

Chemical Analysis Report

CEN-DIST-2018-08-29-01

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

Event Description: **Myrtle / Charm / Hope / Noname**

Request ID: **RQ-2018-08-20-29**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

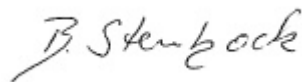
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 14-SEP-2018 18:07



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: NONAME LAKE @ CENTER (2999B)

Collection Date/Time: 08/28/2018 09:18

Field ID: G2CE0068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2020696	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P350968	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P350988	
		Sulfate	9.6		mg SO4/L	P350991	
	SM 2120 B	Color (true)	22		PCU	P350927	
	SM 2320 B-97	Total Alkalinity	18		mg CaCO3/L	P351050	
	SM 2540 C-97	TDS	70		mg/L	P351240	
	SM 2540 D-97	TSS	2	I	mg/L	P351071	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P351053	
2020699	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P351086	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P351023	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P351128	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P350957	
	SM 5310 B-00	Organic Carbon	6.0		mg C/L	P351337	
2020702	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P350920	

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: LAKE CHARM @ CENTER (2995)

Collection Date/Time: 08/28/2018 10:00

Field ID: G2CE0080

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2020697	EPA 180.1 Rev. 2.0	Turbidity	15		NTU	P350968	
	EPA 300.0 Rev. 2.1	Chloride	40		mg Cl/L	P350988	
		Sulfate	15		mg SO4/L	P350991	
	SM 2120 B	Color (true)	25	A	PCU	P350929	
	SM 2320 B-97	Total Alkalinity	54		mg CaCO3/L	P351050	
	SM 2540 C-97	TDS	168		mg/L	P351240	
	SM 2540 D-97	TSS	12		mg/L	P351071	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P351053	
2020700	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P351086	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.5		mg N/L	P351023	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P351128	
	EPA 365.1 Rev. 2.0	Total-P	0.055		mg P/L	P350957	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P351337	
2020703	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P350920	

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: LAKE MYRTLE @ 140M W OF CENTER OF SOUTH LOBE (2986B)

Collection Date/Time: 08/28/2018 10:51

Field ID: G2CE0190

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2020690	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P350968	
	EPA 300.0 Rev. 2.1	Chloride	27	A	mg Cl/L	P350988	
		Sulfate	3.5	A	mg SO4/L	P350991	
	SM 2120 B	Color (true)	40		PCU	P350926	
	SM 2320 B-97	Total Alkalinity	50		mg CaCO3/L	P351050	
	SM 2540 C-97	TDS	119		mg/L	P351239	
	SM 2540 D-97	TSS	8	I	mg/L	P351070	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P351053	
2020692	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P351085	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P351023	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.015		mg N/L	P351128	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P350957	
	SM 5310 B-00	Organic Carbon	9.9		mg C/L	P351337	
2020694	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P350919	
2020721	EPA 200.7 Rev. 4.4	Calcium	14.2		mg/L	P350964	
		Iron	86	I	ug/L	P350964	
		Magnesium	3.15		mg/L	P350964	
		Potassium	3.6		mg/L	P350964	
		Sodium	19.4		mg/L	P350964	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P350964	
		Arsenic	0.90		ug/L	P350964	
		Cadmium	0.020	U	ug/L	P350964	
		Chromium	0.40	U	ug/L	P350964	
		Copper	0.31	I	ug/L	P350964	
		Lead	0.21		ug/L	P350964	
		Nickel	0.24	I	ug/L	P350964	
		Silver	0.010	U	ug/L	P350964	

Sample Location: MYRTLE LAKE @ 135M NE OF CENTER OF SOUTH LOBE (2986B)

