

Chemical Analysis Report

NE-DIST-2022-03-24-01

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

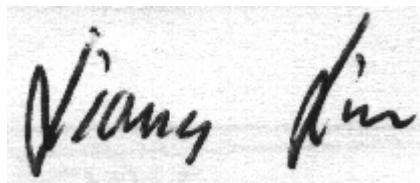
Event Description: **Callahan Boat**
Request ID: **RQ-2022-03-21-17**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 12-APR-2022 14:33

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

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals and Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Thomas Creek 7 Miles Down From Ethel

Collection Date/Time: 03/23/2022 10:15

Field ID: G4NE0299

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2314347	EPA 180.1 Rev. 2.0	Turbidity	5.5		NTU	P411562	
	SM 2320 B-2011	Total Alkalinity	20		mg CaCO3/L	P411654	
	SM 2540 D-2011	TSS	7	I	mg/L	P411689	
	SM 4500 F-C-2011	Fluoride	0.053	I	mg F/L	P411660	
2314348	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P411703	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P411638	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P411590	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P411683	
	SM 5310 B-2011	Organic Carbon	34		mg C/L	P411677	

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: Thomas Creek 5 Miles Down From Ethel

Collection Date/Time: 03/23/2022 10:40

Field ID: G4NE0298

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2314364	EPA 200.7 Rev. 4.4	Calcium	8.91		mg/L	P411563	
		Iron	660		ug/L	P411563	
		Magnesium	3.53		mg/L	P411563	
		Strontium	43.1		ug/L	P411563	
		Tin	3.0	U	ug/L	P411563	
		Titanium	2.5	I	ug/L	P411563	
		Vanadium	2.0	U	ug/L	P411563	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P411563	
		Aluminum	331		ug/L	P411839	
		Antimony	0.051	I	ug/L	P411563	
		Arsenic	0.66		ug/L	P411563	
		Beryllium	0.026	I	ug/L	P411563	
		Cadmium	0.020	U	ug/L	P411563	
		Chromium	0.58	I	ug/L	P411839	
		Cobalt	0.137		ug/L	P411563	
		Copper	0.69	I	ug/L	P411563	
		Lead	0.40		ug/L	P411563	
		Manganese	7.74		ug/L	P411563	
		Molybdenum	0.20	I	ug/L	P411563	
		Nickel	0.81	I	ug/L	P411563	
		Selenium	0.20	U	ug/L	P411563	
		Silver	0.010	U	ug/L	P411563	
		Thallium	0.10	U	ug/L	P411563	

Sample Location: Thomas CR 4mi Below City Prison

Collection Date/Time: 03/23/2022 10:55

Field ID: 19020033

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2314365	EPA 200.7 Rev. 4.4	Calcium	8.74		mg/L	P411563	
		Iron	660		ug/L	P411563	
		Magnesium	3.28		mg/L	P411563	
		Strontium	41.1		ug/L	P411563	
		Tin	3.0	U	ug/L	P411563	
		Titanium	2.5	I	ug/L	P411563	
		Vanadium	2.0	U	ug/L	P411563	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P411563	
		Aluminum	351		ug/L	P411840	
		Antimony	0.052	I	ug/L	P411563	
		Arsenic	0.65		ug/L	P411563	
		Beryllium	0.024	I	ug/L	P411563	
		Cadmium	0.020	U	ug/L	P411563	
		Chromium	0.67	I	ug/L	P411934	
		Cobalt	0.138		ug/L	P411563	
		Copper	0.66	I	ug/L	P411563	
		Lead	0.39	I	ug/L	P411563	
		Manganese	7.79		ug/L	P411563	
		Molybdenum	0.18	I	ug/L	P411563	
		Nickel	0.79	I	ug/L	P411563	
		Selenium	0.20	U	ug/L	P411563	
		Silver	0.010	U	ug/L	P411563	
		Thallium	0.10	U	ug/L	P411563	

Sample Location: Cushing CR @ Stratton Rd.

