

Chemical Analysis Report

TLH-ROC-2022-02-28-01

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

Event Description: **Run 10**
Request ID: **RQ-2022-02-21-74**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 22-MAR-2022 16:51



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: Apalachicola River @ Bristol Landing

Collection Date/Time: 02/28/2022 10:30

Field ID: G2TLHR0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2308650	DEP SOP: NU-094-1	Color (true)**	36	A	PCU	P410509	
	EPA 180.1 Rev. 2.0	Turbidity	12	A	NTU	P410514	
	EPA 300.0 Rev. 2.1	Chloride	4.8		mg Cl/L	P410851	
		Sulfate	5.2		mg SO4/L	P410855	
	SM 2320 B-2011	Total Alkalinity	38		mg CaCO3/L	P410661	
	SM 2540 C-2011	TDS	81		mg/L	P410754	
	SM 2540 D-2011	TSS	6	I	mg/L	P410897	
	SM 4500 F-C-2011	Fluoride	0.053	I	mg F/L	P410664	
2308651	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P410686	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P410481	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.79		mg N/L	P410784	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P410933	
	SM 5310 B-2011	Organic Carbon	3.2		mg C/L	P410643	
2308652	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.010		mg P/L	P410505	
2308664	EPA 200.7 Rev. 4.4	Calcium	15.4		mg/L	P410533	
		Iron	550		ug/L	P410533	
		Magnesium	1.59		mg/L	P410533	
		Potassium	1.7		mg/L	P410533	
		Sodium	5.2		mg/L	P410533	
		Strontium	28.2		ug/L	P410533	
		Tin	3.0	U	ug/L	P410533	
		Titanium	4.9		ug/L	P410533	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P410533	
		Zinc	5.0	U	ug/L	P410533	
		Aluminum	193		ug/L	P410533	
		Antimony	0.051	I	ug/L	P410533	
		Arsenic	0.28		ug/L	P410533	
		Barium	21.4		ug/L	P410533	
		Beryllium	0.021	I	ug/L	P410533	
		Boron**	13.7		ug/L	P410533	
		Cadmium	0.020	U	ug/L	P410533	
		Chromium	0.40	U	ug/L	P410533	
		Cobalt	0.115		ug/L	P410533	
		Copper	0.64	I	ug/L	P410533	
		Lead	0.28	I	ug/L	P410533	
		Manganese	34.8		ug/L	P410533	
		Molybdenum	0.16	I	ug/L	P410533	
		Nickel	0.50	U	ug/L	P410533	
		Selenium	0.20	U	ug/L	P410533	
		Silver	0.010	U	ug/L	P410533	
		Thallium	0.10	U	ug/L	P410533	
	SM 2340B	Hardness	45.0		mg/L	P410533	

Ref. Method and Comment:

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

Sample Location: Dead Lakes @ SR22

Collection Date/Time: 02/28/2022 11:30

Field ID: G2TLHR0047

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2308653	DEP SOP: NU-094-1	Color (true)**	18		PCU	P410509	
	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P410514	
	EPA 300.0 Rev. 2.1	Chloride	5.1		mg Cl/L	P410851	
		Sulfate	1.4		mg SO4/L	P410855	
	SM 2320 B-2011	Total Alkalinity	79		mg CaCO3/L	P410661	
	SM 2540 C-2011	TDS	100		mg/L	P410754	
	SM 2540 D-2011	TSS	4	I	mg/L	P410897	
	SM 4500 F-C-2011	Fluoride	0.044	I	mg F/L	P410664	
2308654	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P410686	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32		mg N/L	P410481	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.55		mg N/L	P410784	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P410933	
	SM 5310 B-2011	Organic Carbon	3.1		mg C/L	P410643	
2308655	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P410505	

Ref. Method and Comment:

