

Chemical Analysis Report

NE-DIST-2022-12-20-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Nassau Makeup**
Request ID: **RQ-2022-12-05-50**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

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: Liang Lin, Environmental Administrator

Date Certified: 23-JAN-2023 11:07

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

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: Unnamed Trib To Mills Cr @ CR 108 W of Minor Ln **Collection Date/Time: 12/19/2022 11:20**

Field ID: 19010159

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2376449	DEP SOP: NU-094-1	Color (true)	27		PCU	P423775	
	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P423790	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P423939	
		Sulfate	3.9		mg SO4/L	P423942	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P424044	
	SM 2540 C-2015	TDS	55		mg/L	P424114	
	SM 2540 D-2015	TSS	6	I	mg/L	P424051	
2376452	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P424240	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P424283	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.23		mg N/L	P423873	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P423899	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P424106	
2376461	SM 5310 B-2011	Organic Carbon	6.6		mg C/L	P423876	
	EPA 200.7 Rev. 4.4	Calcium	2.08		mg/L	P423800	
		Iron	2.01E+03		ug/L	P423800	
		Magnesium	0.99		mg/L	P423800	
		Potassium	0.30	U	mg/L	P423800	
		Sodium	8.9		mg/L	P423800	
		Strontium	12.4		ug/L	P423800	
		Tin	3.0	U	ug/L	P423800	
		Titanium	0.75	U	ug/L	P423800	
		Vanadium	2.0	U	ug/L	P423800	
		Zinc	5.0	U	ug/L	P423800	
	EPA 200.8 Rev. 5.4	Aluminum	237		ug/L	P423800	
		Antimony	0.050	U	ug/L	P423800	
		Arsenic	0.17	I	ug/L	P423800	
		Barium	18.6		ug/L	P423800	
		Beryllium	0.041		ug/L	P423800	
		Boron	12.2		ug/L	P423800	
		Cadmium	0.020	U	ug/L	P423800	
		Chromium	0.40	U	ug/L	P423800	
		Cobalt	0.344		ug/L	P423800	
		Copper	0.40	U	ug/L	P423800	
		Lead	0.28	I	ug/L	P424719	
		Manganese	11.4		ug/L	P423800	
		Molybdenum	0.15	U	ug/L	P423800	
		Nickel	0.58	I	ug/L	P423800	
		Selenium	0.20	U	ug/L	P423800	
		Silver	0.010	U	ug/L	P423800	
		Thallium	0.10	U	ug/L	P423800	
	SM 2340 B-2011	Hardness	9.3		mg/L	P423800	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Calkins Cr @ Cr 127

Collection Date/Time: 12/19/2022 12:30

Field ID: 19010105

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2376450	DEP SOP: NU-094-1	Color (true)	260		PCU	P423775	
	EPA 180.1 Rev. 2.0	Turbidity	7.9		NTU	P423790	
	EPA 300.0 Rev. 2.1	Chloride	8.9		mg Cl/L	P423940	
		Sulfate	0.20	U	mg SO4/L	P423943	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P424044	
	SM 2540 C-2015	TDS	52		mg/L	P424114	
	SM 2540 D-2015	TSS	4	I	mg/L	P424051	
	SM 4500-F- C-2011	Fluoride	0.025	I	mg F/L	P424240	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P424283	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P423873	
2376453	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P423899	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P424106	
	SM 5310 B-2011	Organic Carbon	27		mg C/L	P423876	
	EPA 200.7 Rev. 4.4	Calcium	1.61		mg/L	P423800	
		Iron	1.22E+03		ug/L	P423800	
		Magnesium	1.09		mg/L	P423800	
		Potassium	0.30	U	mg/L	P423800	
		Sodium	3.8		mg/L	P423800	
		Strontium	8.2		ug/L	P423800	
		Tin	3.0	U	ug/L	P423800	
		Titanium	11.9		ug/L	P423800	
		Vanadium	2.0	U	ug/L	P423800	
		Zinc	5.0	U	ug/L	P423800	
		Aluminum	510		ug/L	P423800	
		Antimony	0.050	U	ug/L	P423800	
		Arsenic	0.32		ug/L	P423800	
		Barium	15.2		ug/L	P423800	
		Beryllium	0.042		ug/L	P423800	
		Boron	15.4		ug/L	P423800	
		Cadmium	0.020	U	ug/L	P423800	
		Chromium	0.71	I	ug/L	P423800	
		Cobalt	0.379		ug/L	P423800	
		Copper	0.44	I	ug/L	P423800	
		Lead	0.42		ug/L	P424719	
		Manganese	19.2		ug/L	P423800	
		Molybdenum	0.15	U	ug/L	P423800	
		Nickel	0.59	I	ug/L	P423800	
		Selenium	0.20	U	ug/L	P423800	
		Silver	0.010	U	ug/L	P423800	
		Thallium	0.10	U	ug/L	P423800	
	SM 2340 B-2011	Hardness	8.5		mg/L	P423800	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Pigeon Creek At US 1