Collection Date/Time: 03/23/2022 11:50

Field ID: NE400002

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2314349	DEP SOP: NU-094-1	Color (true)**	390		PCU	P411559	
	EPA 180.1 Rev. 2.0	Turbidity	6.0		NTU	P411562	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P411779	
		Sulfate	9.0		mg SO4/L	P411782	
	SM 2320 B-2011	Total Alkalinity	32		mg CaCO3/L	P411654	
	SM 2540 C-2011	TDS	170		mg/L	P411766	
	SM 2540 D-2011	TSS	3	I	mg/L	P411667	
	SM 4500 F-C-2011	Fluoride	0.078	I	mg F/L	P411660	
2314350	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P411703	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P441164	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P411591	
	EPA 365.1 Rev. 2.0	Total-P	0.076		mg P/L	P411683	
	SM 5310 B-2011	Organic Carbon	38		mg C/L	P411677	
2314366	EPA 200.7 Rev. 4.4	Calcium	16.3		mg/L	P411563	
		Iron	1.06E+03		ug/L	P411563	
		Magnesium	4.76		mg/L	P411563	
		Potassium	2.1		mg/L	P411563	
		Sodium	11.7		mg/L	P411563	
		Strontium	78.0		ug/L	P411563	
		Tin	3.0	U	ug/L	P411563	
		Titanium	6.3		ug/L	P411563	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P411563	
		Zinc	5.0	U	ug/L	P411563	
		Aluminum	431		ug/L	P411840	
		Antimony	0.060	I	ug/L	P411563	
		Arsenic	0.76		ug/L	P411563	
		Barium	26.5		ug/L	P411563	
		Beryllium	0.041		ug/L	P411563	
		Boron**	22.6		ug/L	P411563	
		Cadmium	0.020	U	ug/L	P411563	
		Chromium	0.89	I	ug/L	P411934	
		Cobalt	0.225		ug/L	P411563	
		Copper	0.61	I	ug/L	P411563	
		Lead	0.48		ug/L	P411563	
		Manganese	33.0		ug/L	P411563	
		Molybdenum	0.18	I	ug/L	P411563	
		Nickel	0.97	I	ug/L	P411563	
		Selenium	0.20	U	ug/L	P411563	
		Silver	0.010	U	ug/L	P411563	
		Thallium	0.10	U	ug/L	P411563	
	SM 2340B	Hardness	60.3		mg/L	P411563	

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: Alligator CR at SR200

Collection Date/Time: 03/23/2022 12:10

Field ID: 19021007

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2314351	DEP SOP: NU-094-1	Color (true)**	340		PCU	P411559	
	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P411562	
	EPA 300.0 Rev. 2.1	Chloride	16	A	mg Cl/L	P411779	
		Sulfate	9.5	A	mg SO4/L	P411782	
	SM 2320 B-2011	Total Alkalinity	31		mg CaCO3/L	P411654	
	SM 2540 C-2011	TDS	150		mg/L	P411766	
	SM 2540 D-2011	TSS	4	I	mg/L	P411667	
	SM 4500 F-C-2011	Fluoride	0.064	I	mg F/L	P411660	
2314352	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P411703	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P441164	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.064		mg N/L	P411591	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P411683	
	SM 5310 B-2011	Organic Carbon	32		mg C/L	P411677	

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: P411559

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P411562

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P411563

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: P411563

Component	Result	Code	Units
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
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 200.8 Rev. 5.4
Batch ID: P411839

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Chromium	0.40	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411840

Component	Result	Code	Units
Aluminum	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411934

Component	Result	Code	Units
Chromium	0.40	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411779

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411782

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411703

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411638

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P4411640

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411590

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411591

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411683

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

Reference Method: SM 2320 B-2011
Batch ID: P411654

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

Reference Method: SM 2540 C-2011
Batch ID: P411766

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P411667

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P411689

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P411660

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P411677

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: P411559

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.7		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P411562

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P411563

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	111		P	85 - 115
Magnesium	111		P	85 - 115
Potassium	108		P	85 - 115
Sodium	109		P	85 - 115
Strontium	107		P	85 - 115
Tin	105		P	85 - 115
Titanium	105		P	85 - 115
Vanadium	97.6		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411563

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Antimony	99.0		P	85 - 115
Arsenic	102		P	85 - 115
Barium	103		P	85 - 115
Beryllium	93.1		P	85 - 115
Boron	105		P	85 - 115
Cadmium	99.7		P	85 - 115
Cobalt	97.6		P	85 - 115
Copper	97.1		P	85 - 115
Lead	93.2		P	85 - 115
Manganese	98.4		P	85 - 115
Molybdenum	102		P	85 - 115
Nickel	99.0		P	85 - 115
Selenium	102		P	85 - 115
Silver	97.8		P	85 - 115
Thallium	98.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411839

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.0		P	85 - 115
Chromium	96.2		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411840

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411934

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chromium	95.7		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411779