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

Sample Location: Big Branch @ Rd5

Collection Date/Time: 02/28/2022 12:00

Field ID: G2TLHR0049

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2308666	EPA 200.7 Rev. 4.4	Calcium	2.21		mg/L	P410533	
		Iron	510		ug/L	P410533	
		Magnesium	0.45		mg/L	P410533	
		Potassium	0.30	U	mg/L	P410533	
		Sodium	2.3		mg/L	P410533	
		Strontium	14.8		ug/L	P410533	
		Tin	3.0	U	ug/L	P410533	
		Titanium	1.3	I	ug/L	P410533	
		Vanadium	2.0	U	ug/L	P410533	
		Zinc	5.0	U	ug/L	P410533	
	EPA 200.8 Rev. 5.4	Aluminum	233		ug/L	P410533	
		Antimony	0.050	U	ug/L	P410533	
		Arsenic	0.11	I	ug/L	P410533	
		Barium	9.40		ug/L	P410533	
		Beryllium	0.020	I	ug/L	P410533	
		Boron**	6.9	I	ug/L	P410533	
		Cadmium	0.020	U	ug/L	P410533	
		Chromium	0.40	U	ug/L	P410533	
		Cobalt	0.110		ug/L	P410533	
		Copper	0.40	U	ug/L	P410533	
		Lead	0.33	I	ug/L	P410533	
		Manganese	7.50		ug/L	P410533	
		Molybdenum	0.15	U	ug/L	P410533	
		Nickel	0.50	U	ug/L	P410533	
		Selenium	0.20	U	ug/L	P410533	
		Silver	0.010	U	ug/L	P410533	
		Thallium	0.10	U	ug/L	P410533	
		SM 2340B	Hardness	7.4		mg/L	P410533

Sample Location: Stone Mill Creek Upstream S Dianna St

Collection Date/Time: 02/28/2022 12:10

Field ID: G2TLHR0046

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2308656	DEP SOP: NU-094-1	Color (true)**	62		PCU	P410509	
	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P410514	
	EPA 300.0 Rev. 2.1	Chloride	4.4		mg Cl/L	P410851	
		Sulfate	2.5		mg SO4/L	P410855	
	SM 2320 B-2011	Total Alkalinity	18		mg CaCO3/L	P410661	
	SM 2540 C-2011	TDS	48		mg/L	P410754	
	SM 2540 D-2011	TSS	2	I	mg/L	P410897	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P410664	
2308657	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P410683	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30		mg N/L	P410481	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P410784	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P410933	
	SM 5310 B-2011	Organic Carbon	4.4		mg C/L	P410643	
2308658	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P410505	
2308665	EPA 200.7 Rev. 4.4	Calcium	8.36		mg/L	P410533	
		Iron	390		ug/L	P410533	
		Magnesium	1.04		mg/L	P410533	
		Potassium	0.40	I	mg/L	P410533	
		Sodium	2.9		mg/L	P410533	
		Strontium	255		ug/L	P410533	
		Tin	3.0	U	ug/L	P410533	
		Titanium	1.4	I	ug/L	P410533	
		Vanadium	2.0	U	ug/L	P410533	
		Zinc	5.0	U	ug/L	P410533	
	EPA 200.8 Rev. 5.4	Aluminum	205		ug/L	P410533	
		Antimony	0.050	U	ug/L	P410533	
		Arsenic	0.17	I	ug/L	P410533	
		Barium	15.8		ug/L	P410533	
		Beryllium	0.016	I	ug/L	P410533	
		Boron**	10.1		ug/L	P410533	
		Cadmium	0.020	U	ug/L	P410533	
		Chromium	0.40	U	ug/L	P410533	
		Cobalt	0.133		ug/L	P410533	
		Copper	0.40	U	ug/L	P410533	
		Lead	0.28	I	ug/L	P410533	
		Manganese	9.24		ug/L	P410533	
		Molybdenum	0.15	U	ug/L	P410533	
		Nickel	0.50	U	ug/L	P410533	
		Selenium	0.20	U	ug/L	P410533	
		Silver	0.010	U	ug/L	P410533	
		Thallium	0.10	U	ug/L	P410533	
	SM 2340B	Hardness	25.2		mg/L	P410533	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P410509

