

Chemical Analysis Report

NW-DIST-2018-10-02-01

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

Event Description: **Escambia River Run**
Request ID: **RQ-2018-09-24-11**
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: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 24-OCT-2018 11:05

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 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: ESCAMBIA RIVER UPSTREAM OF MITCHELL CREEK

Collection Date/Time: 10/01/2018 10:45

Field ID: G4NW0404

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2029930	EPA 180.1 Rev. 2.0	Turbidity	23	A	NTU	P352655	
	EPA 300.0 Rev. 2.1	Chloride	7.4		mg Cl/L	P352817	
		Sulfate	5.8		mg SO4/L	P352819	
		Color (true)	34	A	PCU	P352639	
	SM 2320 B-97	Total Alkalinity	26		mg CaCO3/L	P352884	
	SM 2540 C-97	TDS	73		mg/L	P352991	
	SM 2540 D-97	TSS	30		mg/L	P352924	
	SM 4500 F-C-97	Fluoride	0.043	I	mg F/L	P352887	
2029932	EPA 350.1 Rev. 2.0	Ammonia-N	0.047		mg N/L	P353032	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P352748	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P352774	
	EPA 365.1 Rev. 2.0	Total-P	0.060		mg P/L	P352675	
	SM 5310 B-00	Organic Carbon	6.2		mg C/L	P352972	
2029934	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P352616	
2029954	EPA 200.7 Rev. 4.4	Calcium	9.67		mg/L	P352707	
		Iron	2.39E+03		ug/L	P352707	
		Magnesium	1.35		mg/L	P352707	
		Potassium	1.4		mg/L	P352707	
		Sodium	7.4		mg/L	P352707	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P352707	
		Arsenic	1.16		ug/L	P352707	
		Cadmium	0.020	U	ug/L	P352707	
		Chromium	1.8		ug/L	P352707	
		Copper	0.63	I	ug/L	P352707	
		Lead	0.69		ug/L	P352707	
		Nickel	1.10		ug/L	P352707	
		Silver	0.010	U	ug/L	P352919	

Ref. Method and Comment:

SM 2540 D-97: 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 on 10/08/2018.

Sample Location: ESCAMBIA RIVER DOWNSTREAM OF COTTON LAKE **Collection Date/Time: 10/01/2018 11:30**

Field ID: G4NW0403

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2029931	EPA 180.1 Rev. 2.0	Turbidity	21		NTU	P352655	
	EPA 300.0 Rev. 2.1	Chloride	7.5		mg Cl/L	P352817	
		Sulfate	5.8		mg SO4/L	P352819	
		Color (true)	35		PCU	P352639	
	SM 2320 B-97	Total Alkalinity	26		mg CaCO3/L	P352884	
	SM 2540 C-97	TDS	79		mg/L	P352991	
	SM 2540 D-97	TSS	27		mg/L	P352924	
	SM 4500 F-C-97	Fluoride	0.041	I	mg F/L	P352887	
2029933	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P353032	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38		mg N/L	P352748	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P352774	
	EPA 365.1 Rev. 2.0	Total-P	0.052		mg P/L	P352675	
	SM 5310 B-00	Organic Carbon	6.0		mg C/L	P352972	
2029935	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P352616	
2029955	EPA 200.7 Rev. 4.4	Calcium	9.92		mg/L	P352707	
		Iron	2.01E+03		ug/L	P352707	
		Magnesium	1.33		mg/L	P352707	
		Potassium	1.3		mg/L	P352707	
		Sodium	7.3		mg/L	P352707	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P352707	
		Arsenic	1.03		ug/L	P352707	
		Cadmium	0.020	U	ug/L	P352707	
		Chromium	1.4	I	ug/L	P352707	
		Copper	0.55	I	ug/L	P352707	
		Lead	0.57		ug/L	P352707	
		Nickel	0.99		ug/L	P352707	
		Silver	0.010	U	ug/L	P352919	

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: ESCAMBIA RIVER UPSTREAM GULF POWER DISCHARGE **Collection Date/Time: 10/01/2018 12:40**

Field ID: G4NW0264

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2029936	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P352655	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P352817	
		Sulfate	7.3		mg SO4/L	P352819	
	SM 2120 B	Color (true)	85		PCU	P352635	
	SM 2320 B-97	Total Alkalinity	22		mg CaCO3/L	P352884	
	SM 2540 C-97	TDS	83		mg/L	P352991	
	SM 2540 D-97	TSS	4	I	mg/L	P352924	
	SM 4500 F-C-97	Fluoride	0.036	I	mg F/L	P352887	
2029938	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P353032	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36		mg N/L	P352748	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P352775	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P352675	
	SM 5310 B-00	Organic Carbon	6.3		mg C/L	P352972	
2029940	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P352616	

