

Chemical Analysis Report

NW-DIST-2019-11-21-01

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

Event Description: **Esc/BW Bay Run**
Request ID: **RQ-2019-11-18-31**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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Certified by: Colin Wright, Program Administrator

Date Certified: 13-DEC-2019 11:11

A handwritten signature in black ink, reading "Colin Wright", is displayed on a light blue rectangular 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: TROUT BAYOU

Collection Date/Time: 11/20/2019 14:30

Field ID: G4NW0443

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137998	EPA 180.1 Rev. 2.0	Turbidity	2.0	A	NTU	P374654	
	EPA 300.0	Bromide	44		mg Br/L	P374982	
	SM 2320 B-97	Total Alkalinity	83		mg CaCO3/L	P374791	
	SM 2540 D-97	TSS	6	I	mg/L	P375132	
	SM 4500 F-C-97	Fluoride	0.74		mg F/L	P374794	
2138000	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P375088	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27	I	mg N/L	P374918	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.017		mg N/L	P374867	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P375067	
	SM 5310 B-00	Organic Carbon	2.5		mg C/L	P374889	
2138002	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P374597	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: TROUT BAYOU

Collection Date/Time: 11/20/2019 14:40

Field ID: G4NW0443_DUP

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137999	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P374654	
	EPA 300.0	Bromide	44		mg Br/L	P374982	
	SM 2320 B-97	Total Alkalinity	84		mg CaCO3/L	P374791	
	SM 2540 D-97	TSS	6	I	mg/L	P375132	
	SM 4500 F-C-97	Fluoride	0.75		mg F/L	P374794	
2138001	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P375088	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30	I	mg N/L	P374918	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.018		mg N/L	P374867	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P375067	
	SM 5310 B-00	Organic Carbon	2.5		mg C/L	P374889	
2138003	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P374597	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Blackwater Bay west of Escribano Point

Collection Date/Time: 11/20/2019 13:00

Field ID: G4NW0401

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137995	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P374654	
	EPA 300.0	Bromide	5.4		mg Br/L	P374982	
	SM 2320 B-97	Total Alkalinity	56		mg CaCO3/L	P374791	
	SM 2540 D-97	TSS	3	I	mg/L	P375132	
	SM 4500 F-C-97	Fluoride	0.47	I	mg F/L	P374794	
2137996	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P375088	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.17	I	mg N/L	P374918	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.072		mg N/L	P374867	
	EPA 365.1 Rev. 2.0	Total-P	0.007	I	mg P/L	P375067	
	SM 5310 B-00	Organic Carbon	2.3		mg C/L	P374889	
2137997	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P374597	
2138014	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P374611	
		Manganese	6.9	I	ug/L	P374611	
		Zinc	15	U	ug/L	P374611	
	EPA 200.8 Rev. 5.4	Aluminum	46	I	ug/L	P374611	
		Antimony	0.20	U	ug/L	P374611	
		Arsenic	0.53	I	ug/L	P374611	
		Cadmium	0.080	U	ug/L	P374611	
		Chromium	4.0	U	ug/L	P374611	
		Copper	1.6	U	ug/L	P374611	
		Lead	0.80	U	ug/L	P374611	
		Nickel	2.0	U	ug/L	P374611	
		Selenium	0.80	U	ug/L	P374611	
		Silver	0.040	U	ug/L	P374611	
		Thallium	0.40	U	ug/L	P374611	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Blackwater Bay west of Escribano Point