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410514

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P410533

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: P410533

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: P410851

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: P410855

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410683

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410686

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410481

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410784

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P410933

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P410505

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

Reference Method: SM 2320 B-2011
Batch ID: P410661

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

Reference Method: SM 2540 C-2011
Batch ID: P410754

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P410897

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P410664

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P410643

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: P410509

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410514

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	97.2		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P410533

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	106		P	85 - 115
Magnesium	106		P	85 - 115
Potassium	102		P	85 - 115
Sodium	105		P	85 - 115
Strontium	102		P	85 - 115
Tin	102		P	85 - 115
Titanium	101		P	85 - 115
Vanadium	94.0		P	85 - 115
Zinc	98.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P410533

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	99.3		P	85 - 115
Arsenic	97.1		P	85 - 115
Barium	100		P	85 - 115
Beryllium	92.8		P	85 - 115
Boron	104		P	85 - 115
Cadmium	97.5		P	85 - 115
Chromium	93.2		P	85 - 115
Cobalt	96.5		P	85 - 115
Copper	94.6		P	85 - 115
Lead	93.6		P	85 - 115
Manganese	94.3		P	85 - 115
Molybdenum	96.6		P	85 - 115
Nickel	97.4		P	85 - 115
Selenium	97.2		P	85 - 115
Silver	95.8		P	85 - 115
Thallium	97.0		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410851

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410855

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410683

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410686

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410481

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: P410784

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P410933

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P410505

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.6		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P410661

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.6		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P410664

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	93 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P410643

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P410533

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2307826	Calcium	100		P	80 - 120
2307826	Iron	107	106	P/P	80 - 120
2307826	Magnesium	106	106	P/P	80 - 120
2307826	Potassium	103	102	P/P	80 - 120
2307826	Sodium	104	103	P/P	80 - 120
2307826	Strontium	101	101	P/P	80 - 120
2307826	Tin	99.8	99.8	P/P	80 - 120
2307826	Titanium	102	102	P/P	80 - 120
2307826	Vanadium	95.9	95.4	P/P	80 - 120
2307826	Zinc	97.6	98.1	P/P	80 - 120
2307827	Calcium	98.3		P	80 - 120
2307827	Iron	101		P	80 - 120
2307827	Magnesium	96.7		P	80 - 120
2307827	Potassium	97.9		P	80 - 120
2307827	Sodium	102		P	80 - 120
2307827	Strontium	95.6		P	80 - 120
2307827	Tin	94.0		P	80 - 120
2307827	Titanium	97.6		P	80 - 120
2307827	Vanadium	91.3		P	80 - 120
2307827	Zinc	91.0		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P410533

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2307826	Aluminum	99.8	99.5	P/P	80 - 120
2307826	Antimony	102	102	P/P	80 - 120
2307826	Arsenic	98.5	97.4	P/P	80 - 120
2307826	Barium	102	101	P/P	80 - 120
2307826	Beryllium	91.4	91.5	P/P	80 - 120
2307826	Boron	105	105	P/P	80 - 120
2307826	Cadmium	101	97.9	P/P	80 - 120
2307826	Chromium	96.2	95.8	P/P	80 - 120
2307826	Cobalt	95.2	94.7	P/P	80 - 120
2307826	Copper	93.1	91.6	P/P	80 - 120
2307826	Lead	94.2	94.9	P/P	80 - 120
2307826	Manganese	96.4	95.4	P/P	80 - 120
2307826	Molybdenum	100	99.4	P/P	80 - 120
2307826	Nickel	95.8	94.8	P/P	80 - 120
2307826	Selenium	95.6	98.0	P/P	80 - 120
2307826	Silver	96.1	95.6	P/P	80 - 120
2307826	Thallium	99.4	101	P/P	80 - 120
2307827	Aluminum	99.0		P	80 - 120
2307827	Antimony	105		P	80 - 120
2307827	Arsenic	98.3		P	80 - 120
2307827	Barium	103		P	80 - 120
2307827	Beryllium	91.4		P	80 - 120
2307827	Boron	106		P	80 - 120
2307827	Cadmium	101		P	80 - 120
2307827	Chromium	99.1		P	80 - 120
2307827	Cobalt	95.5		P	80 - 120
2307827	Copper	92.0		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P410533