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: ESCAMBIA RIVER UPSTREAM GULF POWER DISCHARGE **Collection Date/Time: 10/01/2018 12:50**

Field ID: G4NW0264_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2029937	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P352656	
	EPA 300.0 Rev. 2.1	Chloride	10	A	mg Cl/L	P353004	
		Sulfate	7.1	A	mg SO4/L	P353006	
	SM 2120 B	Color (true)	81		PCU	P352635	
	SM 2320 B-97	Total Alkalinity	22		mg CaCO3/L	P352884	
	SM 2540 C-97	TDS	81		mg/L	P352991	
	SM 2540 D-97	TSS	4	I	mg/L	P352924	
	SM 4500 F-C-97	Fluoride	0.035	I	mg F/L	P352887	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P353032	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36		mg N/L	P352748	
2029939	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P352775	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P352675	
	SM 5310 B-00	Organic Carbon	6.3		mg C/L	P352972	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.012		mg P/L	P352616	
	dissolved						
2029941	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.012		mg P/L	P352616	

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: ESCAMBIA RIVER UPSTREAM GULF POWER DISCHARGE **Collection Date/Time: 10/01/2018 13:00**

Field ID: field blank_10012018

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2029942	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P352656	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P353004	
		Sulfate	0.20	U	mg SO4/L	P353006	
	SM 2120 B	Color (true)	2.5	U	PCU	P352636	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P352884	
	SM 2540 C-97	TDS	15	U	mg/L	P352989	
	SM 2540 D-97	TSS	2	U	mg/L	P352922	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P352887	
2029943	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P353032	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P352748	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P352775	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P352675	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P352972	
2029944	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P352616	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P352655

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P352656

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P352707

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
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352707

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352919

Component	Result	Code	Units
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352817

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352819

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353004

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353004

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353006

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353032

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352748

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P352774

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P352775

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P352675

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P352616

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

Reference Method: SM 2120 B
Batch ID: P352635

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P352636

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P352639

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P352884

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

Reference Method: SM 2540 C-97
Batch ID: P352989

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P352991

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P352922

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P352924

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P352887

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P352972

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: P352707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	106		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	111		P	85 - 115
Sodium	105		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	102		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	104		P	85 - 115
Copper	102		P	85 - 115
Lead	92.4		P	85 - 115
Nickel	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352919

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Silver	95.1		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352817

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352819

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353004

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353006

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353032

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353032

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352748

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P352774

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: P352775

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: P352675

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P352616

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

Reference Method: SM 2120 B
Batch ID: P352635

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.0		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P352636

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.3		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P352639

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.1		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P352884

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P352887

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P352972

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P352707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2029993	Calcium	103		P	80 - 120
2029993	Iron	103		P	80 - 120
2029993	Magnesium	108		P	80 - 120
2029993	Potassium	105		P	80 - 120
2029993	Sodium	104		P	80 - 120
2029993	Zinc	100		P	80 - 120
2030303	Calcium	101		P	80 - 120
2030303	Iron	101	103	P/P	80 - 120
2030303	Magnesium	99.8		P	80 - 120
2030303	Potassium	104	103	P/P	80 - 120
2030303	Sodium	102		P	80 - 120
2030303	Zinc	99.1	97.3	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2029993	Arsenic	101		P	80 - 120
2029993	Cadmium	100		P	80 - 120
2029993	Chromium	103		P	80 - 120
2029993	Copper	102		P	80 - 120
2029993	Lead	91.8		P	80 - 120
2029993	Nickel	101		P	80 - 120
2030303	Arsenic	102	102	P/P	80 - 120
2030303	Cadmium	99.6	101	P/P	80 - 120
2030303	Chromium	101	103	P/P	80 - 120
2030303	Copper	98.5	98.6	P/P	80 - 120
2030303	Lead	92.0	92.6	P/P	80 - 120
2030303	Nickel	99.8	99.2	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027557	Silver	93.6	94.7	P/P	80 - 120
2029954	Silver	95.0		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352817

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2029514	Chloride	98.0		P	90 - 110
2029713	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352819

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2029514	Sulfate	97.2		P	90 - 110
2029713	Sulfate	98.1		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P353004

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2029937	Chloride	96.8		P	90 - 110
2030113	Chloride	96.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P353006

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2029937	Sulfate	93.9		P	90 - 110
2030113	Sulfate	96.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P353032