Collection Date/Time: 11/20/2019 13:10

Field ID: FB_11202019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2138004	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P374654	
	EPA 300.0	Bromide	0.013	U	mg Br/L	P374982	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P374988	
	SM 2540 D-97	TSS	2	U	mg/L	P375131	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P374993	
2138005	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P374932	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P375082	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P374702	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P375112	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P374888	
2138006	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P374596	
2138015	EPA 200.7 Rev. 4.4	Iron	30	U	ug/L	P374612	
		Manganese	1.0	U	ug/L	P374612	
		Zinc	5.0	U	ug/L	P374612	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P374612	
		Antimony	0.050	U	ug/L	P374612	
		Arsenic	0.050	U	ug/L	P374612	
		Cadmium	0.020	U	ug/L	P374612	
		Chromium	0.40	U	ug/L	P374612	
		Copper	0.40	U	ug/L	P374612	
		Lead	0.20	U	ug/L	P374612	
		Nickel	0.50	U	ug/L	P374612	
		Selenium	0.20	U	ug/L	P374612	
		Silver	0.010	U	ug/L	P374612	
		Thallium	0.10	U	ug/L	P374612	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374654

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P374611

Component	Result	Code	Units
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P374612

Component	Result	Code	Units
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P374611

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	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: P374612

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	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
Batch ID: P374982

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374932

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375088

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374918

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375082

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374702

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374867

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375067

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375112

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374596

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374597

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

Reference Method: SM 2320 B-97
Batch ID: P374791

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

Reference Method: SM 2320 B-97
Batch ID: P374988

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

Reference Method: SM 2540 D-97
Batch ID: P375131

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P375132

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P374794

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P374993

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P374888

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P374889

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P374611

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	105		P	85 - 115
Manganese	101		P	85 - 115
Zinc	99.2		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P374612

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	101		P	85 - 115
Manganese	105		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P374611

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	100		P	85 - 115
Cadmium	98.1		P	85 - 115
Chromium	91.9		P	85 - 115
Copper	99.2		P	85 - 115
Lead	103		P	85 - 115
Nickel	99.9		P	85 - 115
Selenium	89.4		P	85 - 115
Silver	104		P	85 - 115
Thallium	108		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P374612

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.0		P	85 - 115
Antimony	95.9		P	85 - 115
Arsenic	96.0		P	85 - 115
Cadmium	94.8		P	85 - 115
Chromium	94.7		P	85 - 115
Copper	97.8		P	85 - 115
Lead	95.0		P	85 - 115
Nickel	96.6		P	85 - 115
Selenium	88.9		P	85 - 115
Silver	99.7		P	85 - 115
Thallium	97.9		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P374982

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374932

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375088

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374918

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375082

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: P374702

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374867

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: P375067

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375112

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374596

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	95.4		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374597

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.5		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P374791

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P374988

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P374794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.4		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P374993

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P374888

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	106		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P374889

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	102		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P374611

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137699	Iron	101	102	P/P	70 - 130
2137699	Manganese	97.0	97.1	P/P	70 - 130
2137699	Zinc	104	104	P/P	70 - 130

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P374612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137204	Iron	99.9		P	80 - 120
2137204	Manganese	102		P	80 - 120
2137204	Zinc	106		P	80 - 120
2137595	Iron	102	99.2	P/P	80 - 120
2137595	Manganese	105	104	P/P	80 - 120
2137595	Zinc	105	104	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P374611

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137699	Aluminum	121	124	P/P	70 - 130
2137699	Antimony	102	102	P/P	70 - 130
2137699	Arsenic	109	110	P/P	70 - 130
2137699	Cadmium	90.6	91.8	P/P	70 - 130
2137699	Chromium	88.1	89.2	P/P	70 - 130
2137699	Copper	94.3	97.1	P/P	70 - 130
2137699	Lead	107	107	P/P	70 - 130
2137699	Nickel	92.5	94.6	P/P	70 - 130
2137699	Selenium	91.8	92.1	P/P	70 - 130
2137699	Silver	94.7	95.3	P/P	70 - 130
2137699	Thallium	111	112	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P374612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137204	Aluminum	96.5		P	80 - 120
2137204	Antimony	97.0		P	80 - 120
2137204	Arsenic	98.5		P	80 - 120
2137204	Cadmium	93.7		P	80 - 120
2137204	Chromium	93.2		P	80 - 120
2137204	Copper	97.7		P	80 - 120
2137204	Lead	97.5		P	80 - 120
2137204	Nickel	96.9		P	80 - 120
2137204	Selenium	86.4		P	80 - 120
2137204	Silver	98.2		P	80 - 120
2137204	Thallium	106		P	80 - 120
2137595	Aluminum	96.8	97.9	P/P	80 - 120
2137595	Antimony	96.0	97.8	P/P	80 - 120
2137595	Arsenic	96.4	97.7	P/P	80 - 120
2137595	Cadmium	93.5	95.0	P/P	80 - 120
2137595	Chromium	91.5	93.8	P/P	80 - 120
2137595	Copper	98.7	99.9	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P374612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137595	Lead	95.5	96.5	P/P	80 - 120
2137595	Nickel	96.2	98.7	P/P	80 - 120
2137595	Selenium	86.7	88.2	P/P	80 - 120
2137595	Silver	97.1	99.7	P/P	80 - 120
2137595	Thallium	99.1	101	P/P	80 - 120

