Chemical Analysis Report

NE-DIST-2024-05-30-01

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

Event Description: **Suwannee Central**
Request ID: **RQ-2024-05-20-14**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 13-JUN-2024 09:19

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: SANTA FE RIVER AT CR325 **Collection Date/Time: 05/29/2024 10:35**

Field ID: 21030114 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2489843	DEP SOP: NU-094-1	Color (true)	330		PCU	P445842	
	EPA 180.1 Rev. 2.0	Turbidity	1.0	I	NTU	P445835	
	EPA 300.0 Rev. 2.1	Chloride	8.4		mg Cl/L	P445989	
		Sulfate	0.20	U	mg SO4/L	P445991	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P446041	
	SM 2540 C-2015	TDS	71		mg/L	P446296	
	SM 2540 D-2015	TSS	2	U	mg/L	P446162	
	SM 4500-F- C-2011	Fluoride	0.027	I	mg F/L	P446043	
2489845	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P446004	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.90		mg N/L	P445903	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P446090	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P445893	
	SM 5310 B-2014	Organic Carbon	37		mg C/L	P446053	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: ALLIGATOR CREEK AT NW CR225 **Collection Date/Time: 05/29/2024 11:15**

Field ID: G1NE0957 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2489841	DEP SOP: NU-094-1	Color (true)	290		PCU	P445842	
	EPA 180.1 Rev. 2.0	Turbidity	5.6		NTU	P445835	
	EPA 300.0 Rev. 2.1	Chloride	8.0		mg Cl/L	P445989	
		Sulfate	1.8		mg SO4/L	P445991	
	SM 2320 B-2011	Total Alkalinity	25		mg CaCO3/L	P446041	
	SM 2540 C-2015	TDS	133		mg/L	P446296	
	SM 2540 D-2015	TSS	5	I	mg/L	P446162	
	SM 4500-F- C-2011	Fluoride	0.060	I	mg F/L	P446043	
2489842	EPA 350.1 Rev. 2.0	Ammonia-N	0.22		mg N/L	P446004	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P445903	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P446091	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P445893	
	SM 5310 B-2014	Organic Carbon	25		mg C/L	P446053	
2489859	EPA 200.7 Rev. 4.4	Calcium	10.3		mg/L	P445889	
		Iron	1.77E+03		ug/L	P445889	
		Magnesium	1.81		mg/L	P445889	
		Potassium	0.59	I	mg/L	P445889	
		Sodium	5.6		mg/L	P445889	
		Strontium	24.9		ug/L	P445889	
		Tin	3.0	U	ug/L	P445889	
		Titanium	0.75	U	ug/L	P445889	
		Vanadium	2.0	U	ug/L	P445889	
		Zinc	13	I	ug/L	P445889	
	EPA 200.8 Rev. 5.4	Aluminum	230		ug/L	P445889	
		Antimony	0.060	I	ug/L	P445889	
		Arsenic	1.33		ug/L	P445889	
		Barium	13.3		ug/L	P445889	
		Beryllium	0.019	I	ug/L	P445889	
		Boron	22.4		ug/L	P445889	
		Cadmium	0.020	U	ug/L	P445889	
		Chromium	1.1	I	ug/L	P445889	
		Cobalt	1.06		ug/L	P445889	
		Copper	0.43	I	ug/L	P445889	
		Lead	0.59		ug/L	P445889	
		Manganese	71.8		ug/L	P445889	
		Molybdenum	0.17	I	ug/L	P445889	
		Nickel	0.77	I	ug/L	P445889	
		Selenium	0.20	U	ug/L	P445889	
		Silver	0.021	I	ug/L	P445889	
		Thallium	0.10	U	ug/L	P445889	
	SM 2340 B-2011	Hardness	33.1		mg/L	P445889	

Field ID: G1NE0957 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for aluminum and manganese are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: NEW RIVER AT SR 125 **Collection Date/Time: 05/29/2024 11:40**