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2307827	Lead	95.4		P	80 - 120
2307827	Manganese	98.7		P	80 - 120
2307827	Molybdenum	101		P	80 - 120
2307827	Nickel	94.6		P	80 - 120
2307827	Selenium	97.5		P	80 - 120
2307827	Silver	97.6		P	80 - 120
2307827	Thallium	100		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410851

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308284	Chloride	99.0		P	90 - 110
2308650	Chloride	97.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410855

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308284	Sulfate	97.1		P	90 - 110
2308650	Sulfate	98.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410683

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308657	Ammonia-N	99.0	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410686

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308900	Ammonia-N	101	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410481

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308651	Kjeldahl Nitrogen	109	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410784

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308275	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P410933

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308314	Total-P	106	101	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P410505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308655	O-Phosphate-P	98.6	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P410664

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308685	Fluoride	98.0	97.5	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P410643

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2308902	Organic Carbon	97.8	97.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P410509

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308650	Color (true)	5.73	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308650	Turbidity	3.33	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P410533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2307826	Calcium	0.970	Spike	P	0 - 20
2307826	Iron	1.29	Spike	P	0 - 20
2307826	Magnesium	0.0172	Spike	P	0 - 20
2307826	Potassium	0.887	Spike	P	0 - 20
2307826	Sodium	0.921	Spike	P	0 - 20
2307826	Strontium	0.466	Spike	P	0 - 20
2307826	Tin	0.00665	Spike	P	0 - 20
2307826	Titanium	0.176	Spike	P	0 - 20
2307826	Vanadium	0.553	Spike	P	0 - 20
2307826	Zinc	0.450	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P410533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2307826	Aluminum	0.364	Spike	P	0 - 20
2307826	Antimony	0.189	Spike	P	0 - 20
2307826	Arsenic	1.17	Spike	P	0 - 20
2307826	Barium	0.586	Spike	P	0 - 20
2307826	Beryllium	0.153	Spike	P	0 - 20
2307826	Boron	0.368	Spike	P	0 - 20
2307826	Cadmium	3.52	Spike	P	0 - 20
2307826	Chromium	0.475	Spike	P	0 - 20
2307826	Cobalt	0.453	Spike	P	0 - 20
2307826	Copper	1.36	Spike	P	0 - 20
2307826	Lead	0.708	Spike	P	0 - 20
2307826	Manganese	0.655	Spike	P	0 - 20
2307826	Molybdenum	0.821	Spike	P	0 - 20
2307826	Nickel	1.08	Spike	P	0 - 20
2307826	Selenium	2.44	Spike	P	0 - 20
2307826	Silver	0.490	Spike	P	0 - 20
2307826	Thallium	2.09	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308284	Chloride	2.10	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410855

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308284	Sulfate	0.525	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410683

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308657	Ammonia-N	0.890	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410686

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308900	Ammonia-N	1.97	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410481

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308651	Kjeldahl Nitrogen	2.50	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410784

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308275	NO2NO3-N	0.995	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P410933

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308314	Total-P	3.56	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P410505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308655	O-Phosphate-P	2.31	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P410661

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308685	Total Alkalinity	0.0161	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P410754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308284	TDS	3.31	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P410664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308685	Fluoride	0.498	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P410643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2308902	Organic Carbon	0.504	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A110689

Included Lab Sample IDs: 2308652, 2308655, 2308658

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

Reference Method: DEP SOP: NU-094-1

Run ID: A110690

Included Lab Sample IDs: 2308650, 2308653, 2308656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A110692