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2029932	Ammonia-N	96.5	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P352748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2029933	Kjeldahl Nitrogen	107	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P352774

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2029586	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P352775

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2029938	NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P352675

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2029938	Total-P	105	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P352616

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2029934	O-Phosphate-P	99.0	99.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P352887

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2030231	Fluoride	99.0	99.0	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P352972

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2029790	Organic Carbon	97.9	97.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P352655

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2029930	Turbidity	5.31	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P352656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2029973	Turbidity	9.01	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P352707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2030303	Calcium	0.125	Spike	P	0 - 20
2030303	Iron	1.17	Spike	P	0 - 20
2030303	Magnesium	1.71	Spike	P	0 - 20
2030303	Potassium	0.598	Spike	P	0 - 20
2030303	Sodium	0.160	Spike	P	0 - 20
2030303	Zinc	1.77	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2030303	Arsenic	0.0343	Spike	P	0 - 20
2030303	Cadmium	0.984	Spike	P	0 - 20
2030303	Chromium	2.03	Spike	P	0 - 20
2030303	Copper	0.0538	Spike	P	0 - 20
2030303	Lead	0.645	Spike	P	0 - 20
2030303	Nickel	0.598	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027557	Silver	1.19	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352817

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2029514	Chloride	1.17	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352819

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2029514	Sulfate	1.71	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2029937	Chloride	2.76	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353006

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2029937	Sulfate	2.93	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353032

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2029932	Ammonia-N	2.38	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2029933	Kjeldahl Nitrogen	0.499	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P352774

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2029586	NO2NO3-N	0.309	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P352775

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2029938	NO2NO3-N	0.734	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P352675

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2029938	Total-P	5.48	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P352616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2029934	O-Phosphate-P	0.0881	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P352635

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2029930	Color (true)	8.57	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P352636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2030002	Color (true)	0.567	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P352639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2029930	Color (true)	1.04	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P352884

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2030231	Total Alkalinity	0.642	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P352989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2029484	TDS	3.66	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P352991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2030113	TDS	7.63	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P352887

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2030231	Fluoride	0.0	Spike	P	0 - 3.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P352972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2029790	Organic Carbon	0.243	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A86839

Included Lab Sample IDs: 2029930, 2029931, 2029936, 2029937, 2029942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	99.6	P/P	90 - 110
Chloride	102	102	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110
Sulfate	99.6	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A86850

Included Lab Sample IDs: 2029934, 2029935, 2029940, 2029941, 2029944

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.2	P/P	90 - 110
O-Phosphate-P	99.2	99.0	P/P	90 - 110
O-Phosphate-P	99.9	101	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A86859

Included Lab Sample IDs: 2029930, 2029931, 2029936, 2029937, 2029942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	99.6	P/P	90 - 115
Color (true)	98.7	99.8	P/P	90 - 115
Color (true)	99.8	99.7	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A86861

Included Lab Sample IDs: 2029930, 2029931, 2029936, 2029937, 2029942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105
Turbidity	102	102	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86898

Included Lab Sample IDs: 2029932, 2029933

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86915

Included Lab Sample IDs: 2029932, 2029933, 2029938, 2029939, 2029943

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A86916

Included Lab Sample IDs: 2029954, 2029955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	98.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A86916

Included Lab Sample IDs: 2029954, 2029955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	98.0	96.8	P/P	90 - 110
Magnesium	98.6	97.0	P/P	90 - 110
Potassium	100	100	P/P	90 - 110
Sodium	101	102	P/P	90 - 110
Zinc	96.9	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86920

Included Lab Sample IDs: 2029938, 2029939, 2029943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86930

Included Lab Sample IDs: 2029932, 2029933, 2029938, 2029939, 2029943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	106	P/P	90 - 110
Kjeldahl Nitrogen	101	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A86958

Included Lab Sample IDs: 2029954, 2029955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	101	100	P/P	90 - 110
Cadmium	99.0	98.2	P/P	90 - 110
Chromium	105	104	P/P	90 - 110
Copper	102	101	P/P	90 - 110
Lead	96.6	96.3	P/P	90 - 110
Nickel	102	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A86959

Included Lab Sample IDs: 2029930, 2029931, 2029936, 2029937, 2029942

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

Reference Method: SM 4500 F-C-97

Run ID: A86959

Included Lab Sample IDs: 2029930, 2029931, 2029936, 2029937, 2029942

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A86990

Included Lab Sample IDs: 2029932, 2029933, 2029938, 2029939, 2029943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	94.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A87002

Included Lab Sample IDs: 2029954, 2029955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	94.3	92.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A87014