Collection Date/Time: 08/28/2018 10:59

Field ID: G2CE0191

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2020691	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P350968	
	EPA 300.0 Rev. 2.1	Chloride	27		mg Cl/L	P350988	
		Sulfate	3.5		mg SO4/L	P350991	
	SM 2120 B	Color (true)	41		PCU	P350926	
	SM 2320 B-97	Total Alkalinity	50		mg CaCO3/L	P351049	
	SM 2540 C-97	TDS	117		mg/L	P351239	
	SM 2540 D-97	TSS	8	I	mg/L	P351070	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P351412	
2020693	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P351086	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P351023	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P351128	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P350957	
	SM 5310 B-00	Organic Carbon	9.5		mg C/L	P351337	
2020695	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P350919	
2020722	EPA 200.7 Rev. 4.4	Calcium	14.2		mg/L	P350964	
		Iron	82	I	ug/L	P350964	
		Magnesium	3.15		mg/L	P350964	
		Potassium	3.6		mg/L	P350964	
		Sodium	19.5		mg/L	P350964	
		Zinc	5.0	U	ug/L	P350964	
	EPA 200.8 Rev. 5.4	Arsenic	0.88		ug/L	P350964	
		Cadmium	0.020	U	ug/L	P350964	
		Chromium	0.40	U	ug/L	P350964	
		Copper	0.31	I	ug/L	P350964	
		Lead	0.20		ug/L	P350964	
		Nickel	0.23	I	ug/L	P350964	
		Silver	0.010	U	ug/L	P350964	

Sample Location: LAKE HOPE @ CENTER (29979)

Collection Date/Time: 08/28/2018 11:59

Field ID: G2CE0106

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2020698	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P350969	
	EPA 300.0 Rev. 2.1	Chloride	46		mg Cl/L	P350988	
		Sulfate	20		mg SO4/L	P350991	
	SM 2120 B	Color (true)	22		PCU	P350927	
	SM 2320 B-97	Total Alkalinity	41	A	mg CaCO3/L	P351050	
	SM 2540 C-97	TDS	168	A	mg/L	P351240	
	SM 2540 D-97	TSS	3	IA	mg/L	P351071	
	SM 4500 F-C-97	Fluoride	0.072	IA	mg F/L	P351053	
2020701	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P350981	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P351023	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P351128	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P350957	
	SM 5310 B-00	Organic Carbon	5.9		mg C/L	P351337	
2020704	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P350920	

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: P350968

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350969

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P350964

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: P350964

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
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350988

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350991

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350981

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351085

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351086

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351023

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351128

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: P350957

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350919

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350920

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

Reference Method: SM 2120 B
Batch ID: P350926

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P350927

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P350929

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P351049

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

Reference Method: SM 2320 B-97
Batch ID: P351050

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

Reference Method: SM 2540 C-97
Batch ID: P351239

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P351240

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351070

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351071

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P351053

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P351412

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P351337

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: P350964

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	102		P	85 - 115
Magnesium	109		P	85 - 115
Potassium	110		P	85 - 115
Sodium	101		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P350964

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	93.8		P	85 - 115
Cadmium	93.0		P	85 - 115
Chromium	88.5		P	85 - 115
Copper	87.3		P	85 - 115
Lead	91.5		P	85 - 115
Nickel	89.8		P	85 - 115
Silver	92.7		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350988

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350991

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350981

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351085

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351086

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351023

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351128

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: P350957

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350919

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350920

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

Reference Method: SM 2120 B
Batch ID: P350926

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	96.1		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P350927

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.4		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P350929

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.8		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P351049

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P351050

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

Reference Method: SM 4500 F-C-97
Batch ID: P351053

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.7		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P351412

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.7		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P351337