Collection Date/Time: 12/19/2022 10:55

Field ID: 19010099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2376451	DEP SOP: NU-094-1	Color (true)	120		PCU	P423775	
	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P423790	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P423940	
		Sulfate	3.6		mg SO4/L	P423943	
	SM 2320 B-2011	Total Alkalinity	7.6		mg CaCO3/L	P424044	
	SM 2540 C-2015	TDS	52		mg/L	P424114	
	SM 2540 D-2015	TSS	2	U	mg/L	P424051	
	SM 4500-F- C-2011	Fluoride	0.026	I	mg F/L	P424240	
2376454	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P424283	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25		mg N/L	P423873	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P423899	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P424106	
	SM 5310 B-2011	Organic Carbon	9.4		mg C/L	P423876	
2376463	EPA 200.7 Rev. 4.4	Calcium	4.80		mg/L	P423800	
		Iron	690		ug/L	P423800	
		Magnesium	1.09		mg/L	P423800	
		Potassium	1.0	I	mg/L	P423800	
		Sodium	7.0		mg/L	P423800	
		Strontium	16.9		ug/L	P423800	
		Tin	3.0	U	ug/L	P423800	
		Titanium	1.5	I	ug/L	P423800	
		Vanadium	2.0	U	ug/L	P423800	
		Zinc	5.0	U	ug/L	P423800	
	EPA 200.8 Rev. 5.4	Aluminum	177		ug/L	P423800	
		Antimony	0.050	U	ug/L	P423800	
		Arsenic	0.29		ug/L	P423800	
		Barium	16.0		ug/L	P423800	
		Beryllium	0.013	I	ug/L	P423800	
		Boron	18.0		ug/L	P423800	
		Cadmium	0.020	U	ug/L	P423800	
		Chromium	0.40	U	ug/L	P423800	
		Cobalt	0.060	I	ug/L	P423800	
		Copper	0.40	U	ug/L	P423800	
		Lead	0.20	U	ug/L	P423800	
		Manganese	3.74		ug/L	P423800	
		Molybdenum	0.15	U	ug/L	P423800	
		Nickel	0.50	U	ug/L	P423800	
		Selenium	0.20	U	ug/L	P423800	
		Silver	0.010	U	ug/L	P423800	
		Thallium	0.10	U	ug/L	P423800	
		Hardness	16.5		mg/L	P423800	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P423775

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P423790

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P423800

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: P423800

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	0.36	I	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: P424719

Component	Result	Code	Units
Lead	0.20	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423939

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423940

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423942

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423943

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424283

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423873

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423899

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424106

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

Reference Method: SM 2320 B-2011
Batch ID: P424044

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2015
Batch ID: P424114

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P424051

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P424240

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P423876

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P423775

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P423790

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P423800

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	101		P	85 - 115
Magnesium	97.6		P	85 - 115
Potassium	96.3		P	85 - 115
Sodium	98.7		P	85 - 115
Strontium	108		P	85 - 115
Tin	96.6		P	85 - 115
Titanium	99.2		P	85 - 115
Vanadium	98.5		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P423800

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	104		P	85 - 115
Antimony	106		P	85 - 115
Arsenic	102		P	85 - 115
Barium	105		P	85 - 115
Beryllium	97.1		P	85 - 115
Boron	106		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	100		P	85 - 115
Cobalt	101		P	85 - 115
Copper	100		P	85 - 115
Lead	95.5		P	85 - 115
Manganese	101		P	85 - 115
Molybdenum	102		P	85 - 115
Nickel	100		P	85 - 115
Selenium	105		P	85 - 115
Silver	101		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P424719

