

Chemical Analysis Report

NE-DIST-2022-01-20-03

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

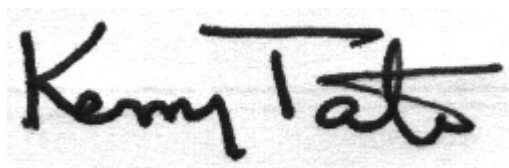
Event Description: **Nassau Suwannee Lakes**
Request ID: **RQ-2022-01-17-27**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 10-FEB-2022 09:14

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: Ocean Pond Center

Collection Date/Time: 01/19/2022 11:05

Field ID: 21010011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2300807	DEP SOP: NU-094-1	Color (true)**	230		PCU	P408745	
	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P408769	
	EPA 300.0 Rev. 2.1	Chloride	5.2		mg Cl/L	P409266	
		Sulfate	1.1		mg SO4/L	P409269	
	SM 2320 B-2011	Total Alkalinity	0.74	I	mg CaCO3/L	P408901	
	SM 2540 C-2011	TDS	65		mg/L	P409305	
	SM 2540 D-2011	TSS	3	I	mg/L	P409308	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P408904	
2300809	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P409272	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P409067	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.033		mg N/L	P408983	
	EPA 365.1 Rev. 2.0	Total-P	0.029	J	mg P/L	P408852	MS
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P409370	
2300811	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P408740	
2300819	EPA 200.7 Rev. 4.4	Calcium	1.56		mg/L	P408765	
		Iron	1.23E+03		ug/L	P408765	
		Magnesium	0.68		mg/L	P408765	
		Potassium	0.30	U	mg/L	P408765	
		Sodium	3.3		mg/L	P408765	
		Strontium	7.3	I	ug/L	P408765	
		Tin	3.0	U	ug/L	P408765	
		Titanium	2.3	I	ug/L	P408765	
		Vanadium	2.0	U	ug/L	P408765	
		Zinc	5.0	U	ug/L	P408765	
	EPA 200.8 Rev. 5.4	Aluminum	412		ug/L	P408765	
		Antimony	0.054	I	ug/L	P408765	
		Arsenic	0.68		ug/L	P408765	
		Barium	7.21		ug/L	P408765	
		Beryllium	0.035	I	ug/L	P408765	
		Boron**	13.5		ug/L	P408765	
		Cadmium	0.020	U	ug/L	P408765	
		Chromium	0.42	I	ug/L	P408765	
		Cobalt	0.213		ug/L	P408765	
		Copper	0.40	U	ug/L	P408765	
		Lead	0.89		ug/L	P408765	
		Manganese	19.0		ug/L	P408765	
		Molybdenum	0.15	U	ug/L	P408765	
		Nickel	0.50	U	ug/L	P408765	
		Selenium	0.20	U	ug/L	P408765	
		Silver	0.010	U	ug/L	P408765	
		Thallium	0.10	U	ug/L	P408765	
		Hardness	6.7		mg/L	P408765	

Field ID: 21010011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0: Total-P: Refer to the Lab Analysis Report for an explanation of QC Codes.
EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 01/25/2022.

