybdenum	97.4	97.7	P/P	90 - 110
Nickel	99.5	96.8	P/P	90 - 110
Selenium	96.7	95.1	P/P	90 - 110
Thallium	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A110319
Included Lab Sample IDs: 2303929, 2303930, 2303932, 2303934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.5	96.6	P/P	90 - 110
Kjeldahl Nitrogen	96.6	97.9	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A110321
Included Lab Sample IDs: 2303927, 2303928, 2303931, 2303933

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	96.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A110321
Included Lab Sample IDs: 2303927, 2303928, 2303931, 2303933

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A110337
Included Lab Sample IDs: 2303930, 2303932, 2303934

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A110340
Included Lab Sample IDs: 2303930, 2303932, 2303934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits

Quality Assurance Report
Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A110340
Included Lab Sample IDs: 2303930, 2303932, 2303934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A110344
Included Lab Sample IDs: 2303938, 2303940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	99.3	98.8	P/P	90 - 110
Barium	103	103	P/P	90 - 110
Cadmium	103	102	P/P	90 - 110
Lead	98.6	98.6	P/P	90 - 110
Silver	94.0	94.7	P/P	90 - 110
Silver	94.7	94.0	P/P	90 - 110
Thallium	106	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A110361
Included Lab Sample IDs: 2303929

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A110370
Included Lab Sample IDs: 2303927, 2303928, 2303931, 2303933

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	106	105	P/P	90 - 110
Sulfate	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A110408
Included Lab Sample IDs: 2303929

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	102	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A110426
Included Lab Sample IDs: 2303938, 2303940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	101	P/P	90 - 110
Calcium	105	102	P/P	90 - 110
Iron	102	102	P/P	90 - 110
Iron	105	102	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Magnesium	104	101	P/P	90 - 110
Potassium	102	99.3	P/P	90 - 110
Potassium	99.3	99.5	P/P	90 - 110
Sodium	101	102	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A110426
Included Lab Sample IDs: 2303938, 2303940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sodium	103	101	P/P	90 - 110
Strontium	103	104	P/P	90 - 110
Strontium	105	103	P/P	90 - 110
Tin	104	105	P/P	90 - 110
Tin	106	104	P/P	90 - 110
Titanium	101	102	P/P	90 - 110
Titanium	103	101	P/P	90 - 110
Vanadium	103	103	P/P	90 - 110
Vanadium	104	103	P/P	90 - 110
Zinc	105	104	P/P	90 - 110
Zinc	108	105	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A110450
Included Lab Sample IDs: 2303940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	97.0	96.0	P/P	90 - 110
Nickel	101	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A110454
Included Lab Sample IDs: 2303929, 2303930, 2303932, 2303934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	98.3	P/P	90 - 110
Ammonia-N	98.6	98.5	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A110496
Included Lab Sample IDs: 2303929, 2303930, 2303932, 2303934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.7	96.2	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 200.7 Rev. 4.4	Calcium	106	108	109	103			0.829
	Iron	105	108	109	101			0.821
	Magnesium	106	109	110	100			0.561
	Potassium	103	110	110	105			0.246
	Sodium	105	105	104	101			0.324
	Strontium	104	106	106	106			0.0052
	Tin	108	107	110	102			3.09
	Titanium	105	104	106				1.14
	Vanadium	98.6	97.6	98.7	98.8			1.15
	Zinc	107	106	108	111			1.17
EPA 200.8 Rev. 5.4	Aluminum	99.9	98.8	100				1.38
	Antimony	99.7	98.5	99.1	95.4			0.604
	Arsenic	102	103	102	103			0.0250
	Barium	103	103	104	106			0.811
	Beryllium	94.8	102	101				0.975
	Boron	100	97.2	100	107			2.83
	Cadmium	97.8	98.7	99.5	101			0.888
	Chromium	96.9	97.3	97.1	100			0.203
	Chromium	97.0	100	104	97.7			3.83
	Cobalt	100	102	102	102			0.690
	Copper	98.6	101	102	102			0.111
	Lead	97.4	97.7	97.6	100			0.0895
	Manganese	98.0	96.8	98.1	99.7			1.23
	Molybdenum	100	99.9	99.6	103			0.370
	Nickel	100	103	105	102			1.57
	Nickel	101	103	108	104			4.26
	Selenium	98.4	99.1	101	100			1.39
	Silver	105	104	104	105			0.132
	Thallium	103	103	105	106			1.70
EPA 300.0 Rev. 2.1	Chloride	104	103	105			0.539	
	Sulfate	103	98.0	101			0.745	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8	98.6	98.8				0.180
	Ammonia-N	98.4	98.8	100				1.24
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	110	101	103				1.79
EPA 353.2 Rev. 2.0	NO2NO3-N	100	102	102				0.491
	NO2NO3-N	102	101	102				0.494
EPA 365.1 Rev. 2.0	Total-P	104	102	99.8				1.18
	Total-P	103	105	104				1.55
SM 2320 B-2011	Total Alkalinity	98.3					0.0205	
SM 2540 C-2011	TDS						1.77	
SM 4500 F-C-2011	Fluoride	97.2	95.2	97.0				1.53
SM 5310 B-2011	Organic Carbon	93.4	93.4	94.0				0.491

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2303938, 2303940
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2303938, 2303940
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2303927, 2303928, 2303931, 2303933
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2303927, 2303928, 2303931, 2303933
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2303929, 2303930, 2303932, 2303934