Reference Method: EPA 300.0
Batch ID: P374982

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137966	Bromide	97.1	98.8	P/P	90 - 110
2138124	Bromide	98.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374932

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137970	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375088

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2138122	Ammonia-N	103	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374918

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2138094	Kjeldahl Nitrogen	97.9	96.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137988	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374867

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137712	NO2NO3-N	99.0	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375067

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137712	Total-P	103	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375112

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137969	Total-P	106	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374596

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137929	O-Phosphate-P	94.9	95.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374597

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137997	O-Phosphate-P	95.5	95.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P374794

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137447	Fluoride	94.6	94.6	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P374888

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137969	Organic Carbon	106	105	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P374889

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137468	Organic Carbon	102	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374654

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137998	Turbidity	5.63	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P374611

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137699	Iron	0.849	Spike	P	0 - 20
2137699	Manganese	0.129	Spike	P	0 - 20
2137699	Zinc	0.285	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P374612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137595	Iron	2.75	Spike	P	0 - 20
2137595	Manganese	1.03	Spike	P	0 - 20
2137595	Zinc	1.17	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P374611

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137699	Aluminum	2.75	Spike	P	0 - 20
2137699	Antimony	0.439	Spike	P	0 - 20
2137699	Arsenic	1.36	Spike	P	0 - 20
2137699	Cadmium	1.39	Spike	P	0 - 20
2137699	Chromium	1.28	Spike	P	0 - 20
2137699	Copper	3.02	Spike	P	0 - 20
2137699	Lead	0.771	Spike	P	0 - 20
2137699	Nickel	2.22	Spike	P	0 - 20
2137699	Selenium	0.301	Spike	P	0 - 20
2137699	Silver	0.670	Spike	P	0 - 20
2137699	Thallium	0.715	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P374612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137595	Aluminum	1.10	Spike	P	0 - 20
2137595	Antimony	1.89	Spike	P	0 - 20
2137595	Arsenic	1.37	Spike	P	0 - 20
2137595	Cadmium	1.63	Spike	P	0 - 20
2137595	Chromium	2.38	Spike	P	0 - 20
2137595	Copper	1.26	Spike	P	0 - 20
2137595	Lead	1.06	Spike	P	0 - 20
2137595	Nickel	2.59	Spike	P	0 - 20
2137595	Selenium	1.71	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P374612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137595	Silver	2.71	Spike	P	0 - 20
2137595	Thallium	1.54	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P374982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137966	Bromide	1.62	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374932

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137970	Ammonia-N	0.0217	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138122	Ammonia-N	1.30	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374918

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138094	Kjeldahl Nitrogen	1.68	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138024	Kjeldahl Nitrogen	6.48	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137988	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374867

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137712	NO2NO3-N	0.557	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137712	Total-P	1.17	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375112

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137969	Total-P	5.09	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374596

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137929	O-Phosphate-P	0.421	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137997	O-Phosphate-P	0.418	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P374791