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411782

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411703

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411638

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P4411640

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: P411590

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: P411591

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411683

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

Reference Method: SM 2320 B-2011
Batch ID: P411654

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.7		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P411660

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P411677

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P411563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2313904	Calcium	102		P	80 - 120
2313904	Iron	109	107	P/P	80 - 120
2313904	Magnesium	109	106	P/P	80 - 120
2313904	Potassium	106	105	P/P	80 - 120
2313904	Sodium	107	104	P/P	80 - 120
2313904	Strontium	105	103	P/P	80 - 120
2313904	Tin	102	103	P/P	80 - 120
2313904	Titanium	103	103	P/P	80 - 120
2313904	Vanadium	98.0	98.0	P/P	80 - 120
2313904	Zinc	100	101	P/P	80 - 120
2313907	Calcium	102		P	80 - 120
2313907	Iron	114		P	80 - 120
2313907	Magnesium	106		P	80 - 120
2313907	Potassium	104		P	80 - 120
2313907	Sodium	101		P	80 - 120
2313907	Strontium	104		P	80 - 120
2313907	Tin	102		P	80 - 120
2313907	Titanium	120		P	80 - 120
2313907	Vanadium	98.9		P	80 - 120
2313907	Zinc	100		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P411563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2313904	Antimony	98.4	96.2	P/P	80 - 120
2313904	Arsenic	99.2	97.6	P/P	80 - 120
2313904	Barium	101	98.8	P/P	80 - 120
2313904	Beryllium	94.2	92.0	P/P	80 - 120
2313904	Boron	104	104	P/P	80 - 120
2313904	Cadmium	99.5	96.0	P/P	80 - 120
2313904	Cobalt	96.1	93.4	P/P	80 - 120
2313904	Copper	96.0	93.0	P/P	80 - 120
2313904	Lead	92.1	91.0	P/P	80 - 120
2313904	Manganese	98.6	95.7	P/P	80 - 120
2313904	Molybdenum	106	97.2	P/P	80 - 120
2313904	Nickel	104	95.8	P/P	80 - 120
2313904	Selenium	97.0	97.7	P/P	80 - 120
2313904	Silver	97.9	96.6	P/P	80 - 120
2313904	Thallium	98.3	97.8	P/P	80 - 120
2313907	Antimony	95.9		P	80 - 120
2313907	Arsenic	99.6		P	80 - 120
2313907	Barium	101		P	80 - 120
2313907	Beryllium	94.2		P	80 - 120
2313907	Boron	108		P	80 - 120
2313907	Cadmium	98.4		P	80 - 120
2313907	Cobalt	95.8		P	80 - 120
2313907	Copper	95.0		P	80 - 120
2313907	Lead	93.2		P	80 - 120
2313907	Manganese	101		P	80 - 120
2313907	Molybdenum	112		P	80 - 120
2313907	Nickel	109		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2313907	Selenium	94.6		P	80 - 120
2313907	Silver	96.1		P	80 - 120
2313907	Thallium	98.3		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411839

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2313906	Aluminum	107	95.2	P/P	80 - 120
2313906	Chromium	95.1	86.1	P/P	80 - 120
2314221	Aluminum	99.3		P	80 - 120
2314221	Chromium	98.3		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411840

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314396	Aluminum	99.8	106	P/P	80 - 120
2314397	Aluminum	98.1		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411934

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314456	Chromium	94.5		P	80 - 120
2314614	Chromium	93.7	91.1	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411779

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314351	Chloride	98.7		P	90 - 110
2314429	Chloride	97.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411782

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314351	Sulfate	99.1		P	90 - 110
2314429	Sulfate	97.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411703

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314321	Ammonia-N	96.8	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411638

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2313858	Kjeldahl Nitrogen	98.5	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P4411640

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314204	Kjeldahl Nitrogen	113	105	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411590

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314254	NO2NO3-N	98.6	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411591

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314377	NO2NO3-N	97.5	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411683

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314298	Total-P	103	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P411660

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314296	Fluoride	98.0	98.0	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P411677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314331	Organic Carbon	97.6	98.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P411559