Included Lab Sample IDs: 2029932, 2029933, 2029938, 2029939, 2029943

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

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					5.31	
	Turbidity					9.01	
EPA 200.7 Rev. 4.4	Calcium	105	103	101			0.125
	Iron	106	103	101	103		1.17
	Magnesium	103	108	99.8			1.71
	Potassium	111	105	104	103		0.598
	Sodium	105	104	102			0.160
	Zinc	100	100	99.1	97.3		1.77
EPA 200.8 Rev. 5.4	Arsenic	102	101	102	102		0.0343
	Cadmium	101	100	99.6	101		0.984
	Chromium	104	103	101	103		2.03
	Copper	102	102	98.5	98.6		0.0538
	Lead	92.4	91.8	92.0	92.6		0.645
	Nickel	102	101	99.8	99.2		0.598
	Silver	95.1	93.6	94.7	95.0		1.19
EPA 300.0 Rev. 2.1	Chloride	99.3	98.0	100		1.17	
	Chloride	98.8	96.8	96.0		2.76	
	Sulfate	97.6	97.2	98.1		1.71	
	Sulfate	97.6	93.9	96.7		2.93	
EPA 350.1 Rev. 2.0	Ammonia-N	97.6	96.5	101			2.38
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	107	107			0.499
EPA 353.2 Rev. 2.0	NO2NO3-N	101	100	100			0.309
	NO2NO3-N	100	99.5				0.734
EPA 365.1 Rev. 2.0	Total-P	99.4	105	99.1			5.48
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.8	99.1	99.0			0.0881
SM 2120 B	Color (true)	98.0				8.57	
	Color (true)	99.3				0.567	
	Color (true)	99.1				1.04	
SM 2320 B-97	Total Alkalinity	103				0.642	
SM 2540 C-97	TDS					3.66	
	TDS					7.63	
SM 4500 F-C-97	Fluoride	99.2	99.0	99.0			0.0
SM 5310 B-00	Organic Carbon	103	97.9	97.7			0.243

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2029930, 2029931, 2029936, 2029937, 2029942
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2029954, 2029955
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2029954, 2029955
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2029930, 2029931, 2029936, 2029937, 2029942
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2029930, 2029931, 2029936, 2029937, 2029942
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2029932, 2029933, 2029938, 2029939, 2029943
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2029932, 2029933, 2029938, 2029939, 2029943
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2029932, 2029933, 2029938, 2029939, 2029943
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2029932, 2029933, 2029938, 2029939, 2029943

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 dissolved / E31780 SM 2120 B / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L True Color measured at 450 nm	2029934, 2029935, 2029940, 2029941, 2029944 2029930, 2029931, 2029936, 2029937, 2029942
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2029930, 2029931, 2029936, 2029937, 2029942
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2029930, 2029931, 2029936, 2029937, 2029942
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2029930, 2029931, 2029936, 2029937, 2029942
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2029930, 2029931, 2029936, 2029937, 2029942
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2029932, 2029933, 2029938, 2029939, 2029943