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137447	Total Alkalinity	0.496	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P374988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138257	Total Alkalinity	0.185	Sample	P	0 - 2.8

Reference Method: SM 4500 F-C-97
Batch ID: P374794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137447	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P374993

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138257	Fluoride	0.520	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P374888

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137969	Organic Carbon	0.632	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P374889

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137468	Organic Carbon	0.478	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: A95880

Included Lab Sample IDs: 2137997, 2138002, 2138003, 2138006

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	99.4	98.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A95900

Included Lab Sample IDs: 2137995, 2137998, 2137999, 2138004

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105
Turbidity	101	100	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95909

Included Lab Sample IDs: 2138005

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A95921

Included Lab Sample IDs: 2138015

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	99.8	101	P/P	95 - 105
Manganese	105	106	P/P	95 - 105
Zinc	102	105	P/P	95 - 105

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A95922

Included Lab Sample IDs: 2138014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	101	102	P/P	90 - 110
Manganese	104	105	P/P	90 - 110
Zinc	100	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A95947

Included Lab Sample IDs: 2137995, 2137998, 2137999

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

Reference Method: SM 4500 F-C-97

Run ID: A95947

Included Lab Sample IDs: 2137995, 2137998, 2137999

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95966

Included Lab Sample IDs: 2137996, 2138000, 2138001

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

Reference Method: SM 5310 B-00

Run ID: A95973

Included Lab Sample IDs: 2137996, 2138000, 2138001, 2138005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	99.8	P/P	90 - 110
Organic Carbon	105	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95997

Included Lab Sample IDs: 2138005

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95998

Included Lab Sample IDs: 2138015

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.9	99.1	P/P	90 - 110
Antimony	95.8	97.4	P/P	90 - 110
Arsenic	99.8	100	P/P	90 - 110
Cadmium	98.5	99.5	P/P	90 - 110
Chromium	100	101	P/P	90 - 110
Copper	102	104	P/P	90 - 110
Lead	98.5	98.7	P/P	90 - 110
Nickel	101	102	P/P	90 - 110
Selenium	93.9	95.9	P/P	90 - 110
Silver	102	103	P/P	90 - 110
Thallium	95.8	94.9	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A96019

Included Lab Sample IDs: 2137995, 2137998, 2137999, 2138004

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	103	103	P/P	90 - 110
Bromide	99.9	103	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A96025

Included Lab Sample IDs: 2138004

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A96025

Included Lab Sample IDs: 2138004

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96049

Included Lab Sample IDs: 2137996, 2138000, 2138001

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.3	98.0	P/P	90 - 110
Kjeldahl Nitrogen	98.0	108	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96062

Included Lab Sample IDs: 2137996, 2138000, 2138001

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96067

Included Lab Sample IDs: 2138014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	93.4	93.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96092

Included Lab Sample IDs: 2137996, 2138000, 2138001

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96110

Included Lab Sample IDs: 2138005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96111

Included Lab Sample IDs: 2138005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96204

Included Lab Sample IDs: 2138014

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96204

Included Lab Sample IDs: 2138014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	100	101	P/P	90 - 110
Arsenic	106	107	P/P	90 - 110
Cadmium	101	100	P/P	90 - 110
Lead	104	104	P/P	90 - 110
Nickel	106	105	P/P	90 - 110
Silver	109	108	P/P	90 - 110
Thallium	100	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96240

Included Lab Sample IDs: 2138014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	92.9	94.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96267