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314326	Color (true)	6.63	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P411562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314500	Turbidity	4.36	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P411563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2313904	Calcium	1.79	Spike	P	0 - 20
2313904	Iron	1.80	Spike	P	0 - 20
2313904	Magnesium	1.87	Spike	P	0 - 20
2313904	Potassium	1.49	Spike	P	0 - 20
2313904	Sodium	2.26	Spike	P	0 - 20
2313904	Strontium	1.35	Spike	P	0 - 20
2313904	Tin	1.05	Spike	P	0 - 20
2313904	Titanium	0.412	Spike	P	0 - 20
2313904	Vanadium	0.0728	Spike	P	0 - 20
2313904	Zinc	0.550	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2313904	Antimony	2.22	Spike	P	0 - 20
2313904	Arsenic	1.65	Spike	P	0 - 20
2313904	Barium	2.44	Spike	P	0 - 20
2313904	Beryllium	2.41	Spike	P	0 - 20
2313904	Boron	0.653	Spike	P	0 - 20
2313904	Cadmium	3.61	Spike	P	0 - 20
2313904	Cobalt	2.85	Spike	P	0 - 20
2313904	Copper	3.16	Spike	P	0 - 20
2313904	Lead	1.23	Spike	P	0 - 20
2313904	Manganese	2.60	Spike	P	0 - 20
2313904	Molybdenum	8.54	Spike	P	0 - 20
2313904	Nickel	8.42	Spike	P	0 - 20
2313904	Selenium	0.643	Spike	P	0 - 20
2313904	Silver	1.34	Spike	P	0 - 20
2313904	Thallium	0.539	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411839

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411839

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2313906	Aluminum	6.17	Spike	P	0 - 20
2313906	Chromium	9.68	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411840

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314396	Aluminum	4.14	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314614	Chromium	2.76	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411779

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314351	Chloride	0.00997	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411782

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314351	Sulfate	0.244	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411703

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314321	Ammonia-N	0.362	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411638

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2313858	Kjeldahl Nitrogen	1.58	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P4411640

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314204	Kjeldahl Nitrogen	7.56	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411590

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314254	NO2NO3-N	0.478	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411591

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314377	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411683

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314298	Total-P	2.65	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P411654

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314296	Total Alkalinity	1.54	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P411766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314429	TDS	1.10	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P411660

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314296	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P411677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314331	Organic Carbon	0.259	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A111138

Included Lab Sample IDs: 2314349, 2314351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A111140

Included Lab Sample IDs: 2314347, 2314349, 2314351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A111149

Included Lab Sample IDs: 2314348, 2314350, 2314352

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.0	P/P	90 - 110
NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A111171

Included Lab Sample IDs: 2314364, 2314365, 2314366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	103	P/P	90 - 110
Calcium	104	102	P/P	90 - 110
Iron	102	104	P/P	90 - 110
Iron	106	102	P/P	90 - 110
Magnesium	101	104	P/P	90 - 110
Magnesium	105	101	P/P	90 - 110
Potassium	106	106	P/P	90 - 110
Sodium	103	103	P/P	90 - 110
Strontium	97.8	97.4	P/P	90 - 110
Strontium	98.0	97.8	P/P	90 - 110
Tin	97.6	98.0	P/P	90 - 110
Tin	98.0	96.6	P/P	90 - 110
Titanium	97.4	97.6	P/P	90 - 110
Titanium	97.6	97.0	P/P	90 - 110
Vanadium	96.9	97.0	P/P	90 - 110
Vanadium	97.0	96.4	P/P	90 - 110
Zinc	97.8	97.9	P/P	90 - 110
Zinc	97.9	97.1	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A111184

Included Lab Sample IDs: 2314347, 2314349, 2314351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.0	97.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A111184

Included Lab Sample IDs: 2314347, 2314349, 2314351

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

Reference Method: SM 5310 B-2011

Run ID: A111201

Included Lab Sample IDs: 2314348, 2314350, 2314352

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.7	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A111208

Included Lab Sample IDs: 2314349, 2314351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.8	102	P/P	90 - 110
Sulfate	99.4	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A111210

Included Lab Sample IDs: 2314348, 2314350, 2314352

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.9	99.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A111215

Included Lab Sample IDs: 2314364, 2314365, 2314366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	94.8	97.1	P/P	90 - 110
Arsenic	101	102	P/P	90 - 110
Barium	98.0	99.9	P/P	90 - 110
Beryllium	93.3	94.1	P/P	90 - 110
Boron	103	104	P/P	90 - 110
Cadmium	98.1	100	P/P	90 - 110
Cobalt	95.3	98.1	P/P	90 - 110
Copper	95.6	98.5	P/P	90 - 110
Lead	91.4	92.9	P/P	90 - 110
Manganese	96.9	101	P/P	90 - 110
Molybdenum	98.9	100	P/P	90 - 110
Nickel	97.0	99.8	P/P	90 - 110
Selenium	99.9	100	P/P	90 - 110
Silver	96.2	96.6	P/P	90 - 110
Thallium	97.3	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111232

