

Chemical Analysis Report

CEN-DIST-2023-01-24-01

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

Event Description: **Run 4**
Request ID: **RQ-2023-01-23-24**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
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Orlando, FL 32803-3767
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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 14-FEB-2023 10:00



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: Fox Lake @ Center of West Lobe

Collection Date/Time: 01/23/2023 10:10

Field ID: G3CE0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2382403	DEP SOP: NU-094-1	Color (true)	310		PCU	P424924	
	EPA 180.1 Rev. 2.0	Turbidity	0.80	I	NTU	P424930	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P425664	
		Sulfate	20		mg SO4/L	P425176	
	SM 2320 B-2011	Total Alkalinity	15		mg CaCO3/L	P425395	
	SM 2540 C-2015	TDS	265		mg/L	P425331	
	SM 2540 D-2015	TSS	2	I	mg/L	P425212	
	SM 4500-F- C-2011	Fluoride	0.033	I	mg F/L	P425399	RPD
2382404	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P425607	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.87		mg N/L	P425242	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.052		mg N/L	P425139	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P425129	
	SM 5310 B-2011	Organic Carbon	24		mg C/L	P425251	

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: FB

Collection Date/Time: 01/23/2023 10:25

Field ID: FB_01232023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2382407	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P424925	RPD
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P424930	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P425174	
		Sulfate	0.20	U	mg SO4/L	P425176	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P425395	
	SM 2540 C-2015	TDS	15	U	mg/L	P425331	
	SM 2540 D-2015	TSS	2	U	mg/L	P425212	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P425399	
2382409	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P425607	RPD
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P425062	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P425139	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P425266	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P425251	
2382415	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P424970	RPD
		Chromium	1.0	U	ug/L	P424970	
		Cobalt	1.0	U	ug/L	P424970	
		Iron	30	U	ug/L	P424970	
		Magnesium	0.040	U	mg/L	P424970	
		Potassium	0.30	U	mg/L	P424970	
		Sodium	0.50	U	mg/L	P424970	
		Strontium	2.0	U	ug/L	P424970	
		Tin	3.0	U	ug/L	P424970	
		Titanium	0.75	U	ug/L	P424970	
		Vanadium	2.0	U	ug/L	P424970	
		Zinc	5.0	U	ug/L	P424970	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P424970	
		Antimony	0.050	U	ug/L	P424970	
		Arsenic	0.050	U	ug/L	P424970	
		Barium	0.20	U	ug/L	P424970	
		Beryllium	0.010	U	ug/L	P424970	
		Boron	2.0	U	ug/L	P424970	
		Cadmium	0.020	U	ug/L	P424970	
		Copper	0.40	U	ug/L	P424970	
		Lead	0.20	U	ug/L	P424970	
		Manganese	0.10	U	ug/L	P424970	
		Molybdenum	0.15	U	ug/L	P424970	
		Nickel	0.50	U	ug/L	P424970	
		Selenium	0.20	U	ug/L	P424970	
		Silver	0.010	U	ug/L	P424970	
		Thallium	0.10	U	ug/L	P424970	
	SM 2340 B-2011	Hardness	0.35	U	mg/L	P424970	

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: Roberts Branch @ Fort Christmas Rd N

Collection Date/Time: 01/23/2023 11:05

Field ID: G3CE0065

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2382414	EPA 200.7 Rev. 4.4	Calcium	1.80		mg/L	P424970	
		Chromium	1.0	U	ug/L	P424970	
		Cobalt	1.0	U	ug/L	P424970	
		Iron	480		ug/L	P424970	
		Magnesium	1.17		mg/L	P424970	
		Potassium	0.30	U	mg/L	P424970	
		Sodium	8.4		mg/L	P424970	
		Strontium	14.9		ug/L	P424970	
		Tin	3.0	U	ug/L	P424970	
		Titanium	1.1	I	ug/L	P424970	
		Vanadium	2.0	U	ug/L	P424970	
		Zinc	7.3	I	ug/L	P424970	
	EPA 200.8 Rev. 5.4	Aluminum	243		ug/L	P424970	
		Antimony	0.050	U	ug/L	P424970	
		Arsenic	0.17	I	ug/L	P424970	
		Barium	6.98		ug/L	P424970	
		Beryllium	0.029	I	ug/L	P424970	
		Boron	13.7		ug/L	P424970	
		Cadmium	0.020	U	ug/L	P424970	
		Copper	0.40	U	ug/L	P424970	
		Lead	0.20	U	ug/L	P424970	
		Manganese	4.83		ug/L	P424970	
		Molybdenum	0.15	U	ug/L	P424970	
		Nickel	0.50	U	ug/L	P424970	
		Selenium	0.20	U	ug/L	P424970	
		Silver	0.010	U	ug/L	P424970	
		Thallium	0.10	U	ug/L	P424970	
	SM 2340 B-2011	Hardness	9.3		mg/L	P424970	