Included Lab Sample IDs: 2138014

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

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					5.63	
EPA 200.7 Rev. 4.4	Iron	105	101	102			0.849
	Iron	101	99.9	102	99.2		2.75
	Manganese	101	97.0	97.1			0.129
	Manganese	105	102	105	104		1.03
	Zinc	99.2	104	104			0.285
	Zinc	104	106	105	104		1.17
EPA 200.8 Rev. 5.4	Aluminum	101	121	124			2.75
	Aluminum	95.0	96.5	96.8	97.9		1.10
	Antimony	101	102	102			0.439
	Antimony	95.9	97.0	96.0	97.8		1.89
	Arsenic	100	109	110			1.36
	Arsenic	96.0	98.5	96.4	97.7		1.37
	Cadmium	98.1	90.6	91.8			1.39
	Cadmium	94.8	93.7	93.5	95.0		1.63
	Chromium	91.9	88.1	89.2			1.28
	Chromium	94.7	93.2	91.5	93.8		2.38
	Copper	99.2	94.3	97.1			3.02
	Copper	97.8	97.7	98.7	99.9		1.26
	Lead	103	107	107			0.771
	Lead	95.0	97.5	95.5	96.5		1.06
	Nickel	99.9	92.5	94.6			2.22
	Nickel	96.6	96.9	96.2	98.7		2.59
	Selenium	89.4	91.8	92.1			0.301
	Selenium	88.9	86.4	86.7	88.2		1.71
	Silver	104	94.7	95.3			0.670
	Silver	99.7	98.2	97.1	99.7		2.71
	Thallium	108	111	112			0.715
	Thallium	97.9	106	99.1	101		1.54
EPA 300.0	Bromide	99.4	97.1	98.8	98.5		1.62
EPA 350.1 Rev. 2.0	Ammonia-N	102	101	101			0.0217
	Ammonia-N	99.9	103	105			1.30
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	97.9	96.1			1.68
	Kjeldahl Nitrogen	102					6.48
EPA 353.2 Rev. 2.0	NO2NO3-N	101	100	100			0.0
	NO2NO3-N	100	99.0	100			0.557
EPA 365.1 Rev. 2.0	Total-P	101	103	102			1.17
	Total-P	104	106	101			5.09
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	95.4	94.9	95.3			0.421
	O-Phosphate-P	98.5	95.5	95.9			0.418
SM 2320 B-97	Total Alkalinity	102				0.496	
	Total Alkalinity	103				0.185	
SM 4500 F-C-97	Fluoride	99.4	94.6	94.6			0.0
	Fluoride	98.2					0.520
SM 5310 B-00	Organic Carbon	106	106	105			0.632
	Organic Carbon	102	102	102			0.478

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2137995, 2137998, 2137999, 2138004

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2138014, 2138015
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2138014, 2138015
EPA 300.0 / E31780	Bromide in aqueous matrices	2137995, 2137998, 2137999, 2138004
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2137996, 2138000, 2138001, 2138005
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2137996, 2138000, 2138001, 2138005
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2137996, 2138000, 2138001, 2138005
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2137996, 2138000, 2138001, 2138005
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2137997, 2138002, 2138003, 2138006
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2137995, 2137998, 2137999, 2138004
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2137995, 2137998, 2137999, 2138004
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2137995, 2137998, 2137999, 2138004
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2137996, 2138000, 2138001, 2138005