Included Lab Sample IDs: 2314348, 2314350

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.4	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111251

Included Lab Sample IDs: 2314352

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A111276

Included Lab Sample IDs: 2314364

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	96.3	98.2	P/P	90 - 110
Chromium	94.9	99.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A111292

Included Lab Sample IDs: 2314365, 2314366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.0	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111315

Included Lab Sample IDs: 2314348

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.6	96.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111324

Included Lab Sample IDs: 2314350, 2314352

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A111351

Included Lab Sample IDs: 2314365, 2314366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	96.6	95.3	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
DEP SOP: NU-094-1	Color (true)	99.7				6.63	
EPA 180.1 Rev. 2.0	Turbidity	97.0				4.36	
EPA 200.7 Rev. 4.4	Calcium	105	102	102			1.79
	Iron	111	109	107	114		1.80
	Magnesium	111	109	106	106		1.87
	Potassium	108	106	105	104		1.49
	Sodium	109	107	104	101		2.26
	Strontium	107	105	103	104		1.35
	Tin	105	102	103	102		1.05
	Titanium	105	103	103	120		0.412
	Vanadium	97.6	98.0	98.0	98.9		0.0728
	Zinc	103	100	101	100		0.550
EPA 200.8 Rev. 5.4	Aluminum	98.0	107	95.2	99.3		6.17
	Aluminum	98.4	98.1	99.8	106		4.14
	Antimony	99.0	98.4	96.2	95.9		2.22
	Arsenic	102	99.2	97.6	99.6		1.65
	Barium	103	101	98.8	101		2.44
	Beryllium	93.1	94.2	92.0	94.2		2.41
	Boron	105	104	104	108		0.653
	Cadmium	99.7	99.5	96.0	98.4		3.61
	Chromium	96.2	95.1	86.1	98.3		9.68
	Chromium	95.7	93.7	91.1	94.5		2.76
	Cobalt	97.6	96.1	93.4	95.8		2.85
	Copper	97.1	96.0	93.0	95.0		3.16
	Lead	93.2	92.1	91.0	93.2		1.23
	Manganese	98.4	98.6	95.7	101		2.60
	Molybdenum	102	106	97.2	112		8.54
	Nickel	99.0	104	95.8	109		8.42
	Selenium	102	97.0	97.7	94.6		0.643
	Silver	97.8	97.9	96.6	96.1		1.34
	Thallium	98.5	98.3	97.8	98.3		0.539
EPA 300.0 Rev. 2.1	Chloride	98.1	98.7	97.2		0.0099	
	Sulfate	99.0	99.1	97.9		0.244	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8	96.8	97.2			0.362
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	98.5	100			1.58
	Kjeldahl Nitrogen	102	113	105			7.56
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	98.6	98.2			0.478
	NO2NO3-N	99.0	97.5	97.5			0.0
EPA 365.1 Rev. 2.0	Total-P	101	103	101			2.65
SM 2320 B-2011	Total Alkalinity	99.7				1.54	
SM 2540 C-2011	TDS					1.10	
SM 4500 F-C-2011	Fluoride	98.4	98.0	98.0			0.0
SM 5310 B-2011	Organic Carbon	99.4	97.6	98.2			0.259

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2314349, 2314351
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2314347, 2314349, 2314351
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2314364, 2314365, 2314366
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2314364, 2314365, 2314366

Reference Method Descriptions

Method	Description	Associated Samples
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2314349, 2314351
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2314349, 2314351
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2314348, 2314350, 2314352
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2314348, 2314350, 2314352
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2314348, 2314350, 2314352
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2314348, 2314350, 2314352
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2314347, 2314349, 2314351
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2314366
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2314349, 2314351
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2314347, 2314349, 2314351
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2314347, 2314349, 2314351
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2314348, 2314350, 2314352