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Lead	96.2		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423939

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423940

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423942

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423943

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424283

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423873

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423899

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424106

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

Reference Method: SM 2320 B-2011
Batch ID: P424044

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.0		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P424114

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	94.8		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P424051

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.0		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P424240

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.9		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P423876

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P423800

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2376206	Calcium	105	105	P/P	80 - 120
2376206	Iron	105	105	P/P	80 - 120
2376206	Magnesium	102	101	P/P	80 - 120
2376206	Potassium	101	101	P/P	80 - 120
2376206	Sodium	102		P	80 - 120
2376206	Strontium	100	99.2	P/P	80 - 120
2376206	Tin	99.7	99.2	P/P	80 - 120
2376206	Titanium	102	101	P/P	80 - 120
2376206	Vanadium	99.7	98.7	P/P	80 - 120
2376206	Zinc	102	101	P/P	80 - 120
2376782	Calcium	108		P	80 - 120
2376782	Iron	109		P	80 - 120
2376782	Magnesium	105		P	80 - 120
2376782	Potassium	106		P	80 - 120
2376782	Sodium	107		P	80 - 120
2376782	Strontium	103		P	80 - 120
2376782	Tin	106		P	80 - 120
2376782	Titanium	107		P	80 - 120
2376782	Vanadium	105		P	80 - 120
2376782	Zinc	106		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P423800

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2376206	Aluminum	104	103	P/P	80 - 120
2376206	Antimony	106	104	P/P	80 - 120
2376206	Arsenic	103	102	P/P	80 - 120
2376206	Barium	105	104	P/P	80 - 120
2376206	Beryllium	96.6	96.6	P/P	80 - 120
2376206	Boron	102	101	P/P	80 - 120
2376206	Cadmium	107	105	P/P	80 - 120
2376206	Chromium	100	99.6	P/P	80 - 120
2376206	Cobalt	102	101	P/P	80 - 120
2376206	Copper	103	103	P/P	80 - 120
2376206	Lead	96.1	94.6	P/P	80 - 120
2376206	Manganese	102	100	P/P	80 - 120
2376206	Molybdenum	100	100	P/P	80 - 120
2376206	Nickel	102	102	P/P	80 - 120
2376206	Selenium	104	104	P/P	80 - 120
2376206	Silver	99.5	99.2	P/P	80 - 120
2376206	Thallium	103	103	P/P	80 - 120
2376782	Aluminum	103		P	80 - 120
2376782	Antimony	105		P	80 - 120
2376782	Arsenic	102		P	80 - 120
2376782	Barium	104		P	80 - 120
2376782	Beryllium	96.8		P	80 - 120
2376782	Boron	106		P	80 - 120
2376782	Cadmium	103		P	80 - 120
2376782	Chromium	101		P	80 - 120
2376782	Cobalt	100		P	80 - 120
2376782	Copper	101		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P423800

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2376782	Lead	96.7		P	80 - 120
2376782	Manganese	100		P	80 - 120
2376782	Molybdenum	101		P	80 - 120
2376782	Nickel	102		P	80 - 120
2376782	Selenium	103		P	80 - 120
2376782	Silver	102		P	80 - 120
2376782	Thallium	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P424719

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2376205	Lead	94.5	95.5	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423939

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375974	Chloride	102		P	90 - 110
2375975	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2376630	Chloride	103		P	90 - 110
2376772	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423942

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375974	Sulfate	102		P	90 - 110
2375975	Sulfate	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2376630	Sulfate	103		P	90 - 110
2376772	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2376452	Ammonia-N	97.4	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423873

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423873

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2376452	Kjeldahl Nitrogen	104	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2376298	NO2NO3-N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424106

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2376487	Total-P	104	103	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P424240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2376771	Fluoride	102	101	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P423876

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2376454	Organic Carbon	96.4	98.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P423775

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376297	Color (true)	1.13	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P423790

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376297	Turbidity	2.67	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P423800

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376206	Calcium	0.121	Spike	P	0 - 20
2376206	Iron	0.0598	Spike	P	0 - 20
2376206	Magnesium	0.921	Spike	P	0 - 20
2376206	Potassium	0.0872	Spike	P	0 - 20
2376206	Sodium	1.02	Spike	P	0 - 20
2376206	Strontium	0.884	Spike	P	0 - 20
2376206	Tin	0.522	Spike	P	0 - 20
2376206	Titanium	1.35	Spike	P	0 - 20
2376206	Vanadium	1.02	Spike	P	0 - 20
2376206	Zinc	1.07	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P423800