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	11/21/2019			11/21/2019 17:41	Samantha Davila	2137995, 2137998, 2137999, 2138004
EPA 200.7 Rev. 4.4	11/21/2019	11/21/2019 15:55	Elliott D. Healy	11/22/2019 12:33	Betina Topolski	2138015
	11/21/2019	11/21/2019 15:55	Elliott D. Healy	11/22/2019 15:17	Vijayalakshmi Reddy	2138014
EPA 200.8 Rev. 5.4	11/21/2019	11/21/2019 15:55	Elliott D. Healy	11/26/2019 21:22	Robert K Palmer	2138015
	11/21/2019	11/21/2019 15:55	Elliott D. Healy	12/03/2019 01:40	Robert K Palmer	2138014
	11/21/2019	11/21/2019 15:55	Elliott D. Healy	12/10/2019 00:34	Alexander Thompson	2138014
	11/21/2019	11/21/2019 15:55	Elliott D. Healy	12/11/2019 03:33	Alexander Thompson	2138014
	11/21/2019	11/21/2019 15:55	Elliott D. Healy	12/12/2019 06:05	Martin Acosta	2138014
EPA 300.0	11/21/2019			11/26/2019 01:02	Julia Storbeck	2137995
	11/21/2019			11/26/2019 01:54	Julia Storbeck	2137998
	11/21/2019			11/26/2019 02:11	Julia Storbeck	2137999
	11/21/2019			11/26/2019 02:28	Julia Storbeck	2138004
EPA 350.1 Rev. 2.0	11/21/2019			11/26/2019 10:32	Ping Hua	2138005
	11/21/2019			11/27/2019 09:40	Ping Hua	2137996
	11/21/2019			11/27/2019 09:42	Ping Hua	2138000
	11/21/2019			11/27/2019 09:43	Ping Hua	2138001
EPA 351.2 Rev. 2.0	11/21/2019	11/27/2019 11:30	Sima Feizi	12/02/2019 13:10	Jhamieka S. Greenwood	2137996
	11/21/2019	11/27/2019 11:30	Sima Feizi	12/02/2019 13:15	Jhamieka S. Greenwood	2138000
	11/21/2019	11/27/2019 11:30	Sima Feizi	12/02/2019 13:16	Jhamieka S. Greenwood	2138001
	11/21/2019	12/03/2019 12:50	Sima Feizi	12/04/2019 13:37	Jhamieka S. Greenwood	2138005
EPA 353.2 Rev. 2.0	11/21/2019			11/22/2019 13:19	Beverly Y. Sanders	2138005
	11/21/2019			11/26/2019 10:43	Beverly Y. Sanders	2137996
	11/21/2019			11/26/2019 10:44	Beverly Y. Sanders	2138000
	11/21/2019			11/26/2019 10:45	Beverly Y. Sanders	2138001
EPA 365.1 Rev. 2.0	11/21/2019	12/02/2019 14:16	Yen Ta	12/03/2019 16:34	Benjamin T. Nordmann	2137996
	11/21/2019	12/02/2019 14:16	Yen Ta	12/03/2019 16:35	Benjamin T. Nordmann	2138000
	11/21/2019	12/02/2019 14:16	Yen Ta	12/03/2019 16:36	Benjamin T. Nordmann	2138001
	11/21/2019	12/03/2019 13:30	Lipi Saha	12/04/2019 14:05	Benjamin T. Nordmann	2138005
EPA 365.1 Rev. 2.0 dissolved	11/21/2019			11/21/2019 12:55	Lipi Saha	2137997
	11/21/2019			11/21/2019 13:14	Lipi Saha	2138002
	11/21/2019			11/21/2019 13:15	Lipi Saha	2138003
	11/21/2019			11/21/2019 13:16	Lipi Saha	2138006
SM 2320 B-97	11/21/2019			11/25/2019 14:57	Dale L. Simmons	2137995
	11/21/2019			11/25/2019 15:08	Dale L. Simmons	2137998
	11/21/2019			11/25/2019 15:19	Dale L. Simmons	2137999
	11/21/2019			11/27/2019 08:07	Dale L. Simmons	2138004
SM 2540 D-97	11/21/2019			11/25/2019 15:56	Yijie Li	2137995, 2137998, 2137999, 2138004
SM 4500 F-C-97	11/21/2019			11/25/2019 10:47	Dale L. Simmons	2137995
	11/21/2019			11/25/2019 10:51	Dale L. Simmons	2137998
	11/21/2019			11/25/2019 10:55	Dale L. Simmons	2137999

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-97	11/21/2019			11/27/2019 08:07	Dale L. Simmons	2138004
SM 5310 B-00	11/21/2019			11/26/2019 04:37	Lauren Lees	2138005
	11/21/2019			11/26/2019 13:08	Lauren Lees	2137996
	11/21/2019			11/26/2019 13:23	Lauren Lees	2138000
	11/21/2019			11/26/2019 13:38	Lauren Lees	2138001