Included Lab Sample IDs: 2308650, 2308653, 2308656

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

Reference Method: SM 5310 B-2011

Run ID: A110740

Included Lab Sample IDs: 2308651, 2308654, 2308657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	95.6	P/P	90 - 110
Organic Carbon	95.6	98.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A110746

Included Lab Sample IDs: 2308664, 2308665, 2308666

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.7	99.7	P/P	90 - 110
Aluminum	99.7	98.3	P/P	90 - 110
Antimony	96.3	97.9	P/P	90 - 110
Antimony	97.9	98.7	P/P	90 - 110
Arsenic	93.7	93.2	P/P	90 - 110
Arsenic	94.5	93.7	P/P	90 - 110
Barium	96.5	97.4	P/P	90 - 110
Barium	97.4	97.7	P/P	90 - 110
Beryllium	91.6	91.4	P/P	90 - 110
Beryllium	92.0	91.6	P/P	90 - 110
Boron	101	99.5	P/P	90 - 110
Boron	99.5	98.0	P/P	90 - 110
Cadmium	98.7	99.1	P/P	90 - 110
Cadmium	98.8	98.7	P/P	90 - 110
Chromium	93.9	95.6	P/P	90 - 110
Chromium	95.6	96.9	P/P	90 - 110
Cobalt	91.8	90.5	P/P	90 - 110
Cobalt	93.5	91.8	P/P	90 - 110
Copper	92.8	91.5	P/P	90 - 110
Lead	91.6	91.7	P/P	90 - 110
Lead	91.7	90.8	P/P	90 - 110
Manganese	94.4	95.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A110746

Included Lab Sample IDs: 2308664, 2308665, 2308666

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Manganese	95.0	96.6	P/P	90 - 110
Molybdenum	95.2	94.6	P/P	90 - 110
Molybdenum	96.6	95.2	P/P	90 - 110
Nickel	92.4	90.9	P/P	90 - 110
Nickel	94.5	92.4	P/P	90 - 110
Selenium	95.7	97.2	P/P	90 - 110
Selenium	97.2	97.9	P/P	90 - 110
Silver	92.5	92.6	P/P	90 - 110
Silver	93.3	92.5	P/P	90 - 110
Thallium	96.5	93.5	P/P	90 - 110
Thallium	96.8	96.5	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A110751

Included Lab Sample IDs: 2308650, 2308653, 2308656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.2	98.5	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A110751

Included Lab Sample IDs: 2308650, 2308653, 2308656

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A110754

Included Lab Sample IDs: 2308651, 2308654, 2308657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.9	97.0	P/P	90 - 110
Kjeldahl Nitrogen	97.0	95.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A110761

Included Lab Sample IDs: 2308651, 2308654, 2308657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.6	P/P	90 - 110
Ammonia-N	98.2	97.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A110770

Included Lab Sample IDs: 2308664, 2308665, 2308666

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	100	P/P	90 - 110
Iron	102	102	P/P	90 - 110
Magnesium	99.1	99.3	P/P	90 - 110
Potassium	99.1	98.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A110770

Included Lab Sample IDs: 2308664, 2308665, 2308666

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sodium	101	100	P/P	90 - 110
Strontium	92.7	94.0	P/P	90 - 110
Tin	95.3	96.0	P/P	90 - 110
Titanium	94.8	96.7	P/P	90 - 110
Vanadium	93.6	95.3	P/P	90 - 110
Zinc	93.7	95.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A110775

Included Lab Sample IDs: 2308666

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	94.0	94.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110807