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376206	Aluminum	0.685	Spike	P	0 - 20
2376206	Antimony	1.80	Spike	P	0 - 20
2376206	Arsenic	1.34	Spike	P	0 - 20
2376206	Barium	0.627	Spike	P	0 - 20
2376206	Beryllium	0.0765	Spike	P	0 - 20
2376206	Boron	0.997	Spike	P	0 - 20
2376206	Cadmium	2.04	Spike	P	0 - 20
2376206	Chromium	0.464	Spike	P	0 - 20
2376206	Cobalt	0.139	Spike	P	0 - 20
2376206	Copper	0.151	Spike	P	0 - 20
2376206	Lead	1.62	Spike	P	0 - 20
2376206	Manganese	1.23	Spike	P	0 - 20
2376206	Molybdenum	0.177	Spike	P	0 - 20
2376206	Nickel	0.0295	Spike	P	0 - 20
2376206	Selenium	0.198	Spike	P	0 - 20
2376206	Silver	0.264	Spike	P	0 - 20
2376206	Thallium	0.290	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P424719

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376205	Lead	0.978	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423939

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375974	Chloride	1.53	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376630	Chloride	0.265	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375974	Sulfate	0.953	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376630	Sulfate	0.930	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376452	Ammonia-N	0.285	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423873

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376452	Kjeldahl Nitrogen	2.19	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376298	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424106

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376487	Total-P	1.32	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P424044

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376295	Total Alkalinity	1.21	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P424114

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376535	TDS	2.78	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P424240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376771	Fluoride	0.958	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P423876

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376454	Organic Carbon	1.31	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A116559

Included Lab Sample IDs: 2376449, 2376450, 2376451

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

Reference Method: DEP SOP: NU-094-1

Run ID: A116574

Included Lab Sample IDs: 2376449, 2376450, 2376451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 110
Color (true)	99.3	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A116579

Included Lab Sample IDs: 2376449, 2376450, 2376451

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

Reference Method: SM 5310 B-2011

Run ID: A116614

Included Lab Sample IDs: 2376452, 2376453, 2376454

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.1	99.6	P/P	90 - 110
Organic Carbon	99.6	98.7	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A116621

Included Lab Sample IDs: 2376461, 2376462, 2376463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	103	P/P	90 - 110
Calcium	103	100	P/P	90 - 110
Iron	103	103	P/P	90 - 110
Iron	103	101	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Magnesium	101	99.2	P/P	90 - 110
Potassium	98.8	99.5	P/P	90 - 110
Potassium	99.5	97.3	P/P	90 - 110
Sodium	101	102	P/P	90 - 110
Sodium	102	99.4	P/P	90 - 110
Strontium	97.2	99.6	P/P	90 - 110
Strontium	99.6	96.7	P/P	90 - 110
Tin	100	97.4	P/P	90 - 110
Tin	96.1	100	P/P	90 - 110
Titanium	100	97.2	P/P	90 - 110
Titanium	95.8	100	P/P	90 - 110
Vanadium	95.3	99.8	P/P	90 - 110
Vanadium	99.8	96.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A116621

Included Lab Sample IDs: 2376461, 2376462, 2376463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Zinc	95.4	100	P/P	90 - 110
Zinc	100	96.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A116630

Included Lab Sample IDs: 2376452, 2376453, 2376454

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	106	106	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A116697

Included Lab Sample IDs: 2376449, 2376450, 2376451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.0	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116710

Included Lab Sample IDs: 2376452, 2376453, 2376454

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	90.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116747

Included Lab Sample IDs: 2376452, 2376453, 2376454

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	100	P/P	90 - 110
Total-P	98.5	102	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A116780

Included Lab Sample IDs: 2376449, 2376450, 2376451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	103	P/P	90 - 110
Fluoride	103	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116800

Included Lab Sample IDs: 2376452, 2376453, 2376454

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	97.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A116933