Sample Location: Unnamed Branch @ Bridgeway Rd

Collection Date/Time: 01/23/2023 11:40

Field ID: G2CE0245

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2382405	DEP SOP: NU-094-1	Color (true)	45	A	PCU	P424925	
	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P424930	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P425174	
		Sulfate	7.1		mg SO4/L	P425176	
	SM 2320 B-2011	Total Alkalinity	59		mg CaCO3/L	P425395	
	SM 2540 C-2015	TDS	114		mg/L	P425331	
	SM 2540 D-2015	TSS	2	I	mg/L	P425212	
	SM 4500-F- C-2011	Fluoride	0.061	I	mg F/L	P425399	RPD
2382406	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P425607	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37		mg N/L	P425002	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P425139	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P425129	
	SM 5310 B-2011	Organic Carbon	9.9		mg C/L	P425251	

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: P424924

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P424925

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P424930

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P424970

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Chromium	1.0	U	ug/L
Cobalt	1.0	U	ug/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: P424970

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
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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425174

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425176

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425664

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425607

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425002

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425062

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425242

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425139

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425129

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425266

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

Reference Method: SM 2320 B-2011
Batch ID: P425395

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

Reference Method: SM 2540 C-2015
Batch ID: P425331

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P425212

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P425399

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P425251

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: P424924

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.2		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P424925

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P424930

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P424970

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	80 - 120
Chromium	98.9		P	80 - 120
Cobalt	101		P	80 - 120
Iron	103		P	80 - 120
Magnesium	102		P	80 - 120
Potassium	103		P	80 - 120
Sodium	102		P	80 - 120
Strontium	99.6		P	80 - 120
Tin	99.2		P	80 - 120
Titanium	99.1		P	80 - 120
Vanadium	99.2		P	80 - 120
Zinc	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P424970

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.9		P	85 - 115
Antimony	94.7		P	85 - 115
Arsenic	99.3		P	85 - 115
Barium	101		P	85 - 115
Beryllium	97.9		P	80 - 120
Boron	98.2		P	85 - 115
Cadmium	98.5		P	85 - 115
Copper	100		P	85 - 115
Lead	91.9		P	85 - 115
Manganese	97.7		P	85 - 115
Molybdenum	93.1		P	85 - 115
Nickel	100		P	85 - 115
Selenium	99.8		P	80 - 120
Silver	94.6		P	85 - 115
Thallium	94.4		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425174

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425176

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425664

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	94.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425607

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425002

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425062

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425242

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425139

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425129

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425266

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

Reference Method: SM 2320 B-2011
Batch ID: P425395

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.0		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P425331

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	96.9		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P425212

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	99.0		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P425399