Field ID: 21030082 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2489844	DEP SOP: NU-094-1	Color (true)	520		PCU	P445842	
	EPA 180.1 Rev. 2.0	Turbidity	4.7		NTU	P445835	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P445989	
		Sulfate	16		mg SO4/L	P445991	
	SM 2320 B-2011	Total Alkalinity	1.7	I	mg CaCO3/L	P446041	
	SM 2540 C-2015	TDS	132		mg/L	P446297	
	SM 2540 D-2015	TSS	7	I	mg/L	P446163	
	SM 4500-F- C-2011	Fluoride	0.044	I	mg F/L	P446043	
2489846	EPA 350.1 Rev. 2.0	Ammonia-N	0.53		mg N/L	P446004	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P445903	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P446092	
	EPA 365.1 Rev. 2.0	Total-P	0.068		mg P/L	P445893	
	SM 5310 B-2014	Organic Carbon	38		mg C/L	P446054	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: SWIFT CREEK POND CENTER **Collection Date/Time: 05/29/2024 12:35**

Field ID: 21030066 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2489847	DEP SOP: NU-094-1	Color (true)	320	J	PCU	P445842	
	EPA 180.1 Rev. 2.0	Turbidity	15		NTU	P445835	
	EPA 300.0 Rev. 2.1	Chloride	7.8		mg Cl/L	P445989	
		Sulfate	1.1		mg SO4/L	P445991	
	SM 2320 B-2011	Total Alkalinity	1.5	I	mg CaCO3/L	P446041	
	SM 2540 C-2015	TDS	73		mg/L	P446297	
	SM 2540 D-2015	TSS	9	I	mg/L	P446163	
	SM 4500-F- C-2011	Fluoride	0.041	I	mg F/L	P446043	
2489848	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P446004	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P445903	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.030		mg N/L	P446093	
	EPA 365.1 Rev. 2.0	Total-P	0.049		mg P/L	P445893	
	SM 5310 B-2014	Organic Carbon	23		mg C/L	P446054	
2489860	EPA 200.7 Rev. 4.4	Calcium	2.83		mg/L	P445889	
		Iron	600		ug/L	P445889	
		Magnesium	1.35		mg/L	P445889	
		Potassium	0.30	U	mg/L	P445889	
		Sodium	4.3		mg/L	P445889	
		Strontium	12.1		ug/L	P445889	
		Tin	3.0	U	ug/L	P445889	
		Titanium	1.8	I	ug/L	P445889	
		Vanadium	2.0	U	ug/L	P445889	
		Zinc	12	I	ug/L	P445889	
	EPA 200.8 Rev. 5.4	Aluminum	379		ug/L	P445889	
		Antimony	0.068	I	ug/L	P445889	
		Arsenic	0.36		ug/L	P445889	
		Barium	10.5		ug/L	P445889	
		Beryllium	0.023	I	ug/L	P445889	
		Boron	19.1		ug/L	P445889	
		Cadmium	0.020	U	ug/L	P445889	
		Chromium	0.53	I	ug/L	P445889	
		Cobalt	0.161		ug/L	P445889	
		Copper	0.40	U	ug/L	P445889	
		Lead	0.70		ug/L	P445889	
		Manganese	19.5		ug/L	P445889	
		Molybdenum	0.15	U	ug/L	P445889	
		Nickel	0.50	U	ug/L	P445889	
		Selenium	0.20	U	ug/L	P445889	
		Silver	0.010	U	ug/L	P445889	
		Thallium	0.10	U	ug/L	P445889	
	SM 2340 B-2011	Hardness	12.6		mg/L	P445889	

Field ID: 21030066 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes

Ref. Method and Comment:
DEP SOP: NU-094-1: The result may be biased high because of turbidity.
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for aluminum and manganese are unavailable for one of two spiked samples because of high analyte concentration in the QC sample. The lead result was confirmed in the undigested sample on 06/04/2024.