Sample Location: Palestine Lake Center

Collection Date/Time: 01/19/2022 13:05

Field ID: 19010044

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2300808	DEP SOP: NU-094-1	Color (true)**	160		PCU	P408745	
	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P408770	
	EPA 300.0 Rev. 2.1	Chloride	6.3		mg Cl/L	P409266	
		Sulfate	2.4		mg SO4/L	P409269	
	SM 2320 B-2011	Total Alkalinity	0.75	I	mg CaCO3/L	P408901	
	SM 2540 C-2011	TDS	61		mg/L	P409305	
	SM 2540 D-2011	TSS	4	I	mg/L	P409308	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P408904	
2300810	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P409272	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P409068	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.028		mg N/L	P408983	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P408852	MS
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P409370	
2300812	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P408740	
2300820	EPA 200.7 Rev. 4.4	Calcium	1.77		mg/L	P408765	
		Iron	420		ug/L	P408765	
		Magnesium	1.15		mg/L	P408765	
		Potassium	0.40	I	mg/L	P408765	
		Sodium	3.9		mg/L	P408765	
		Strontium	9.6		ug/L	P408765	
		Tin	3.0	U	ug/L	P408765	
		Titanium	1.5	I	ug/L	P408765	
		Vanadium	2.0	U	ug/L	P408765	
		Zinc	5.0	U	ug/L	P408765	
	EPA 200.8 Rev. 5.4	Aluminum	245		ug/L	P408765	
		Antimony	0.088	I	ug/L	P408765	
		Arsenic	0.38		ug/L	P408765	
		Barium	8.87		ug/L	P408765	
		Beryllium	0.017	I	ug/L	P408765	
		Boron**	17.3		ug/L	P408765	
		Cadmium	0.020	U	ug/L	P408765	
		Chromium	0.40	U	ug/L	P408765	
		Cobalt	0.080		ug/L	P408765	
		Copper	0.40	U	ug/L	P408765	
		Lead	0.56		ug/L	P408765	
		Manganese	22.5		ug/L	P408765	
		Molybdenum	0.15	U	ug/L	P408765	
		Nickel	0.50	U	ug/L	P408765	
		Selenium	0.20	U	ug/L	P408765	
		Silver	0.016	I	ug/L	P408765	
		Thallium	0.10	U	ug/L	P408765	
	SM 2340B	Hardness	9.2		mg/L	P408765	

Field ID: 19010044

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 02/03/2022.

Sample Location: Lake Sampson Center

Collection Date/Time: 01/19/2022 15:00

Field ID: G1NE0936

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2300813	DEP SOP: NU-094-1	Color (true)**	140		PCU	P408745	
	EPA 180.1 Rev. 2.0	Turbidity	6.4		NTU	P408770	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P409266	
		Sulfate	11		mg SO4/L	P409269	
	SM 2320 B-2011	Total Alkalinity	15		mg CaCO3/L	P408901	
	SM 2540 C-2011	TDS	88		mg/L	P409305	
	SM 2540 D-2011	TSS	5	I	mg/L	P409308	
	SM 4500 F-C-2011	Fluoride	0.044	I	mg F/L	P408904	
2300814	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P409272	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P409132	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P408983	
	EPA 365.1 Rev. 2.0	Total-P	0.050		mg P/L	P408852	MS
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P409370	
2300815	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P408740	

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: P408745

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P408769

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P408770

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P408765

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: P408765

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409266

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409269

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409272

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409067

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409068

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409132

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408983

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408852

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408740

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P408901

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

Reference Method: SM 2540 C-2011
Batch ID: P409305

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P409308

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P408904

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P409370

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: P408745

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.9		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P408765

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	107		P	85 - 115
Iron	111		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	104		P	85 - 115
Sodium	106		P	85 - 115
Strontium	104		P	85 - 115
Tin	109		P	85 - 115
Titanium	107		P	85 - 115
Vanadium	106		P	85 - 115
Zinc	110		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408765

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.2		P	85 - 115
Antimony	97.1		P	85 - 115
Arsenic	97.5		P	85 - 115
Barium	101		P	85 - 115
Beryllium	97.9		P	85 - 115
Boron	104		P	85 - 115
Cadmium	95.8		P	85 - 115
Chromium	96.2		P	85 - 115
Cobalt	95.4		P	85 - 115
Copper	97.0		P	85 - 115
Lead	95.6		P	85 - 115
Manganese	96.3		P	85 - 115
Molybdenum	97.6		P	85 - 115
Nickel	98.2		P	85 - 115
Selenium	97.1		P	85 - 115
Silver	95.2		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409266

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.9		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409272

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409067

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409068

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409132

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408983

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: P408852

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408740

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

Reference Method: SM 2320 B-2011
Batch ID: P408901

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.3		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P408904

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.0		P	93 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P409370