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P425251

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P424970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382074	Calcium	106		P	80 - 120
2382074	Chromium	101	99.7	P/P	80 - 120
2382074	Cobalt	101	102	P/P	80 - 120
2382074	Iron	105	106	P/P	80 - 120
2382074	Magnesium	105		P	80 - 120
2382074	Potassium	103	104	P/P	80 - 120
2382074	Sodium	105		P	80 - 120
2382074	Strontium	100	101	P/P	80 - 120
2382074	Tin	103	103	P/P	80 - 120
2382074	Titanium	101	101	P/P	80 - 120
2382074	Vanadium	102	101	P/P	80 - 120
2382074	Zinc	103	102	P/P	80 - 120
2382216	Calcium	104		P	80 - 120
2382216	Chromium	102		P	80 - 120
2382216	Cobalt	102		P	80 - 120
2382216	Iron	104		P	80 - 120
2382216	Magnesium	101		P	80 - 120
2382216	Potassium	103		P	80 - 120
2382216	Sodium	105		P	80 - 120
2382216	Strontium	101		P	80 - 120
2382216	Tin	102		P	80 - 120
2382216	Titanium	104		P	80 - 120
2382216	Vanadium	103		P	80 - 120
2382216	Zinc	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P424970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382074	Aluminum	97.8	99.0	P/P	80 - 120
2382074	Antimony	98.4	99.4	P/P	80 - 120
2382074	Arsenic	102	103	P/P	80 - 120
2382074	Barium	103	104	P/P	80 - 120
2382074	Beryllium	101	102	P/P	80 - 120
2382074	Boron	99.4	100	P/P	80 - 120
2382074	Cadmium	103	105	P/P	80 - 120
2382074	Copper	98.8	99.6	P/P	80 - 120
2382074	Lead	93.5	95.8	P/P	80 - 120
2382074	Manganese	101	102	P/P	80 - 120
2382074	Molybdenum	97.0	98.6	P/P	80 - 120
2382074	Nickel	101	102	P/P	80 - 120
2382074	Selenium	99.5	101	P/P	80 - 120
2382074	Silver	96.4	97.1	P/P	80 - 120
2382074	Thallium	97.4	101	P/P	80 - 120
2382216	Aluminum	98.3		P	80 - 120
2382216	Antimony	99.5		P	80 - 120
2382216	Arsenic	101		P	80 - 120
2382216	Barium	105		P	80 - 120
2382216	Beryllium	101		P	80 - 120
2382216	Boron	98.2		P	80 - 120
2382216	Cadmium	104		P	80 - 120
2382216	Copper	100		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P424970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382216	Lead	94.1		P	80 - 120
2382216	Manganese	104		P	80 - 120
2382216	Molybdenum	97.7		P	80 - 120
2382216	Nickel	103		P	80 - 120
2382216	Selenium	102		P	80 - 120
2382216	Silver	97.0		P	80 - 120
2382216	Thallium	98.0		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425174

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382230	Chloride	98.9		P	90 - 110
2382405	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425176

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382230	Sulfate	94.2		P	90 - 110
2382405	Sulfate	99.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425664

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382684	Chloride	95.9		P	90 - 110
2382767	Chloride	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425607

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382578	Ammonia-N	98.8	96.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425002

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382386	Kjeldahl Nitrogen	103	95.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425062

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382568	Kjeldahl Nitrogen	104	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425242

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383444	Kjeldahl Nitrogen	110	109	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425139

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382342	NO2NO3-N	98.6	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425129

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382375	Total-P	107	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381953	Total-P	103	102	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P425399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382909	Fluoride	103	100	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P425251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383498	Organic Carbon	95.4	97.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P424924

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382374	Color (true)	0.975	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P424925

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382405	Color (true)	1.62	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P424930

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382289	Turbidity	1.26	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P424970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382074	Calcium	0.234	Spike	P	0 - 20
2382074	Chromium	0.984	Spike	P	0 - 20
2382074	Cobalt	0.974	Spike	P	0 - 20
2382074	Iron	0.381	Spike	P	0 - 20
2382074	Magnesium	0.702	Spike	P	0 - 20
2382074	Potassium	1.13	Spike	P	0 - 20
2382074	Sodium	0.398	Spike	P	0 - 20
2382074	Strontium	0.648	Spike	P	0 - 20
2382074	Tin	0.193	Spike	P	0 - 20
2382074	Titanium	0.210	Spike	P	0 - 20
2382074	Vanadium	0.651	Spike	P	0 - 20
2382074	Zinc	0.357	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P424970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382074	Aluminum	1.10	Spike	P	0 - 20
2382074	Antimony	1.09	Spike	P	0 - 20
2382074	Arsenic	1.39	Spike	P	0 - 20
2382074	Barium	1.10	Spike	P	0 - 20
2382074	Beryllium	0.497	Spike	P	0 - 20
2382074	Boron	0.527	Spike	P	0 - 20
2382074	Cadmium	1.71	Spike	P	0 - 20
2382074	Copper	0.792	Spike	P	0 - 20
2382074	Lead	2.51	Spike	P	0 - 20
2382074	Manganese	1.34	Spike	P	0 - 20
2382074	Molybdenum	1.53	Spike	P	0 - 20
2382074	Nickel	0.916	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P424970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382074	Selenium	1.58	Spike	P	0 - 20
2382074	Silver	0.730	Spike	P	0 - 20
2382074	Thallium	3.15	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382230	Chloride	0.406	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425176