Quality Assurance Report
Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P445842

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P445835

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P445889

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: P445889

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 300.0 Rev. 2.1
Batch ID: P445989

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P445991

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P446004

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P445903

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446090

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446091

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446092

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446093

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P445893

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

Reference Method: SM 2320 B-2011
Batch ID: P446041

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: P446296

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2015
Batch ID: P446297

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P446162

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P446163

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P446043

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2014
Batch ID: P446053

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

Reference Method: SM 5310 B-2014
Batch ID: P446054

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: P445842

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P445835

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P445889

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	100		P	85 - 115
Iron	100		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	96.6		P	85 - 115
Sodium	103		P	85 - 115
Strontium	100		P	85 - 115
Tin	102		P	85 - 115
Titanium	98.4		P	85 - 115
Vanadium	102		P	85 - 115
Zinc	99.1		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P445889

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	105		P	85 - 115
Arsenic	107		P	85 - 115
Barium	102		P	85 - 115
Beryllium	105		P	85 - 115
Boron	109		P	85 - 115
Cadmium	99.7		P	85 - 115
Chromium	106		P	85 - 115
Cobalt	105		P	85 - 115
Copper	104		P	85 - 115
Lead	100		P	85 - 115
Manganese	105		P	85 - 115
Molybdenum	99.7		P	85 - 115
Nickel	104		P	85 - 115
Selenium	107		P	85 - 115
Silver	110		P	85 - 115
Thallium	100		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P445989

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P445991

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P446004

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P445903

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446090

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446091

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: P446092

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: P446093

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: P445893

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

Reference Method: SM 2320 B-2011
Batch ID: P446041

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	93 - 103

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P446296

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

Reference Method: SM 2540 C-2015
Batch ID: P446297

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	94.0		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P446162

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.0		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P446163

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.8		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P446043

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.6		P	95 - 106

Reference Method: SM 5310 B-2014
Batch ID: P446053

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.4		P	85 - 115

Reference Method: SM 5310 B-2014
Batch ID: P446054

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.0		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P445889

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2489618	Calcium	99.4		P	80 - 120
2489618	Iron	98.6	96.0	P/P	80 - 120
2489618	Magnesium	105	104	P/P	80 - 120
2489618	Potassium	97.5	97.7	P/P	80 - 120
2489618	Sodium	99.8	100	P/P	80 - 120
2489618	Strontium	97.4	98.1	P/P	80 - 120
2489618	Tin	93.8	94.6	P/P	80 - 120
2489618	Titanium	93.2	95.2	P/P	80 - 120
2489618	Vanadium	102	102	P/P	80 - 120
2489618	Zinc	97.3	98.5	P/P	80 - 120
2489914	Calcium	98.2		P	80 - 120
2489914	Iron	100		P	80 - 120
2489914	Magnesium	102		P	80 - 120
2489914	Potassium	95.0		P	80 - 120
2489914	Sodium	98.3		P	80 - 120
2489914	Strontium	97.6		P	80 - 120
2489914	Tin	95.6		P	80 - 120
2489914	Titanium	96.5		P	80 - 120
2489914	Vanadium	103		P	80 - 120
2489914	Zinc	96.2		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P445889

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2489618	Antimony	97.0	97.1	P/P	80 - 120
2489618	Arsenic	105	101	P/P	80 - 120
2489618	Barium	96.8	97.7	P/P	80 - 120
2489618	Beryllium	101	97.2	P/P	80 - 120
2489618	Boron	107	109	P/P	80 - 120
2489618	Cadmium	95.1	98.4	P/P	80 - 120
2489618	Chromium	101	99.7	P/P	80 - 120
2489618	Cobalt	102	99.9	P/P	80 - 120
2489618	Copper	103	99.9	P/P	80 - 120
2489618	Lead	98.4	99.2	P/P	80 - 120
2489618	Molybdenum	96.6	96.6	P/P	80 - 120
2489618	Nickel	101	98.8	P/P	80 - 120
2489618	Selenium	105	102	P/P	80 - 120
2489618	Silver	108	107	P/P	80 - 120
2489618	Thallium	101	102	P/P	80 - 120
2489914	Aluminum	100		P	80 - 120
2489914	Antimony	105		P	80 - 120
2489914	Arsenic	102		P	80 - 120
2489914	Barium	101		P	80 - 120
2489914	Beryllium	102		P	80 - 120
2489914	Boron	113		P	80 - 120
2489914	Cadmium	97.9		P	80 - 120
2489914	Chromium	102		P	80 - 120
2489914	Cobalt	98.9		P	80 - 120
2489914	Copper	98.5		P	80 - 120
2489914	Lead	101		P	80 - 120
2489914	Manganese	102		P	80 - 120