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P408765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300543	Calcium	105		P	80 - 120
2300543	Iron	109		P	80 - 120
2300543	Magnesium	102		P	80 - 120
2300543	Potassium	103		P	80 - 120
2300543	Sodium	101		P	80 - 120
2300543	Strontium	102		P	80 - 120
2300543	Tin	107		P	80 - 120
2300543	Titanium	103		P	80 - 120
2300543	Vanadium	104		P	80 - 120
2300543	Zinc	102		P	80 - 120
2300852	Calcium	104		P	80 - 120
2300852	Iron	105	108	P/P	80 - 120
2300852	Magnesium	102		P	80 - 120
2300852	Potassium	99.8	103	P/P	80 - 120
2300852	Sodium	102	102	P/P	80 - 120
2300852	Strontium	101	101	P/P	80 - 120
2300852	Tin	108	106	P/P	80 - 120
2300852	Titanium	105	105	P/P	80 - 120
2300852	Vanadium	104	104	P/P	80 - 120
2300852	Zinc	104	103	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P408765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300543	Aluminum	95.7		P	80 - 120
2300543	Antimony	98.1		P	80 - 120
2300543	Arsenic	95.6		P	80 - 120
2300543	Barium	101		P	80 - 120
2300543	Beryllium	98.5		P	80 - 120
2300543	Boron	90.5		P	80 - 120
2300543	Cadmium	96.7		P	80 - 120
2300543	Chromium	97.6		P	80 - 120
2300543	Cobalt	92.3		P	80 - 120
2300543	Copper	92.5		P	80 - 120
2300543	Lead	96.0		P	80 - 120
2300543	Manganese	96.9		P	80 - 120
2300543	Molybdenum	98.1		P	80 - 120
2300543	Nickel	94.8		P	80 - 120
2300543	Selenium	94.9		P	80 - 120
2300543	Silver	94.3		P	80 - 120
2300543	Thallium	100		P	80 - 120
2300852	Aluminum	94.5	96.5	P/P	80 - 120
2300852	Antimony	97.1	98.9	P/P	80 - 120
2300852	Arsenic	95.0	95.8	P/P	80 - 120
2300852	Barium	99.4	102	P/P	80 - 120
2300852	Beryllium	94.3	98.3	P/P	80 - 120
2300852	Boron	102	105	P/P	80 - 120
2300852	Cadmium	94.4	96.8	P/P	80 - 120
2300852	Chromium	95.5	99.0	P/P	80 - 120
2300852	Cobalt	91.5	93.4	P/P	80 - 120
2300852	Copper	92.4	94.7	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300852	Lead	94.4	96.6	P/P	80 - 120
2300852	Manganese	94.9	97.8	P/P	80 - 120
2300852	Molybdenum	96.7	98.4	P/P	80 - 120
2300852	Nickel	93.9	95.6	P/P	80 - 120
2300852	Selenium	94.7	94.6	P/P	80 - 120
2300852	Silver	93.4	94.9	P/P	80 - 120
2300852	Thallium	99.4	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300613	Chloride	97.9		P	90 - 110
2300762	Chloride	99.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300613	Sulfate	96.6		P	90 - 110
2300762	Sulfate	98.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300663	Ammonia-N	95.0	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409067

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300871	Kjeldahl Nitrogen	106	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409068

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300846	Kjeldahl Nitrogen	104	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300929	Kjeldahl Nitrogen	105	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408983

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300868	NO2NO3-N	100	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300809	Total-P	110	109	F/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408740

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300719	O-Phosphate-P	98.2	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P408904

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300716	Fluoride	101	98.4	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P409370

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300869	Organic Carbon	101		P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P408745

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300825	Color (true)	0.861	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P408769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300728	Turbidity	4.26	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P408770

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300865	Turbidity	3.73	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P408765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300852	Calcium	0.307	Spike	P	0 - 20
2300852	Iron	2.76	Spike	P	0 - 20
2300852	Magnesium	1.60	Spike	P	0 - 20
2300852	Potassium	2.40	Spike	P	0 - 20
2300852	Sodium	0.0487	Spike	P	0 - 20
2300852	Strontium	0.0347	Spike	P	0 - 20
2300852	Tin	2.23	Spike	P	0 - 20
2300852	Titanium	0.460	Spike	P	0 - 20
2300852	Vanadium	0.550	Spike	P	0 - 20
2300852	Zinc	1.42	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300852	Aluminum	2.13	Spike	P	0 - 20
2300852	Antimony	1.83	Spike	P	0 - 20
2300852	Arsenic	0.824	Spike	P	0 - 20
2300852	Barium	2.05	Spike	P	0 - 20
2300852	Beryllium	4.16	Spike	P	0 - 20
2300852	Boron	2.14	Spike	P	0 - 20
2300852	Cadmium	2.50	Spike	P	0 - 20
2300852	Chromium	3.55	Spike	P	0 - 20
2300852	Cobalt	2.07	Spike	P	0 - 20
2300852	Copper	2.45	Spike	P	0 - 20
2300852	Lead	2.23	Spike	P	0 - 20
2300852	Manganese	2.43	Spike	P	0 - 20
2300852	Molybdenum	1.47	Spike	P	0 - 20
2300852	Nickel	1.84	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300852	Selenium	0.0864	Spike	P	0 - 20
2300852	Silver	1.61	Spike	P	0 - 20
2300852	Thallium	2.15	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300613	Chloride	0.129	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300613	Sulfate	0.0644	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300663	Ammonia-N	1.57	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300871	Kjeldahl Nitrogen	0.186	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409068