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	03/24/2022			03/24/2022 16:03	Anna M. Plaviak	2314349, 2314351
EPA 180.1 Rev. 2.0	03/24/2022			03/24/2022 14:20	Khloe J Berg	2314347
	03/24/2022			03/24/2022 14:22	Khloe J Berg	2314349
	03/24/2022			03/24/2022 14:25	Khloe J Berg	2314351
EPA 200.7 Rev. 4.4	03/24/2022	03/25/2022 10:15	Megan Whitefoot	03/26/2022 01:15	Josef B Mick	2314364
	03/24/2022	03/25/2022 10:15	Megan Whitefoot	03/26/2022 01:23	Josef B Mick	2314365
	03/24/2022	03/25/2022 10:15	Megan Whitefoot	03/26/2022 02:03	Josef B Mick	2314366
EPA 200.8 Rev. 5.4	03/24/2022	03/25/2022 10:15	Megan Whitefoot	03/29/2022 18:53	Alexander Thompson	2314364
	03/24/2022	03/25/2022 10:15	Megan Whitefoot	03/29/2022 19:02	Alexander Thompson	2314365
	03/24/2022	03/25/2022 10:15	Megan Whitefoot	03/29/2022 19:11	Alexander Thompson	2314366
	03/24/2022	04/01/2022 10:16	Megan Whitefoot	04/01/2022 17:57	Alexander Thompson	2314364
	03/24/2022	04/01/2022 10:40	Megan Whitefoot	04/04/2022 13:56	Alexander Thompson	2314365
	03/24/2022	04/01/2022 10:40	Megan Whitefoot	04/04/2022 14:02	Alexander Thompson	2314366
	03/24/2022	04/05/2022 10:26	Emily M Philpot	04/06/2022 13:27	Alexander Thompson	2314365
	03/24/2022	04/05/2022 10:26	Emily M Philpot	04/06/2022 13:34	Alexander Thompson	2314366
EPA 300.0 Rev. 2.1	03/24/2022			03/29/2022 17:54	Anna M. Plaviak	2314351
	03/24/2022			03/29/2022 18:55	Anna M. Plaviak	2314349
EPA 350.1 Rev. 2.0	03/24/2022			03/29/2022 11:43	Ping Hua	2314348
	03/24/2022			03/29/2022 11:44	Ping Hua	2314350
	03/24/2022			03/29/2022 11:45	Ping Hua	2314352
EPA 351.2 Rev. 2.0	03/24/2022	03/29/2022 08:58	Samantha L Bates	04/05/2022 13:10	Alexandra J Mattheus	2314348
	03/24/2022	03/29/2022 09:23	Samantha L Bates	04/05/2022 15:58	Alexandra J Mattheus	2314350
	03/24/2022	03/29/2022 09:23	Samantha L Bates	04/05/2022 16:00	Alexandra J Mattheus	2314352
EPA 353.2 Rev. 2.0	03/24/2022			03/25/2022 11:46	Beverly Y. Sanders	2314350
	03/24/2022			03/25/2022 11:47	Beverly Y. Sanders	2314352
	03/24/2022			03/25/2022 12:04	Beverly Y. Sanders	2314348
EPA 365.1 Rev. 2.0	03/24/2022	03/29/2022 16:02	Simonne.V. Calhoun	03/30/2022 13:29	Sarah A Nixon	2314348
	03/24/2022	03/29/2022 16:02	Simonne.V. Calhoun	03/30/2022 13:30	Sarah A Nixon	2314350
	03/24/2022	03/29/2022 16:02	Simonne.V. Calhoun	03/31/2022 12:51	James L Waggeberby	2314352
SM 2320 B-2011	03/24/2022			03/25/2022 21:33	Dale L. Simmons	2314347
	03/24/2022			03/25/2022 21:47	Dale L. Simmons	2314349
	03/24/2022			03/25/2022 22:00	Dale L. Simmons	2314351
SM 2340B	03/24/2022			03/26/2022 02:03	Josef B Mick	2314366
SM 2540 C-2011	03/24/2022			03/25/2022 16:20	Simonne.V. Calhoun	2314349, 2314351
SM 2540 D-2011	03/24/2022			03/25/2022 16:08	Yijie Li	2314347
	03/24/2022			03/25/2022 16:20	Simonne.V. Calhoun	2314349, 2314351
SM 4500 F-C-2011	03/24/2022			03/25/2022 21:33	Dale L. Simmons	2314347
	03/24/2022			03/25/2022 21:47	Dale L. Simmons	2314349
	03/24/2022			03/25/2022 22:00	Dale L. Simmons	2314351
SM 5310 B-2011	03/24/2022			03/26/2022 04:05	Khloe J Berg	2314348

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	03/24/2022			03/26/2022 04:20	Khloe J Berg	2314350
	03/24/2022			03/26/2022 04:39	Khloe J Berg	2314352