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P445889

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2489914	Molybdenum	101		P	80 - 120
2489914	Nickel	99.7		P	80 - 120
2489914	Selenium	101		P	80 - 120
2489914	Silver	107		P	80 - 120
2489914	Thallium	103		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P445989

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2489819	Chloride	102		P	90 - 110
2489891	Chloride	94.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P445991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2489819	Sulfate	101		P	90 - 110
2489891	Sulfate	94.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P446004

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2489792	Ammonia-N	94.4	95.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446090

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2489794	NO2NO3-N	98.0	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446091

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2489881	NO2NO3-N	98.0	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446092

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2489902	NO2NO3-N	97.8	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446093

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2489894	NO2NO3-N	100	101	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P445893

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2489820	Total-P	105	106	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P446043

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2489889	Fluoride	97.5	99.1	P/P	95 - 107

Reference Method: SM 5310 B-2014
Batch ID: P446053

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2489742	Organic Carbon	101	99.4	P/P	85 - 115

Reference Method: SM 5310 B-2014
Batch ID: P446054

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2489930	Organic Carbon	98.2	99.5	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P445842

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489880	Color (true)	2.36	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P445835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489736	Turbidity	3.17	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P445889

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489618	Calcium	0.161	Spike	P	0 - 20
2489618	Iron	1.47	Spike	P	0 - 20
2489618	Magnesium	0.595	Spike	P	0 - 20
2489618	Potassium	0.132	Spike	P	0 - 20
2489618	Sodium	0.194	Spike	P	0 - 20
2489618	Strontium	0.679	Spike	P	0 - 20
2489618	Tin	0.833	Spike	P	0 - 20
2489618	Titanium	1.61	Spike	P	0 - 20
2489618	Vanadium	0.0474	Spike	P	0 - 20
2489618	Zinc	1.17	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P445889

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489618	Aluminum	0.154	Spike	P	0 - 20
2489618	Antimony	0.0627	Spike	P	0 - 20
2489618	Arsenic	4.03	Spike	P	0 - 20
2489618	Barium	0.633	Spike	P	0 - 20
2489618	Beryllium	2.83	Spike	P	0 - 20
2489618	Boron	1.49	Spike	P	0 - 20
2489618	Cadmium	3.33	Spike	P	0 - 20
2489618	Chromium	0.884	Spike	P	0 - 20
2489618	Cobalt	2.07	Spike	P	0 - 20
2489618	Copper	2.50	Spike	P	0 - 20
2489618	Lead	0.685	Spike	P	0 - 20
2489618	Manganese	2.23	Spike	P	0 - 20
2489618	Molybdenum	0.00590	Spike	P	0 - 20
2489618	Nickel	1.94	Spike	P	0 - 20
2489618	Selenium	3.07	Spike	P	0 - 20
2489618	Silver	0.956	Spike	P	0 - 20
2489618	Thallium	1.29	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P445989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489819	Chloride	0.0853	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P445991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489819	Sulfate	0.165	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P446004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489792	Ammonia-N	1.00	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P445903

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489792	Kjeldahl Nitrogen	9.47	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446090

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489794	NO2NO3-N	1.02	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446091

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489881	NO2NO3-N	1.52	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489902	NO2NO3-N	0.985	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P446093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489894	NO2NO3-N	0.971	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P445893

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489820	Total-P	0.242	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P446041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489889	Total Alkalinity	0.620	Sample	P	0 - 4.1

Reference Method: SM 2540 C-2015
Batch ID: P446296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489340	TDS	9.11	Sample	P	0 - 10