Included Lab Sample IDs: 2376461, 2376462, 2376463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	103	104	P/P	90 - 110
Antimony	105	106	P/P	90 - 110
Arsenic	103	104	P/P	90 - 110
Barium	103	102	P/P	90 - 110
Beryllium	101	102	P/P	90 - 110
Boron	102	101	P/P	90 - 110
Cadmium	104	105	P/P	90 - 110
Chromium	99.5	100	P/P	90 - 110
Cobalt	101	99.5	P/P	90 - 110
Copper	101	101	P/P	90 - 110
Lead	95.1	96.5	P/P	90 - 110
Manganese	101	101	P/P	90 - 110
Molybdenum	102	102	P/P	90 - 110
Nickel	101	99.6	P/P	90 - 110
Selenium	106	105	P/P	90 - 110
Silver	101	103	P/P	90 - 110
Thallium	103	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A116999

Included Lab Sample IDs: 2376461, 2376462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	93.3	93.4	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			LCS	Precision	MS
							SMP	
DEP SOP: NU-094-1	Color (true)	100					1.13	
EPA 180.1 Rev. 2.0	Turbidity	101					2.67	
EPA 200.7 Rev. 4.4	Calcium	101	105	105	108			0.121
	Iron	101	105	105	109			0.0598
	Magnesium	97.6	102	101	105			0.921
	Potassium	96.3	101	101	106			0.0872
	Sodium	98.7	102	107				1.02
	Strontium	108	100	99.2	103			0.884
	Tin	96.6	99.7	99.2	106			0.522
	Titanium	99.2	102	101	107			1.35
	Vanadium	98.5	99.7	98.7	105			1.02
	Zinc	102	102	101	106			1.07
EPA 200.8 Rev. 5.4	Aluminum	104	104	103	103			0.685
	Antimony	106	106	104	105			1.80
	Arsenic	102	103	102	102			1.34
	Barium	105	105	104	104			0.627
	Beryllium	97.1	96.6	96.6	96.8			0.0765
	Boron	106	102	101	106			0.997
	Cadmium	104	107	105	103			2.04
	Chromium	100	100	99.6	101			0.464
	Cobalt	101	102	101	100			0.139
	Copper	100	103	103	101			0.151
	Lead	95.5	96.1	94.6	96.7			1.62
	Lead	96.2	94.5	95.5				0.978
	Manganese	101	102	100	100			1.23
	Molybdenum	102	100	100	101			0.177
	Nickel	100	102	102	102			0.0295
	Selenium	105	104	104	103			0.198
	Silver	101	99.5	99.2	102			0.264
	Thallium	103	103	103	105			0.290
EPA 300.0 Rev. 2.1	Chloride	103	102	102			1.53	
	Chloride	103	103	103			0.265	
	Sulfate	102	102	101			0.953	
	Sulfate	103	103	103			0.930	
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	97.4	97.8				0.285
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.8	104	101				2.19
EPA 353.2 Rev. 2.0	NO2NO3-N	107	102					0.0
EPA 365.1 Rev. 2.0	Total-P	102	104	103				1.32
SM 2320 B-2011	Total Alkalinity	99.0					1.21	
SM 2540 C-2015	TDS	94.8					2.78	
SM 2540 D-2015	TSS	96.0						
SM 4500-F- C-2011	Fluoride	99.9	102	101				0.958
SM 5310 B-2011	Organic Carbon	95.6	96.4	98.3				1.31

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2376449, 2376450, 2376451
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2376449, 2376450, 2376451
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2376461, 2376462, 2376463
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2376461, 2376462, 2376463

Reference Method Descriptions

Method	Description	Associated Samples
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2376449, 2376450, 2376451
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2376449, 2376450, 2376451
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2376452, 2376453, 2376454
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2376452, 2376453, 2376454
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2376452, 2376453, 2376454
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2376452, 2376453, 2376454
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2376449, 2376450, 2376451
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2376461, 2376462, 2376463
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2376449, 2376450, 2376451
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2376449, 2376450, 2376451
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2376449, 2376450, 2376451
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2376452, 2376453, 2376454