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P350964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020573	Calcium	104		P	80 - 120
2020573	Iron	99.3		P	80 - 120
2020573	Magnesium	105		P	80 - 120
2020573	Potassium	106		P	80 - 120
2020573	Sodium	101		P	80 - 120
2020573	Zinc	103		P	80 - 120
2020654	Calcium	99.7		P	80 - 120
2020654	Iron	99.5	98.4	P/P	80 - 120
2020654	Magnesium	105	103	P/P	80 - 120
2020654	Potassium	110	107	P/P	80 - 120
2020654	Sodium	97.7		P	80 - 120
2020654	Zinc	104	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P350964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020573	Arsenic	99.8		P	80 - 120
2020573	Cadmium	98.4		P	80 - 120
2020573	Chromium	94.9		P	80 - 120
2020573	Copper	95.4		P	80 - 120
2020573	Lead	97.4		P	80 - 120
2020573	Nickel	95.4		P	80 - 120
2020573	Silver	95.4		P	80 - 120
2020654	Arsenic	101	102	P/P	80 - 120
2020654	Cadmium	101	103	P/P	80 - 120
2020654	Chromium	97.9	96.9	P/P	80 - 120
2020654	Copper	96.1	96.8	P/P	80 - 120
2020654	Lead	100	101	P/P	80 - 120
2020654	Nickel	97.1	97.5	P/P	80 - 120
2020654	Silver	95.9	96.7	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350988

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020690	Chloride	90.2		P	90 - 110
2020743	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020690	Sulfate	97.5		P	90 - 110
2020743	Sulfate	106		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350981

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020701	Ammonia-N	98.2	99.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351085

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020524	Ammonia-N	96.7	97.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351086

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020693	Ammonia-N	99.8	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351023

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020701	Kjeldahl Nitrogen	105	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351128

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020692	NO2NO3-N	99.6	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350957

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020708	Total-P	96.4	95.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020642	O-Phosphate-P	95.0	95.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350920

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020702	O-Phosphate-P	97.3	96.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P351053

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020698	Fluoride	98.6	98.6	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P351412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022280	Fluoride	97.5	98.2	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P351337

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020647	Organic Carbon	92.6	92.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020643	Turbidity	5.29	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350969

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020705	Turbidity	1.75	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P350964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020654	Calcium	1.54	Spike	P	0 - 20
2020654	Iron	1.09	Spike	P	0 - 20
2020654	Magnesium	1.22	Spike	P	0 - 20
2020654	Potassium	2.36	Spike	P	0 - 20
2020654	Sodium	1.98	Spike	P	0 - 20
2020654	Zinc	2.87	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P350964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020654	Arsenic	0.432	Spike	P	0 - 20
2020654	Cadmium	2.18	Spike	P	0 - 20
2020654	Chromium	1.05	Spike	P	0 - 20
2020654	Copper	0.672	Spike	P	0 - 20
2020654	Lead	0.662	Spike	P	0 - 20
2020654	Nickel	0.452	Spike	P	0 - 20
2020654	Silver	0.801	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020690	Chloride	0.898	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020690	Sulfate	0.576	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020701	Ammonia-N	1.34	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351085

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020524	Ammonia-N	0.546	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351086

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020693	Ammonia-N	1.96	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351023

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020701	Kjeldahl Nitrogen	2.76	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020692	NO2NO3-N	1.85	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350957

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020708	Total-P	1.09	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020642	O-Phosphate-P	0.734	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020702	O-Phosphate-P	1.14	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P350926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020563	Color (true)	3.96	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P350927

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020705	Color (true)	2.56	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P350929

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020697	Color (true)	4.49	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P351049

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019575	Total Alkalinity	0.917	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P351050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020698	Total Alkalinity	0.556	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P351239

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020476	TDS	5.52	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P351240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020698	TDS	4.15	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P351070

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020476	TSS	5.88	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P351053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020698	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P351412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022280	Fluoride	0.473	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P351337

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020647	Organic Carbon	0.263	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 365.1 Rev. 2.0 dissolved

Run ID: A86187

Included Lab Sample IDs: 2020694, 2020695, 2020702, 2020703, 2020704

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	99.9	101	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A86191

Included Lab Sample IDs: 2020690, 2020691, 2020696, 2020697, 2020698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.3	99.0	P/P	90 - 115
Color (true)	98.5	99.3	P/P	90 - 115
Color (true)	98.9	98.5	P/P	90 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A86194

Included Lab Sample IDs: 2020690, 2020691, 2020696, 2020697, 2020698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	104	P/P	90 - 110
Chloride	97.1	101	P/P	90 - 110
Sulfate	101	103	P/P	90 - 110
Sulfate	95.7	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A86212