Reference Method: SM 2540 C-2015
Batch ID: P446297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489889	TDS	2.32	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P446043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489889	Fluoride	1.46	Spike	P	0 - 1.7

Reference Method: SM 5310 B-2014
Batch ID: P446053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489742	Organic Carbon	1.38	Spike	P	0 - 15

Reference Method: SM 5310 B-2014
Batch ID: P446054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2489930	Organic Carbon	1.15	Spike	P	0 - 15

* 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: A125894
Included Lab Sample IDs: 2489841, 2489843, 2489844, 2489847

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.2	94.6	P/P	90 - 110
Sulfate	97.6	94.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A125920
Included Lab Sample IDs: 2489841, 2489843, 2489844, 2489847

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	97.5	98.0	P/P	95 - 105

Reference Method: DEP SOP: NU-094-1
Run ID: A125922
Included Lab Sample IDs: 2489841, 2489843, 2489844, 2489847

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	99.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A125952
Included Lab Sample IDs: 2489842, 2489846

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	103	P/P	90 - 110
Total-P	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A125954
Included Lab Sample IDs: 2489845

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A125959
Included Lab Sample IDs: 2489859, 2489860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.7	101	P/P	90 - 110
Antimony	100	102	P/P	90 - 110
Arsenic	100	102	P/P	90 - 110
Barium	96.1	98.0	P/P	90 - 110
Beryllium	100	99.0	P/P	90 - 110
Boron	104	104	P/P	90 - 110
Cadmium	97.5	100	P/P	90 - 110
Chromium	98.1	99.8	P/P	90 - 110
Cobalt	97.7	100	P/P	90 - 110
Copper	100	102	P/P	90 - 110
Lead	97.7	100	P/P	90 - 110
Manganese	97.7	99.0	P/P	90 - 110
Molybdenum	96.4	97.8	P/P	90 - 110
Nickel	97.7	101	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A125959
Included Lab Sample IDs: 2489859, 2489860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	101	103	P/P	90 - 110
Silver	97.1	99.3	P/P	90 - 110
Thallium	100	102	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A125964
Included Lab Sample IDs: 2489859, 2489860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	97.9	98.9	P/P	90 - 110
Iron	98.2	97.7	P/P	90 - 110
Magnesium	99.0	99.4	P/P	90 - 110
Potassium	97.6	98.5	P/P	90 - 110
Sodium	99.8	99.8	P/P	90 - 110
Strontium	99.6	102	P/P	90 - 110
Tin	100	101	P/P	90 - 110
Titanium	97.6	97.3	P/P	90 - 110
Vanadium	101	102	P/P	90 - 110
Zinc	100	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A125971
Included Lab Sample IDs: 2489842, 2489845, 2489846, 2489848

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.6	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A125988
Included Lab Sample IDs: 2489842, 2489845, 2489846, 2489848

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

Reference Method: SM 2320 B-2011
Run ID: A125989
Included Lab Sample IDs: 2489841, 2489843, 2489844, 2489847

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.3	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A125989
Included Lab Sample IDs: 2489841, 2489843, 2489844, 2489847

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

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-2014
Run ID: A125993
Included Lab Sample IDs: 2489842, 2489845, 2489846, 2489848

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.9	115	P/P	85 - 115
Organic Carbon	96.2	95.9	P/P	85 - 115

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A126006
Included Lab Sample IDs: 2489842, 2489845, 2489846, 2489848

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	100	101	P/P	90 - 110
NO2NO3-N	101	101	P/P	90 - 110
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A126039
Included Lab Sample IDs: 2489848