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382230	Sulfate	0.354	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382684	Chloride	0.972	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382578	Ammonia-N	1.99	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425002

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382386	Kjeldahl Nitrogen	5.29	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425062

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382568	Kjeldahl Nitrogen	2.29	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383444	Kjeldahl Nitrogen	0.457	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425139

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382342	NO2NO3-N	1.06	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425129

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382375	Total-P	1.72	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381953	Total-P	1.20	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P425395

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382909	Total Alkalinity	0.110	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P425331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382201	TDS	6.71	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P425399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382909	Fluoride	1.95	Spike	F	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P425251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383498	Organic Carbon	1.61	Spike	P	0 - 20

Quality Assurance Report

Precision

* 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: A117051

Included Lab Sample IDs: 2382405, 2382407

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Chloride	98.9	100	P/P	90 - 110
Sulfate	97.2	98.5	P/P	90 - 110
Sulfate	98.5	98.9	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A117071

Included Lab Sample IDs: 2382403, 2382405, 2382407

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 110
Color (true)	101	99.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A117073

Included Lab Sample IDs: 2382403, 2382405, 2382407

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117153

Included Lab Sample IDs: 2382406

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.1	97.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A117158

Included Lab Sample IDs: 2382404, 2382406, 2382409

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117161

Included Lab Sample IDs: 2382409

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.7	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117189

Included Lab Sample IDs: 2382404, 2382406

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A117202

Included Lab Sample IDs: 2382404, 2382406, 2382409

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117232

Included Lab Sample IDs: 2382409

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	97.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A117247

Included Lab Sample IDs: 2382414, 2382415

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	104	P/P	90 - 110
Chromium	100	101	P/P	90 - 110
Chromium	102	99.7	P/P	90 - 110
Cobalt	102	103	P/P	90 - 110
Cobalt	105	102	P/P	90 - 110
Iron	99.7	103	P/P	90 - 110
Magnesium	100	103	P/P	90 - 110
Potassium	99.8	103	P/P	90 - 110
Sodium	100	102	P/P	90 - 110
Strontium	102	103	P/P	90 - 110
Strontium	100	102	P/P	90 - 110
Tin	100	98.3	P/P	90 - 110
Tin	97.7	99.5	P/P	90 - 110
Titanium	101	98.3	P/P	90 - 110
Titanium	98.7	100	P/P	90 - 110
Vanadium	100	101	P/P	90 - 110
Vanadium	102	99.7	P/P	90 - 110
Zinc	100	101	P/P	90 - 110
Zinc	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117258

Included Lab Sample IDs: 2382404

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.7	93.9	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A117270

Included Lab Sample IDs: 2382403, 2382405, 2382407

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.8	95.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A117270

Included Lab Sample IDs: 2382403, 2382405, 2382407

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A117283

Included Lab Sample IDs: 2382414

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	102	P/P	95 - 105
Iron	103	104	P/P	95 - 105
Magnesium	103	103	P/P	95 - 105
Potassium	103	104	P/P	95 - 105
Sodium	100	102	P/P	95 - 105

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117289

Included Lab Sample IDs: 2382414, 2382415

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117308

Included Lab Sample IDs: 2382414, 2382415

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.2	98.5	P/P	90 - 110
Aluminum	98.5	98.4	P/P	90 - 110
Antimony	94.8	95.7	P/P	90 - 110
Antimony	95.7	94.7	P/P	90 - 110
Arsenic	98.2	98.8	P/P	90 - 110
Arsenic	98.8	97.9	P/P	90 - 110
Barium	100	100	P/P	90 - 110
Barium	99.2	100	P/P	90 - 110
Boron	96.2	95.3	P/P	90 - 110
Boron	96.6	96.2	P/P	90 - 110
Cadmium	98.4	99.5	P/P	90 - 110
Cadmium	99.5	98.4	P/P	90 - 110
Copper	97.7	98.3	P/P	90 - 110
Copper	98.3	97.2	P/P	90 - 110
Lead	95.3	96.0	P/P	90 - 110
Lead	96.0	95.2	P/P	90 - 110
Manganese	98.6	99.7	P/P	90 - 110
Manganese	99.7	99.6	P/P	90 - 110
Molybdenum	92.9	93.3	P/P	90 - 110
Molybdenum	93.3	92.6	P/P	90 - 110
Nickel	97.9	99.6	P/P	90 - 110
Nickel	99.6	97.8	P/P	90 - 110
Selenium	97.2	99.9	P/P	90 - 110
Selenium	99.9	99.3	P/P	90 - 110
Silver	95.5	96.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117308