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300846	Kjeldahl Nitrogen	4.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300929	Kjeldahl Nitrogen	1.49	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408983

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P408983

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300868	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P408852

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300809	Total-P	1.50	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P408740

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300719	O-Phosphate-P	2.51	Spike	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P408901

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300716	Total Alkalinity	0.0427	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011

Batch ID: P409305

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300675	TDS	1.97	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011

Batch ID: P408904

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300716	Fluoride	2.03	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011

Batch ID: P409370

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300869	Organic Carbon	0.775	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: A109950

Included Lab Sample IDs: 2300811, 2300812, 2300815

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

Reference Method: DEP SOP: NU-094-1

Run ID: A109951

Included Lab Sample IDs: 2300807, 2300808, 2300813

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	85 - 115
Color (true)	103	102	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A109963

Included Lab Sample IDs: 2300807, 2300808, 2300813

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	98.5	P/P	95 - 105
Turbidity	98.5	99.0	P/P	95 - 105

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A109990

Included Lab Sample IDs: 2300819, 2300820

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	95.3	97.4	P/P	90 - 110
Aluminum	96.2	95.3	P/P	90 - 110
Antimony	98.5	99.0	P/P	90 - 110
Antimony	99.1	98.5	P/P	90 - 110
Arsenic	95.6	97.5	P/P	90 - 110
Arsenic	96.4	95.6	P/P	90 - 110
Barium	98.1	98.8	P/P	90 - 110
Barium	98.8	98.6	P/P	90 - 110
Beryllium	95.8	97.4	P/P	90 - 110
Beryllium	96.4	95.8	P/P	90 - 110
Boron	90.9	91.5	P/P	90 - 110
Boron	91.4	90.9	P/P	90 - 110
Cadmium	96.1	96.5	P/P	90 - 110
Cadmium	96.5	96.6	P/P	90 - 110
Chromium	96.5	96.7	P/P	90 - 110
Chromium	96.7	96.8	P/P	90 - 110
Cobalt	91.5	92.3	P/P	90 - 110
Cobalt	91.6	91.5	P/P	90 - 110
Copper	94.0	94.8	P/P	90 - 110
Copper	94.2	94.0	P/P	90 - 110
Manganese	96.8	98.1	P/P	90 - 110
Manganese	98.1	98.0	P/P	90 - 110
Molybdenum	95.6	96.4	P/P	90 - 110
Molybdenum	96.4	96.0	P/P	90 - 110
Nickel	94.2	94.5	P/P	90 - 110
Nickel	94.5	95.4	P/P	90 - 110
Selenium	96.0	96.4	P/P	90 - 110
Selenium	96.4	97.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A109990

Included Lab Sample IDs: 2300819, 2300820

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	94.7	95.7	P/P	90 - 110
Silver	95.7	95.3	P/P	90 - 110
Thallium	99.6	98.5	P/P	90 - 110
Thallium	99.8	99.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A110014

Included Lab Sample IDs: 2300819, 2300820

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	92.3	93.9	P/P	90 - 110
Lead	93.9	91.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A110020

Included Lab Sample IDs: 2300819, 2300820

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	104	104	P/P	90 - 110
Iron	104	103	P/P	90 - 110
Magnesium	103	102	P/P	90 - 110
Potassium	99.4	97.6	P/P	90 - 110
Sodium	101	99.0	P/P	90 - 110
Strontium	104	102	P/P	90 - 110
Tin	105	104	P/P	90 - 110
Titanium	102	102	P/P	90 - 110
Vanadium	103	102	P/P	90 - 110
Zinc	105	106	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A110022

Included Lab Sample IDs: 2300807, 2300808, 2300813

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.5	97.3	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A110022