Included Lab Sample IDs: 2020690, 2020691, 2020696, 2020697, 2020698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	101	P/P	95 - 105
Turbidity	104	102	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86220

Included Lab Sample IDs: 2020701

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	95.6	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86222

Included Lab Sample IDs: 2020692, 2020693, 2020700

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86233

Included Lab Sample IDs: 2020699, 2020701

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A86252

Included Lab Sample IDs: 2020690, 2020691, 2020696, 2020697, 2020698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110
Total Alkalinity	104	101	P/P	90 - 110
Total Alkalinity	104	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A86252

Included Lab Sample IDs: 2020690, 2020696, 2020697, 2020698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	100	P/P	90 - 110
Fluoride	99.5	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86268

Included Lab Sample IDs: 2020692, 2020693, 2020699, 2020700, 2020701

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86276

Included Lab Sample IDs: 2020692, 2020693, 2020699, 2020700

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.3	P/P	90 - 110
Ammonia-N	99.3	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A86277

Included Lab Sample IDs: 2020721, 2020722

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	94.2	95.1	P/P	90 - 110
Cadmium	93.9	94.8	P/P	90 - 110
Chromium	91.4	93.1	P/P	90 - 110
Copper	92.7	93.3	P/P	90 - 110
Lead	101	102	P/P	90 - 110
Nickel	92.9	93.4	P/P	90 - 110
Silver	92.9	93.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A86281

Included Lab Sample IDs: 2020721, 2020722

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	97.3	96.4	P/P	90 - 110
Iron	93.3	90.8	P/P	90 - 110
Magnesium	96.7	94.7	P/P	90 - 110
Potassium	101	101	P/P	90 - 110
Sodium	97.6	98.7	P/P	90 - 110
Zinc	100	99.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86298

Included Lab Sample IDs: 2020692, 2020693, 2020699, 2020700, 2020701

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

Reference Method: SM 5310 B-00

Run ID: A86377

Included Lab Sample IDs: 2020692, 2020693, 2020699, 2020700, 2020701

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.6	93.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A86400

Included Lab Sample IDs: 2020691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.5	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					5.29	
	Turbidity					1.75	
EPA 200.7 Rev. 4.4	Calcium	102	104	99.7			1.54
	Iron	102	99.3	99.5	98.4		1.09
	Magnesium	109	105	105	103		1.22
	Potassium	110	106	110	107		2.36
	Sodium	101	101	97.7			1.98
	Zinc	103	103	104	101		2.87
EPA 200.8 Rev. 5.4	Arsenic	93.8	99.8	101	102		0.432
	Cadmium	93.0	98.4	101	103		2.18
	Chromium	88.5	94.9	97.9	96.9		1.05
	Copper	87.3	95.4	96.1	96.8		0.672
	Lead	91.5	97.4	100	101		0.662
	Nickel	89.8	95.4	97.1	97.5		0.452
	Silver	92.7	95.4	95.9	96.7		0.801
EPA 300.0 Rev. 2.1	Chloride	105	90.2	104		0.898	
	Sulfate	104	97.5	106		0.576	
EPA 350.1 Rev. 2.0	Ammonia-N	103	98.2	99.6			1.34
	Ammonia-N	96.7	96.7	97.3			0.546
	Ammonia-N	103	99.8	97.6			1.96
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	105	109			2.76
EPA 353.2 Rev. 2.0	NO2NO3-N	100	99.6	102			1.85
EPA 365.1 Rev. 2.0	Total-P	95.4	96.4	95.2			1.09
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.7	95.0	95.7			0.734
	O-Phosphate-P	102	97.3	96.2			1.14
SM 2120 B	Color (true)	96.1				3.96	
	Color (true)	98.4				2.56	
	Color (true)	99.8				4.49	
SM 2320 B-97	Total Alkalinity	103				0.917	
	Total Alkalinity	103				0.556	
SM 2540 C-97	TDS					5.52	
	TDS					4.15	
SM 2540 D-97	TSS					5.88	
SM 4500 F-C-97	Fluoride	98.7	98.6	98.6			0.0
	Fluoride	98.7	97.5	98.2			0.473
SM 5310 B-00	Organic Carbon	95.4	92.6	92.2			0.263