Included Lab Sample IDs: 2382414, 2382415

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	96.1	94.3	P/P	90 - 110
Thallium	95.5	95.8	P/P	90 - 110
Thallium	95.8	94.4	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A117317

Included Lab Sample IDs: 2382403

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.0	97.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117354

Included Lab Sample IDs: 2382404, 2382406, 2382409

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.1	99.5	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
DEP SOP: NU-094-1	Color (true)	99.2				0.975	
	Color (true)	101				1.62	
EPA 180.1 Rev. 2.0	Turbidity	101				1.26	
EPA 200.7 Rev. 4.4	Calcium	105	106	104			0.234
	Chromium	98.9	101	99.7	102		0.984
	Cobalt	101	101	102	102		0.974
	Iron	103	105	106	104		0.381
	Magnesium	102	105	101			0.702
	Potassium	103	103	104	103		1.13
	Sodium	102	105	105			0.398
	Strontium	99.6	100	101	101		0.648
	Tin	99.2	103	103	102		0.193
	Titanium	99.1	101	101	104		0.210
	Vanadium	99.2	102	101	103		0.651
	Zinc	102	103	102	105		0.357
EPA 200.8 Rev. 5.4	Aluminum	98.9	97.8	99.0	98.3		1.10
	Antimony	94.7	98.4	99.4	99.5		1.09
	Arsenic	99.3	102	103	101		1.39
	Barium	101	104	105	103		1.10
	Beryllium	97.9	101	102	101		0.497
	Boron	98.2	99.4	100	98.2		0.527
	Cadmium	98.5	103	105	104		1.71
	Copper	100	98.8	99.6	100		0.792
	Lead	91.9	93.5	95.8	94.1		2.51
	Manganese	97.7	101	102	104		1.34
	Molybdenum	93.1	97.0	98.6	97.7		1.53
	Nickel	100	101	102	103		0.916
	Selenium	99.8	99.5	101	102		1.58
	Silver	94.6	96.4	97.1	97.0		0.730
	Thallium	94.4	97.4	101	98.0		3.15
EPA 300.0 Rev. 2.1	Chloride	99.1	98.9	102		0.406	
	Chloride	94.3	95.9	99.1		0.972	
	Sulfate	97.3	94.2	99.8		0.354	
EPA 350.1 Rev. 2.0	Ammonia-N	97.0	98.8	96.6			1.99
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.1	103	95.4			5.29
	Kjeldahl Nitrogen	102	104	101			2.29
	Kjeldahl Nitrogen	102	110	109			0.457
EPA 353.2 Rev. 2.0	NO2NO3-N	97.0	98.6	97.0			1.06
EPA 365.1 Rev. 2.0	Total-P	106	107	105			1.72
	Total-P	102	103	102			1.20
SM 2320 B-2011	Total Alkalinity	97.0				0.110	
SM 2540 C-2015	TDS	96.9				6.71	
SM 2540 D-2015	TSS	99.0					
SM 4500-F- C-2011	Fluoride	101	103	100			1.95
SM 5310 B-2011	Organic Carbon	96.1	95.4	97.7			1.61

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2382403, 2382405, 2382407
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2382403, 2382405, 2382407
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2382414, 2382415

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2382414, 2382415
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2382403, 2382405, 2382407
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2382403, 2382405, 2382407
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2382404, 2382406, 2382409
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2382404, 2382406, 2382409
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2382404, 2382406, 2382409
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2382404, 2382406, 2382409
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2382403, 2382405, 2382407
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2382414, 2382415
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2382403, 2382405, 2382407
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2382403, 2382405, 2382407
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2382403, 2382405, 2382407
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2382404, 2382406, 2382409