Included Lab Sample IDs: 2300807, 2300808, 2300813

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110046

Included Lab Sample IDs: 2300809, 2300810, 2300814

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A110054

Included Lab Sample IDs: 2300809, 2300810, 2300814

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	105	P/P	90 - 110
Total-P	103	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A110152

Included Lab Sample IDs: 2300809, 2300810

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.9	96.2	P/P	90 - 110
Kjeldahl Nitrogen	96.2	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A110154

Included Lab Sample IDs: 2300807, 2300808, 2300813

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A110164

Included Lab Sample IDs: 2300814

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.8	96.3	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A110189

Included Lab Sample IDs: 2300809, 2300810, 2300814

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	99.6	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
DEP SOP: NU-094-1	Color (true)	99.9					0.861	
EPA 180.1 Rev. 2.0	Turbidity						4.26	
	Turbidity						3.73	
EPA 200.7 Rev. 4.4	Calcium	107	105	104				0.307
	Iron	111	109	105	108			2.76
	Magnesium	105	102	102				1.60
	Potassium	104	103	99.8	103			2.40
	Sodium	106	101	102	102			0.0487
	Strontium	104	102	101	101			0.0347
	Tin	109	107	108	106			2.23
	Titanium	107	103	105	105			0.460
	Vanadium	106	104	104	104			0.550
	Zinc	110	102	104	103			1.42
EPA 200.8 Rev. 5.4	Aluminum	95.2	94.5	96.5	95.7			2.13
	Antimony	97.1	97.1	98.9	98.1			1.83
	Arsenic	97.5	95.0	95.8	95.6			0.824
	Barium	101	99.4	102	101			2.05
	Beryllium	97.9	94.3	98.3	98.5			4.16
	Boron	104	102	105	90.5			2.14
	Cadmium	95.8	94.4	96.8	96.7			2.50
	Chromium	96.2	95.5	99.0	97.6			3.55
	Cobalt	95.4	91.5	93.4	92.3			2.07
	Copper	97.0	92.4	94.7	92.5			2.45
	Lead	95.6	94.4	96.6	96.0			2.23
	Manganese	96.3	94.9	97.8	96.9			2.43
	Molybdenum	97.6	96.7	98.4	98.1			1.47
	Nickel	98.2	93.9	95.6	94.8			1.84
	Selenium	97.1	94.7	94.6	94.9			0.0864
	Silver	95.2	93.4	94.9	94.3			1.61
	Thallium	101	99.4	102	100			2.15
EPA 300.0 Rev. 2.1	Chloride	98.2	97.9	99.7			0.129	
	Sulfate	97.9	96.6	98.8			0.0644	
EPA 350.1 Rev. 2.0	Ammonia-N	96.0	95.0	97.0				1.57
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.6	106	106				0.186
	Kjeldahl Nitrogen	97.1	104	99.5				4.02
	Kjeldahl Nitrogen	107	105	103				1.49
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	100				0.0
EPA 365.1 Rev. 2.0	Total-P	110	110	109				1.50
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	98.2	101				2.51
SM 2320 B-2011	Total Alkalinity	99.3					0.0427	
SM 2540 C-2011	TDS						1.97	
SM 4500 F-C-2011	Fluoride	99.0	101	98.4				2.03
SM 5310 B-2011	Organic Carbon	93.3	101					0.775

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2300807, 2300808, 2300813
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2300807, 2300808, 2300813
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2300819, 2300820
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2300819, 2300820

Reference Method Descriptions

Method	Description	Associated Samples
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2300807, 2300808, 2300813
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2300807, 2300808, 2300813
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2300809, 2300810, 2300814
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2300809, 2300810, 2300814
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2300809, 2300810, 2300814
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2300809, 2300810, 2300814
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2300811, 2300812, 2300815
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2300807, 2300808, 2300813
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2300819, 2300820
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2300807, 2300808, 2300813
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2300807, 2300808, 2300813
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2300807, 2300808, 2300813
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2300809, 2300810, 2300814