Included Lab Sample IDs: 2308651, 2308654, 2308657

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A110831

Included Lab Sample IDs: 2308650, 2308653, 2308656

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A110930

Included Lab Sample IDs: 2308651, 2308654, 2308657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	101	P/P	90 - 110
Total-P	102	101	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)	100				5.73	
EPA 180.1 Rev. 2.0	Turbidity	97.2				3.33	
EPA 200.7 Rev. 4.4	Calcium	104	100	98.3			0.970
	Iron	106	107	106	101		1.29
	Magnesium	106	106	106	96.7		0.0172
	Potassium	102	103	102	97.9		0.887
	Sodium	105	104	103	102		0.921
	Strontium	102	101	101	95.6		0.466
	Tin	102	99.8	99.8	94.0		0.0066
	Titanium	101	102	102	97.6		0.176
	Vanadium	94.0	95.9	95.4	91.3		0.553
	Zinc	98.4	97.6	98.1	91.0		0.450
EPA 200.8 Rev. 5.4	Aluminum	100	99.8	99.5	99.0		0.364
	Antimony	99.3	102	102	105		0.189
	Arsenic	97.1	98.5	97.4	98.3		1.17
	Barium	100	102	101	103		0.586
	Beryllium	92.8	91.4	91.5	91.4		0.153
	Boron	104	105	105	106		0.368
	Cadmium	97.5	101	97.9	101		3.52
	Chromium	93.2	96.2	95.8	99.1		0.475
	Cobalt	96.5	95.2	94.7	95.5		0.453
	Copper	94.6	93.1	91.6	92.0		1.36
	Lead	93.6	94.2	94.9	95.4		0.708
	Manganese	94.3	96.4	95.4	98.7		0.655
	Molybdenum	96.6	100	99.4	101		0.821
	Nickel	97.4	95.8	94.8	94.6		1.08
	Selenium	97.2	95.6	98.0	97.5		2.44
	Silver	95.8	96.1	95.6	97.6		0.490
	Thallium	97.0	99.4	101	100		2.09
EPA 300.0 Rev. 2.1	Chloride	100	99.0	97.1		2.10	
	Sulfate	101	97.1	98.9		0.525	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	99.0	100			0.890
	Ammonia-N	98.4	101	98.4			1.97
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	109	106			2.50
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	102			0.995
EPA 365.1 Rev. 2.0	Total-P	98.0	106	101			3.56
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6	98.6	101			2.31
SM 2320 B-2011	Total Alkalinity	98.6				0.0161	
SM 2540 C-2011	TDS					3.31	
SM 4500 F-C-2011	Fluoride	98.5	98.0	97.5			0.498
SM 5310 B-2011	Organic Carbon	93.8	97.8	97.1			0.504

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2308650, 2308653, 2308656
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2308650, 2308653, 2308656
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2308664, 2308665, 2308666
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2308664, 2308665, 2308666
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2308650, 2308653, 2308656
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2308650, 2308653, 2308656

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2308651, 2308654, 2308657
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2308651, 2308654, 2308657
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2308651, 2308654, 2308657
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2308651, 2308654, 2308657
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2308652, 2308655, 2308658
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2308650, 2308653, 2308656
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2308664, 2308665, 2308666
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2308650, 2308653, 2308656
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2308650, 2308653, 2308656
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2308650, 2308653, 2308656
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2308651, 2308654, 2308657