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	102	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
DEP SOP: NU-094-1	Color (true)	102					2.36	
EPA 180.1 Rev. 2.0	Turbidity	101					3.17	
EPA 200.7 Rev. 4.4	Calcium	100	99.4	98.2				0.161
	Iron	100	98.6	96.0	100			1.47
	Magnesium	103	105	104	102			0.595
	Potassium	96.6	97.5	97.7	95.0			0.132
	Sodium	103	99.8	100	98.3			0.194
	Strontium	100	97.4	98.1	97.6			0.679
	Tin	102	93.8	94.6	95.6			0.833
	Titanium	98.4	96.5	93.2	95.2			1.61
	Vanadium	102	102	102	103			0.0474
	Zinc	99.1	97.3	98.5	96.2			1.17
EPA 200.8 Rev. 5.4	Aluminum	103	100					0.154
	Antimony	105	97.0	97.1	105			0.0627
	Arsenic	107	105	101	102			4.03
	Barium	102	96.8	97.7	101			0.633
	Beryllium	105	101	97.2	102			2.83
	Boron	109	107	109	113			1.49
	Cadmium	99.7	95.1	98.4	97.9			3.33
	Chromium	106	101	99.7	102			0.884
	Cobalt	105	102	99.9	98.9			2.07
	Copper	104	103	99.9	98.5			2.50
	Lead	100	98.4	99.2	101			0.685
	Manganese	105	102					2.23
	Molybdenum	99.7	96.6	96.6	101			0.0059
	Nickel	104	101	98.8	99.7			1.94
	Selenium	107	105	102	101			3.07
	Silver	110	108	107	107			0.956
	Thallium	100	101	102	103			1.29
EPA 300.0 Rev. 2.1	Chloride	99.0	102	94.2			0.0853	
	Sulfate	99.8	101	94.5			0.165	
EPA 350.1 Rev. 2.0	Ammonia-N	94.8	94.4	95.6				1.00
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.1						9.47
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	98.0	99.0				1.02
	NO2NO3-N	100	98.0	99.5				1.52
	NO2NO3-N	100	97.8	98.8				0.985
	NO2NO3-N	102	100	101				0.971
EPA 365.1 Rev. 2.0	Total-P	103	105	106				0.242
SM 2320 B-2011	Total Alkalinity	100					0.620	
SM 2540 C-2015	TDS	101					9.11	
	TDS	94.0					2.32	
SM 2540 D-2015	TSS	96.0						
	TSS	96.8						
SM 4500-F- C-2011	Fluoride	98.6	97.5	99.1				1.46
SM 5310 B-2014	Organic Carbon	97.4	101	99.4				1.38
	Organic Carbon	98.0	98.2	99.5				1.15

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2489841, 2489843, 2489844, 2489847
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2489841, 2489843, 2489844, 2489847

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	2489859, 2489860
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2489859, 2489860
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2489841, 2489843, 2489844, 2489847
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2489841, 2489843, 2489844, 2489847
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2489842, 2489845, 2489846, 2489848
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2489842, 2489845, 2489846, 2489848
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2489842, 2489845, 2489846, 2489848
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2489842, 2489845, 2489846, 2489848
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2489841, 2489843, 2489844, 2489847
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2489859, 2489860
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2489841, 2489843, 2489844, 2489847
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2489841, 2489843, 2489844, 2489847
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2489841, 2489843, 2489844, 2489847
SM 5310 B-2014	Nonpurgeable Organic Carbon in aqueous matrices	2489842, 2489845, 2489846, 2489848