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	10/02/2018			10/02/2018 16:34	Megan Treadwell	2029930, 2029931, 2029936, 2029937, 2029942
EPA 200.7 Rev. 4.4	10/02/2018	10/03/2018 18:00	Elliott D. Healy	10/04/2018 13:21	Betina Topolski	2029954
	10/02/2018	10/03/2018 18:00	Elliott D. Healy	10/04/2018 13:25	Betina Topolski	2029955
EPA 200.8 Rev. 5.4	10/02/2018	10/03/2018 18:00	Elliott D. Healy	10/07/2018 03:17	Robert K Palmer	2029954
	10/02/2018	10/03/2018 18:00	Elliott D. Healy	10/07/2018 03:27	Robert K Palmer	2029955
	10/02/2018	10/08/2018 11:57	Devin Thornton	10/08/2018 23:33	Robert K Palmer	2029954
	10/02/2018	10/08/2018 11:57	Devin Thornton	10/08/2018 23:45	Robert K Palmer	2029955
EPA 300.0 Rev. 2.1	10/02/2018			10/05/2018 04:04	Lipi Saha	2029930
	10/02/2018			10/05/2018 04:17	Lipi Saha	2029931
	10/02/2018			10/05/2018 04:29	Lipi Saha	2029936
	10/02/2018			10/05/2018 17:00	Lipi Saha	2029937
	10/02/2018			10/05/2018 17:48	Lipi Saha	2029942
EPA 350.1 Rev. 2.0	10/02/2018			10/04/2018 12:35	Ping Hua	2029932
	10/02/2018			10/04/2018 12:45	Ping Hua	2029938
	10/02/2018			10/04/2018 12:47	Ping Hua	2029939
	10/02/2018			10/04/2018 12:53	Ping Hua	2029933
	10/02/2018			10/04/2018 13:03	Ping Hua	2029943
EPA 351.2 Rev. 2.0	10/02/2018	10/04/2018 11:30	Adrian Shelby	10/05/2018 09:49	Joseph Suarez	2029932
	10/02/2018	10/04/2018 11:30	Adrian Shelby	10/05/2018 09:51	Joseph Suarez	2029933
	10/02/2018	10/04/2018 11:30	Adrian Shelby	10/05/2018 09:59	Joseph Suarez	2029938
	10/02/2018	10/04/2018 11:30	Adrian Shelby	10/05/2018 10:00	Joseph Suarez	2029939
	10/02/2018	10/04/2018 11:30	Adrian Shelby	10/05/2018 10:02	Joseph Suarez	2029943
EPA 353.2 Rev. 2.0	10/02/2018			10/04/2018 13:14	Lauren Bottorf	2029932
	10/02/2018			10/04/2018 13:15	Lauren Bottorf	2029933
	10/02/2018			10/04/2018 13:22	Lauren Bottorf	2029938
	10/02/2018			10/04/2018 13:28	Lauren Bottorf	2029939
	10/02/2018			10/04/2018 13:29	Lauren Bottorf	2029943
EPA 365.1 Rev. 2.0	10/02/2018	10/03/2018 13:00	Sima Feizi	10/04/2018 09:12	Beverly Y. Sanders	2029932
	10/02/2018	10/03/2018 13:00	Sima Feizi	10/04/2018 09:13	Beverly Y. Sanders	2029933
	10/02/2018	10/03/2018 13:00	Sima Feizi	10/04/2018 12:26	Beverly Y. Sanders	2029943
	10/02/2018	10/03/2018 13:00	Sima Feizi	10/04/2018 12:27	Beverly Y. Sanders	2029938
	10/02/2018	10/03/2018 13:00	Sima Feizi	10/04/2018 12:28	Beverly Y. Sanders	2029939
EPA 365.1 Rev. 2.0 dissolved	10/02/2018			10/02/2018 15:39	Julia Storbeck	2029934
	10/02/2018			10/02/2018 15:55	Julia Storbeck	2029944
	10/02/2018			10/02/2018 16:04	Julia Storbeck	2029940
	10/02/2018			10/02/2018 16:05	Julia Storbeck	2029941
	10/02/2018			10/02/2018 16:09	Julia Storbeck	2029935
SM 2120 B	10/02/2018			10/02/2018 14:49	Chelsea Hernandez	2029936
	10/02/2018			10/02/2018 14:50	Chelsea Hernandez	2029937

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B	10/02/2018			10/02/2018 14:54	Chelsea Hernandez	2029942
	10/02/2018			10/02/2018 15:36	Chelsea Hernandez	2029931
	10/02/2018			10/02/2018 15:37	Chelsea Hernandez	2029930
SM 2320 B-97	10/02/2018			10/06/2018 02:51	Dale L. Simmons	2029930
	10/02/2018			10/06/2018 03:01	Dale L. Simmons	2029931
	10/02/2018			10/06/2018 03:11	Dale L. Simmons	2029936
	10/02/2018			10/06/2018 03:21	Dale L. Simmons	2029937
	10/02/2018			10/06/2018 03:33	Dale L. Simmons	2029942
SM 2540 C-97	10/02/2018			10/03/2018 15:02	Yijie Li	2029930, 2029931, 2029936, 2029937, 2029942
SM 2540 D-97	10/02/2018			10/03/2018 15:02	Yijie Li	2029930, 2029931, 2029936, 2029937, 2029942
SM 4500 F-C-97	10/02/2018			10/06/2018 02:51	Dale L. Simmons	2029930
	10/02/2018			10/06/2018 03:01	Dale L. Simmons	2029931
	10/02/2018			10/06/2018 03:11	Dale L. Simmons	2029936
	10/02/2018			10/06/2018 03:21	Dale L. Simmons	2029937
	10/02/2018			10/06/2018 03:33	Dale L. Simmons	2029942
SM 5310 B-00	10/02/2018			10/04/2018 07:04	Megan Treadwell	2029932
	10/02/2018			10/04/2018 07:16	Megan Treadwell	2029933
	10/02/2018			10/04/2018 07:28	Megan Treadwell	2029938
	10/02/2018			10/04/2018 07:40	Megan Treadwell	2029939
	10/02/2018			10/04/2018 07:53	Megan Treadwell	2029943