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	02/28/2022			03/01/2022 15:19	Samantha L Bates	2308650
	02/28/2022			03/01/2022 15:20	Samantha L Bates	2308653
	02/28/2022			03/01/2022 15:21	Samantha L Bates	2308656
EPA 180.1 Rev. 2.0	02/28/2022			03/01/2022 15:08	Khloe J Berg	2308650
	02/28/2022			03/01/2022 15:10	Khloe J Berg	2308653
	02/28/2022			03/01/2022 15:11	Khloe J Berg	2308656
EPA 200.7 Rev. 4.4	02/28/2022	03/02/2022 10:10	Megan Whitefoot	03/04/2022 21:24	Josef B Mick	2308664
	02/28/2022	03/02/2022 10:10	Megan Whitefoot	03/04/2022 21:32	Josef B Mick	2308665
	02/28/2022	03/02/2022 10:10	Megan Whitefoot	03/04/2022 21:40	Josef B Mick	2308666
EPA 200.8 Rev. 5.4	02/28/2022	03/02/2022 10:10	Megan Whitefoot	03/03/2022 15:21	Alexander Thompson	2308664
	02/28/2022	03/02/2022 10:10	Megan Whitefoot	03/03/2022 15:30	Alexander Thompson	2308665
	02/28/2022	03/02/2022 10:10	Megan Whitefoot	03/03/2022 16:27	Alexander Thompson	2308666
EPA 300.0 Rev. 2.1	02/28/2022	03/02/2022 10:10	Megan Whitefoot	03/04/2022 18:44	Alexander Thompson	2308666
	02/28/2022			03/07/2022 18:16	James L Waggeberby	2308650
	02/28/2022			03/07/2022 21:29	James L Waggeberby	2308653
EPA 350.1 Rev. 2.0	02/28/2022			03/07/2022 21:41	James L Waggeberby	2308656
	02/28/2022			03/04/2022 10:46	Judith K. Clark	2308657
	02/28/2022			03/04/2022 12:14	Judith K. Clark	2308651
EPA 351.2 Rev. 2.0	02/28/2022			03/04/2022 12:16	Judith K. Clark	2308654
	02/28/2022	03/02/2022 12:36	Samantha L Bates	03/03/2022 17:29	Alexandra J Mattheus	2308651
	02/28/2022	03/02/2022 12:36	Samantha L Bates	03/03/2022 17:33	Alexandra J Mattheus	2308654
EPA 353.2 Rev. 2.0	02/28/2022	03/02/2022 12:36	Samantha L Bates	03/03/2022 17:38	Alexandra J Mattheus	2308657
	02/28/2022			03/08/2022 11:35	Beverly Y. Sanders	2308654
	02/28/2022			03/08/2022 11:36	Beverly Y. Sanders	2308657
EPA 365.1 Rev. 2.0	02/28/2022			03/08/2022 12:08	Beverly Y. Sanders	2308651
	02/28/2022	03/11/2022 12:25	Simonne.V. Calhoun	03/14/2022 14:48	James L Waggeberby	2308651
	02/28/2022	03/11/2022 12:25	Simonne.V. Calhoun	03/14/2022 14:49	James L Waggeberby	2308654
EPA 365.1 Rev. 2.0 dissolved	02/28/2022	03/11/2022 12:25	Simonne.V. Calhoun	03/14/2022 14:57	James L Waggeberby	2308657
	02/28/2022			03/01/2022 14:30	James L Waggeberby	2308655
	02/28/2022			03/01/2022 14:33	James L Waggeberby	2308652
SM 2320 B-2011	02/28/2022			03/01/2022 14:34	James L Waggeberby	2308658
	02/28/2022			03/03/2022 06:19	Dale L. Simmons	2308650
	02/28/2022			03/03/2022 06:33	Dale L. Simmons	2308653
SM 2340B	02/28/2022			03/03/2022 06:45	Dale L. Simmons	2308656
	02/28/2022			03/04/2022 21:24	Josef B Mick	2308664
	02/28/2022			03/04/2022 21:32	Josef B Mick	2308665
SM 2540 C-2011	02/28/2022			03/04/2022 21:40	Josef B Mick	2308666
	02/28/2022			03/02/2022 14:21	Yijie Li	2308650, 2308653, 2308656
	02/28/2022			03/02/2022 14:26	Yijie Li	2308650, 2308653, 2308656
SM 4500 F-C-2011	02/28/2022			03/03/2022 06:19	Dale L. Simmons	2308650

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	02/28/2022			03/03/2022 06:33	Dale L. Simmons	2308653
	02/28/2022			03/03/2022 06:45	Dale L. Simmons	2308656
SM 5310 B-2011	02/28/2022			03/02/2022 15:00	Khloe J Berg	2308651
	02/28/2022			03/02/2022 17:29	Khloe J Berg	2308654
	02/28/2022			03/03/2022 09:28	Khloe J Berg	2308657