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	05/30/2024			05/30/2024 15:42	Jessica K Wilks	2489841
	05/30/2024			05/30/2024 15:43	Jessica K Wilks	2489843, 2489844
	05/30/2024			05/30/2024 15:44	Jessica K Wilks	2489847
EPA 180.1 Rev. 2.0	05/30/2024			05/30/2024 14:03	Samantha L Bates	2489841
	05/30/2024			05/30/2024 14:04	Samantha L Bates	2489843
	05/30/2024			05/30/2024 14:05	Samantha L Bates	2489844
	05/30/2024			05/30/2024 14:06	Samantha L Bates	2489847
EPA 200.7 Rev. 4.4	05/30/2024	05/31/2024 13:10	George D Taylor	06/03/2024 16:48	Chase Roberts	2489859
	05/30/2024	05/31/2024 13:10	George D Taylor	06/03/2024 16:56	Chase Roberts	2489860
EPA 200.8 Rev. 5.4	05/30/2024	05/31/2024 13:10	George D Taylor	06/03/2024 22:18	McKinley C Carter	2489859
	05/30/2024	05/31/2024 13:10	George D Taylor	06/03/2024 22:27	McKinley C Carter	2489860
EPA 300.0 Rev. 2.1	05/30/2024			06/01/2024 00:19	Samantha L Bates	2489841
	05/30/2024			06/01/2024 00:34	Samantha L Bates	2489843
	05/30/2024			06/01/2024 00:49	Samantha L Bates	2489844
	05/30/2024			06/01/2024 01:04	Samantha L Bates	2489847
EPA 350.1 Rev. 2.0	05/30/2024			06/04/2024 14:50	Khloe J Berg	2489842
	05/30/2024			06/04/2024 14:52	Khloe J Berg	2489845
	05/30/2024			06/04/2024 14:53	Khloe J Berg	2489846
	05/30/2024			06/04/2024 14:54	Khloe J Berg	2489848
EPA 351.2 Rev. 2.0	05/30/2024	06/03/2024 10:55	Robyn Blevins	06/04/2024 16:07	Samantha L Bates	2489842
	05/30/2024	06/03/2024 10:55	Robyn Blevins	06/04/2024 16:09	Samantha L Bates	2489845
	05/30/2024	06/03/2024 10:55	Robyn Blevins	06/04/2024 16:11	Samantha L Bates	2489846
	05/30/2024	06/03/2024 10:55	Robyn Blevins	06/04/2024 16:12	Samantha L Bates	2489848
EPA 353.2 Rev. 2.0	05/30/2024			06/05/2024 13:09	Fadila Guebre	2489845
	05/30/2024			06/05/2024 13:25	Fadila Guebre	2489842
	05/30/2024			06/05/2024 13:48	Fadila Guebre	2489846
	05/30/2024			06/05/2024 14:09	Fadila Guebre	2489848
EPA 365.1 Rev. 2.0	05/30/2024	05/31/2024 13:18	Josephine W Gitau	06/03/2024 14:28	James L Waggerby	2489842
	05/30/2024	05/31/2024 13:18	Josephine W Gitau	06/03/2024 14:31	James L Waggerby	2489846
	05/30/2024	05/31/2024 13:18	Josephine W Gitau	06/03/2024 15:13	James L Waggerby	2489845
	05/30/2024	05/31/2024 13:18	Josephine W Gitau	06/06/2024 15:42	James L Waggerby	2489848
SM 2320 B-2011	05/30/2024			06/05/2024 02:45	Adam P Silver	2489841
	05/30/2024			06/05/2024 02:52	Adam P Silver	2489843
	05/30/2024			06/05/2024 03:02	Adam P Silver	2489844
	05/30/2024			06/05/2024 03:11	Adam P Silver	2489847
SM 2340 B-2011	05/30/2024			06/03/2024 16:48	Chase Roberts	2489859
	05/30/2024			06/03/2024 16:56	Chase Roberts	2489860
SM 2540 C-2015	05/30/2024			06/03/2024 15:24	Yijie Li	2489841, 2489843, 2489844, 2489847
SM 2540 D-2015	05/30/2024			06/03/2024 15:24	Yijie Li	2489841, 2489843, 2489844, 2489847
SM 4500-F- C-2011	05/30/2024			06/05/2024 02:45	Adam P Silver	2489841

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500-F- C-2011	05/30/2024			06/05/2024 02:52	Adam P Silver	2489843
	05/30/2024			06/05/2024 03:02	Adam P Silver	2489844
	05/30/2024			06/05/2024 03:11	Adam P Silver	2489847
SM 5310 B-2014	05/30/2024			06/04/2024 21:34	Elise M. Gillis	2489842
	05/30/2024			06/04/2024 21:49	Elise M. Gillis	2489845
	05/30/2024			06/04/2024 23:52	Elise M. Gillis	2489846
	05/30/2024			06/05/2024 00:06	Elise M. Gillis	2489848