Reference Method Descriptions

Method	Description	Associated Samples
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2303929, 2303930, 2303932, 2303934
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2303929, 2303930, 2303932, 2303934
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2303929, 2303930, 2303932, 2303934
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2303927, 2303928, 2303931, 2303933
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2303938, 2303940
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2303927, 2303928, 2303931, 2303933
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2303927, 2303928, 2303931, 2303933
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2303927, 2303928, 2303931, 2303933
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2303929, 2303930, 2303932, 2303934

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.7 Rev. 4.4	02/07/2022	02/09/2022 10:44	Megan Whitefoot	02/15/2022 18:54	Josef B Mick	2303938
	02/07/2022	02/09/2022 10:44	Megan Whitefoot	02/15/2022 19:31	Josef B Mick	2303940
EPA 200.8 Rev. 5.4	02/07/2022	02/09/2022 10:44	Megan Whitefoot	02/09/2022 20:00	Alexander Thompson	2303938
	02/07/2022	02/09/2022 10:44	Megan Whitefoot	02/09/2022 20:10	Alexander Thompson	2303940
	02/07/2022	02/09/2022 10:44	Megan Whitefoot	02/10/2022 15:10	Alexander Thompson	2303938
	02/07/2022	02/09/2022 10:44	Megan Whitefoot	02/10/2022 16:49	Alexander Thompson	2303940
	02/07/2022	02/15/2022 10:45	Megan Whitefoot	02/16/2022 17:42	Alexander Thompson	2303940
EPA 300.0 Rev. 2.1	02/07/2022			02/11/2022 22:56	James L Waggerby	2303927
	02/07/2022			02/11/2022 23:08	James L Waggerby	2303928
	02/07/2022			02/11/2022 23:20	James L Waggerby	2303931
	02/07/2022			02/11/2022 23:31	James L Waggerby	2303933
EPA 350.1 Rev. 2.0	02/07/2022			02/16/2022 12:46	Ping Hua	2303929
	02/07/2022			02/16/2022 12:48	Ping Hua	2303930
	02/07/2022			02/16/2022 12:49	Ping Hua	2303932
	02/07/2022			02/16/2022 13:12	Ping Hua	2303934
EPA 351.2 Rev. 2.0	02/07/2022	02/08/2022 13:34	Samantha L Bates	02/09/2022 14:07	Alexandra J Mattheus	2303929
	02/07/2022	02/08/2022 13:34	Samantha L Bates	02/09/2022 14:12	Alexandra J Mattheus	2303930
	02/07/2022	02/08/2022 13:34	Samantha L Bates	02/09/2022 14:14	Alexandra J Mattheus	2303932
	02/07/2022	02/08/2022 13:34	Samantha L Bates	02/09/2022 14:15	Alexandra J Mattheus	2303934
EPA 353.2 Rev. 2.0	02/07/2022			02/10/2022 15:17	Nathaniel J Jones	2303930
	02/07/2022			02/10/2022 15:23	Nathaniel J Jones	2303932
	02/07/2022			02/10/2022 15:24	Nathaniel J Jones	2303934
	02/07/2022			02/14/2022 16:25	Nathaniel J Jones	2303929
EPA 365.1 Rev. 2.0	02/07/2022	02/09/2022 16:20	Simonne.V. Calhoun	02/10/2022 14:48	Shengyu Ding	2303930
	02/07/2022	02/09/2022 16:20	Simonne.V. Calhoun	02/10/2022 14:49	Shengyu Ding	2303932
	02/07/2022	02/09/2022 16:20	Simonne.V. Calhoun	02/10/2022 14:50	Shengyu Ding	2303934
	02/07/2022	02/09/2022 16:20	Simonne.V. Calhoun	02/11/2022 13:06	Shengyu Ding	2303929
SM 2320 B-2011	02/07/2022			02/09/2022 17:28	Dale L. Simmons	2303927
	02/07/2022			02/09/2022 17:37	Dale L. Simmons	2303928
	02/07/2022			02/09/2022 17:46	Dale L. Simmons	2303931
	02/07/2022			02/09/2022 17:55	Dale L. Simmons	2303933
SM 2340B	02/07/2022			02/15/2022 18:54	Josef B Mick	2303938
	02/07/2022			02/15/2022 19:31	Josef B Mick	2303940
SM 2540 C-2011	02/07/2022			02/09/2022 10:46	Yijie Li	2303927
	02/07/2022			02/09/2022 10:51	Yijie Li	2303928
	02/07/2022			02/09/2022 11:03	Yijie Li	2303931
	02/07/2022			02/09/2022 11:06	Yijie Li	2303933
SM 2540 D-2011	02/07/2022			02/09/2022 10:46	Yijie Li	2303927
	02/07/2022			02/09/2022 10:51	Yijie Li	2303928
	02/07/2022			02/09/2022 11:06	Yijie Li	2303933

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 D-2011	02/07/2022			02/09/2022 11:13	Yijie Li	2303931
SM 4500 F-C-2011	02/07/2022			02/09/2022 17:28	Dale L. Simmons	2303927
	02/07/2022			02/09/2022 17:37	Dale L. Simmons	2303928
	02/07/2022			02/09/2022 17:46	Dale L. Simmons	2303931
	02/07/2022			02/09/2022 17:55	Dale L. Simmons	2303933
SM 5310 B-2011	02/07/2022			02/17/2022 23:02	Khloe J Berg	2303929
	02/07/2022			02/17/2022 23:24	Khloe J Berg	2303930
	02/07/2022			02/17/2022 23:46	Khloe J Berg	2303932
	02/07/2022			02/18/2022 00:05	Khloe J Berg	2303934