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	01/24/2023			01/24/2023 14:25	Alexis Price	2382405
	01/24/2023			01/24/2023 14:26	Alexis Price	2382407
	01/24/2023			01/24/2023 14:32	Alexis Price	2382403
EPA 180.1 Rev. 2.0	01/24/2023			01/24/2023 13:57	Khloe J Berg	2382403
	01/24/2023			01/24/2023 13:59	Khloe J Berg	2382405
	01/24/2023			01/24/2023 14:00	Khloe J Berg	2382407
EPA 200.7 Rev. 4.4	01/24/2023	01/25/2023 10:50	Vijayalakshmi Reddy	02/02/2023 19:42	McKinley C Carter	2382415
	01/24/2023	01/25/2023 10:50	Vijayalakshmi Reddy	02/02/2023 23:19	McKinley C Carter	2382414
	01/24/2023	01/25/2023 10:50	Vijayalakshmi Reddy	02/03/2023 16:30	McKinley C Carter	2382414
EPA 200.8 Rev. 5.4	01/24/2023	01/25/2023 10:50	Vijayalakshmi Reddy	02/06/2023 17:21	Emily M Philpot	2382415
	01/24/2023	01/25/2023 10:50	Vijayalakshmi Reddy	02/06/2023 19:36	Emily M Philpot	2382414
	01/24/2023	01/25/2023 10:50	Vijayalakshmi Reddy	02/07/2023 16:23	Emily M Philpot	2382415
EPA 300.0 Rev. 2.1	01/24/2023	01/25/2023 10:50	Vijayalakshmi Reddy	02/07/2023 18:28	Emily M Philpot	2382414
	01/24/2023			01/27/2023 20:15	Anna M. Plaviak	2382405
	01/24/2023			01/28/2023 01:02	Anna M. Plaviak	2382403
EPA 350.1 Rev. 2.0	01/24/2023			01/28/2023 01:17	Anna M. Plaviak	2382407
	01/24/2023			02/09/2023 13:20	Anna M. Plaviak	2382403
	01/24/2023			02/09/2023 10:51	Ping Hua	2382404
EPA 351.2 Rev. 2.0	01/24/2023			02/09/2023 10:53	Ping Hua	2382406
	01/24/2023			02/09/2023 10:54	Ping Hua	2382409
	01/24/2023	01/26/2023 15:30	Simonne.V. Calhoun	01/30/2023 11:20	Samantha L Bates	2382406
EPA 353.2 Rev. 2.0	01/24/2023	01/27/2023 11:50	Simonne.V. Calhoun	01/30/2023 13:25	Samantha L Bates	2382409
	01/24/2023	02/01/2023 12:25	Simonne.V. Calhoun	02/03/2023 12:12	Samantha L Bates	2382404
	01/24/2023			01/30/2023 10:21	Beverly Y. Sanders	2382404
EPA 365.1 Rev. 2.0	01/24/2023			01/30/2023 10:22	Beverly Y. Sanders	2382406
	01/24/2023			01/30/2023 10:23	Beverly Y. Sanders	2382409
	01/24/2023	01/30/2023 14:03	Adam P Silver	01/31/2023 14:31	James L Waggeberby	2382404
SM 2320 B-2011	01/24/2023	01/30/2023 14:03	Adam P Silver	01/31/2023 14:32	James L Waggeberby	2382406
	01/24/2023	02/01/2023 14:40	Adam P Silver	02/02/2023 11:57	Simonne.V. Calhoun	2382409
	01/24/2023			02/03/2023 02:16	Dale L. Simmons	2382403
SM 2340 B-2011	01/24/2023			02/03/2023 02:30	Dale L. Simmons	2382405
	01/24/2023			02/03/2023 02:39	Dale L. Simmons	2382407
	01/24/2023			02/02/2023 19:42	McKinley C Carter	2382415
SM 2540 C-2015	01/24/2023			02/03/2023 16:30	McKinley C Carter	2382414
	01/24/2023			01/25/2023 12:55	Yijie Li	2382403, 2382405, 2382407
	01/24/2023			01/25/2023 12:55	Yijie Li	2382403, 2382405, 2382407
SM 4500-F- C-2011	01/24/2023			02/03/2023 02:16	Dale L. Simmons	2382403
	01/24/2023			02/03/2023 02:30	Dale L. Simmons	2382405
	01/24/2023			02/03/2023 02:39	Dale L. Simmons	2382407
SM 5310 B-2011	01/24/2023			02/01/2023 00:52	Elise M. Gillis	2382404

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	01/24/2023			02/01/2023 01:06	Elise M. Gillis	2382406
	01/24/2023			02/01/2023 01:20	Elise M. Gillis	2382409