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	01/20/2022			01/20/2022 15:31	Blanca Fach	2300813
	01/20/2022			01/20/2022 15:48	Blanca Fach	2300807
	01/20/2022			01/20/2022 15:49	Blanca Fach	2300808
EPA 180.1 Rev. 2.0	01/20/2022			01/20/2022 17:34	Sarah A Nixon	2300807, 2300808, 2300813
EPA 200.7 Rev. 4.4	01/20/2022	01/21/2022 10:53	Emily M Philpot	01/24/2022 23:14	Josef B Mick	2300819
	01/20/2022	01/21/2022 10:53	Emily M Philpot	01/24/2022 23:20	Josef B Mick	2300820
EPA 200.8 Rev. 5.4	01/20/2022	01/21/2022 10:53	Emily M Philpot	01/22/2022 01:07	Alexander Thompson	2300819
	01/20/2022	01/21/2022 10:53	Emily M Philpot	01/22/2022 02:04	Alexander Thompson	2300820
	01/20/2022	01/21/2022 10:53	Emily M Philpot	01/24/2022 18:25	Alexander Thompson	2300819
	01/20/2022	01/21/2022 10:53	Emily M Philpot	01/24/2022 19:05	Alexander Thompson	2300820
EPA 300.0 Rev. 2.1	01/20/2022			02/01/2022 05:49	James L Waggeberby	2300807
	01/20/2022			02/01/2022 06:02	James L Waggeberby	2300808
	01/20/2022			02/01/2022 06:14	James L Waggeberby	2300813
EPA 350.1 Rev. 2.0	01/20/2022			02/01/2022 16:04	Roberta Tatti	2300809
	01/20/2022			02/01/2022 16:05	Roberta Tatti	2300810
	01/20/2022			02/01/2022 16:06	Roberta Tatti	2300814
EPA 351.2 Rev. 2.0	01/20/2022	01/28/2022 11:05	Samantha L Bates	02/01/2022 13:19	Virginia P. Brown	2300809
	01/20/2022	01/28/2022 11:05	Samantha L Bates	02/01/2022 13:48	Virginia P. Brown	2300810
	01/20/2022	01/31/2022 10:51	Samantha L Bates	02/01/2022 16:03	Virginia P. Brown	2300814
EPA 353.2 Rev. 2.0	01/20/2022			01/25/2022 14:22	Nathaniel J Jones	2300809
	01/20/2022			01/25/2022 14:23	Nathaniel J Jones	2300810
	01/20/2022			01/25/2022 14:24	Nathaniel J Jones	2300814
EPA 365.1 Rev. 2.0	01/20/2022	01/25/2022 18:55	Simonne.V. Calhoun	01/26/2022 13:11	Shengyu Ding	2300809
	01/20/2022	01/25/2022 18:55	Simonne.V. Calhoun	01/26/2022 13:18	Shengyu Ding	2300810
	01/20/2022	01/25/2022 18:55	Simonne.V. Calhoun	01/26/2022 13:19	Shengyu Ding	2300814
EPA 365.1 Rev. 2.0 dissolved	01/20/2022			01/20/2022 15:04	James L Waggeberby	2300811
	01/20/2022			01/20/2022 15:05	James L Waggeberby	2300812
	01/20/2022			01/20/2022 15:06	James L Waggeberby	2300815
SM 2320 B-2011	01/20/2022			01/22/2022 00:39	Dale L. Simmons	2300807
	01/20/2022			01/22/2022 00:47	Dale L. Simmons	2300808
	01/20/2022			01/22/2022 00:59	Dale L. Simmons	2300813
SM 2340B	01/20/2022			01/24/2022 23:14	Josef B Mick	2300819
	01/20/2022			01/24/2022 23:20	Josef B Mick	2300820
SM 2540 C-2011	01/20/2022			01/25/2022 16:02	Yijie Li	2300807, 2300808, 2300813
SM 2540 D-2011	01/20/2022			01/25/2022 16:02	Yijie Li	2300807, 2300808, 2300813
SM 4500 F-C-2011	01/20/2022			01/22/2022 00:39	Dale L. Simmons	2300807
	01/20/2022			01/22/2022 00:47	Dale L. Simmons	2300808
	01/20/2022			01/22/2022 00:59	Dale L. Simmons	2300813
	01/20/2022			02/01/2022 20:03	Khloe J Berg	2300809
SM 5310 B-2011	01/20/2022			02/01/2022 20:16	Khloe J Berg	2300810

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	01/20/2022			02/01/2022 20:29	Khloe J Berg	2300814