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	12/20/2022			12/20/2022 14:04	Alexis Price	2376449
	12/20/2022			12/20/2022 14:05	Alexis Price	2376451
	12/20/2022			12/20/2022 14:15	Alexis Price	2376450
EPA 180.1 Rev. 2.0	12/20/2022			12/20/2022 14:10	Chandler E Cox	2376449
	12/20/2022			12/20/2022 14:11	Chandler E Cox	2376450
	12/20/2022			12/20/2022 14:12	Chandler E Cox	2376451
EPA 200.7 Rev. 4.4	12/20/2022	12/21/2022 10:30	George D Taylor	12/21/2022 19:57	McKinley C Carter	2376461
	12/20/2022	12/21/2022 10:30	George D Taylor	12/21/2022 20:05	McKinley C Carter	2376462
	12/20/2022	12/21/2022 10:30	George D Taylor	12/21/2022 20:39	McKinley C Carter	2376463
EPA 200.8 Rev. 5.4	12/20/2022	01/19/2023 11:40	George D Taylor	01/19/2023 18:10	Emily M Philpot	2376461
	12/20/2022	01/19/2023 11:40	George D Taylor	01/19/2023 18:19	Emily M Philpot	2376462
	12/20/2022	12/21/2022 10:30	George D Taylor	01/17/2023 23:49	Emily M Philpot	2376461
	12/20/2022	12/21/2022 10:30	George D Taylor	01/17/2023 23:59	Emily M Philpot	2376462
EPA 300.0 Rev. 2.1	12/20/2022	12/21/2022 10:30	George D Taylor	01/18/2023 00:09	Emily M Philpot	2376463
	12/20/2022			12/23/2022 02:24	Anna M. Plaviak	2376449
	12/20/2022			12/23/2022 05:10	Anna M. Plaviak	2376450
EPA 350.1 Rev. 2.0	12/20/2022			12/23/2022 05:25	Anna M. Plaviak	2376451
	12/20/2022			01/09/2023 11:04	Ping Hua	2376452
	12/20/2022			01/09/2023 11:13	Ping Hua	2376453
EPA 351.2 Rev. 2.0	12/20/2022			01/09/2023 11:15	Ping Hua	2376454
	12/20/2022	12/22/2022 12:45	Simonne.V. Calhoun	01/03/2023 14:18	Samantha L Bates	2376452
	12/20/2022	12/22/2022 12:45	Simonne.V. Calhoun	01/03/2023 14:23	Samantha L Bates	2376453
EPA 353.2 Rev. 2.0	12/20/2022	12/22/2022 12:45	Simonne.V. Calhoun	01/03/2023 14:24	Samantha L Bates	2376454
	12/20/2022			12/22/2022 10:59	Beverly Y. Sanders	2376452
	12/20/2022			12/22/2022 11:00	Beverly Y. Sanders	2376453
EPA 365.1 Rev. 2.0	12/20/2022			12/22/2022 11:01	Beverly Y. Sanders	2376454
	12/20/2022	01/03/2023 14:10	Adam P Silver	01/05/2023 13:39	James L Waggeberby	2376452
	12/20/2022	01/03/2023 14:10	Adam P Silver	01/05/2023 13:40	James L Waggeberby	2376453
SM 2320 B-2011	12/20/2022	01/03/2023 14:10	Adam P Silver	01/05/2023 14:49	James L Waggeberby	2376454
	12/20/2022			12/29/2022 18:36	Dale L. Simmons	2376449
	12/20/2022			12/29/2022 18:41	Dale L. Simmons	2376450
SM 2340 B-2011	12/20/2022			12/29/2022 18:51	Dale L. Simmons	2376451
	12/20/2022			12/21/2022 19:57	McKinley C Carter	2376461
	12/20/2022			12/21/2022 20:05	McKinley C Carter	2376462
SM 2540 C-2015	12/20/2022			12/21/2022 20:39	McKinley C Carter	2376463
	12/20/2022			12/21/2022 14:49	Yijie Li	2376449, 2376450, 2376451
	12/20/2022			12/21/2022 14:49	Yijie Li	2376449, 2376450, 2376451
SM 4500-F- C-2011	12/20/2022			01/05/2023 23:13	Dale L. Simmons	2376449
	12/20/2022			01/05/2023 23:18	Dale L. Simmons	2376450
	12/20/2022			01/05/2023 23:41	Dale L. Simmons	2376451

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	12/20/2022			12/21/2022 12:49	Khloe J Berg	2376454
	12/20/2022			12/21/2022 19:43	Khloe J Berg	2376452
	12/20/2022			12/21/2022 19:57	Khloe J Berg	2376453