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2020690, 2020691, 2020696, 2020697, 2020698
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2020721, 2020722
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2020721, 2020722
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2020690, 2020691, 2020696, 2020697, 2020698
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2020690, 2020691, 2020696, 2020697, 2020698
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2020692, 2020693, 2020699, 2020700, 2020701
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2020692, 2020693, 2020699, 2020700, 2020701

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2020692, 2020693, 2020699, 2020700, 2020701
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2020692, 2020693, 2020699, 2020700, 2020701
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2020694, 2020695, 2020702, 2020703, 2020704
SM 2120 B / E31780	True Color measured at 450 nm	2020690, 2020691, 2020696, 2020697, 2020698
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2020690, 2020691, 2020696, 2020697, 2020698
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2020690, 2020691, 2020696, 2020697, 2020698
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2020690, 2020691, 2020696, 2020697, 2020698
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2020690, 2020691, 2020696, 2020697, 2020698
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2020692, 2020693, 2020699, 2020700, 2020701

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	08/29/2018			08/29/2018 15:21	Megan Treadwell	2020690, 2020691, 2020696, 2020697, 2020698
EPA 200.7 Rev. 4.4	08/29/2018	08/30/2018 14:20	Elliott D. Healy	08/31/2018 15:55	Martin Acosta	2020721
	08/29/2018	08/30/2018 14:20	Elliott D. Healy	08/31/2018 16:02	Martin Acosta	2020722
EPA 200.8 Rev. 5.4	08/29/2018	08/30/2018 14:20	Elliott D. Healy	09/04/2018 17:43	Allison Taylor	2020721
	08/29/2018	08/30/2018 14:20	Elliott D. Healy	09/04/2018 17:52	Allison Taylor	2020722
EPA 300.0 Rev. 2.1	08/29/2018			08/31/2018 01:06	Lipi Saha	2020690
	08/29/2018			08/31/2018 02:18	Lipi Saha	2020691
	08/29/2018			08/31/2018 02:30	Lipi Saha	2020696
	08/29/2018			08/31/2018 02:42	Lipi Saha	2020697
	08/29/2018			08/31/2018 03:18	Lipi Saha	2020698
EPA 350.1 Rev. 2.0	08/29/2018			08/30/2018 15:30	Adrian Shelby	2020701
	08/29/2018			09/04/2018 11:47	Ping Hua	2020692
	08/29/2018			09/04/2018 11:58	Ping Hua	2020693
	08/29/2018			09/04/2018 12:02	Ping Hua	2020699
	08/29/2018			09/04/2018 12:04	Ping Hua	2020700
EPA 351.2 Rev. 2.0	08/29/2018	08/31/2018 15:00	Adrian Shelby	09/04/2018 10:14	Joseph Suarez	2020692
	08/29/2018	08/31/2018 15:00	Adrian Shelby	09/04/2018 10:16	Joseph Suarez	2020693
	08/29/2018	08/31/2018 15:00	Adrian Shelby	09/04/2018 10:17	Joseph Suarez	2020699
	08/29/2018	08/31/2018 15:00	Adrian Shelby	09/04/2018 10:19	Joseph Suarez	2020700
	08/29/2018	08/31/2018 15:00	Adrian Shelby	09/04/2018 10:20	Joseph Suarez	2020701
EPA 353.2 Rev. 2.0	08/29/2018			09/05/2018 14:13	Lauren Bottorf	2020692
	08/29/2018			09/05/2018 14:20	Lauren Bottorf	2020693
	08/29/2018			09/05/2018 14:22	Lauren Bottorf	2020699
	08/29/2018			09/05/2018 14:23	Lauren Bottorf	2020700
	08/29/2018			09/05/2018 14:24	Lauren Bottorf	2020701
EPA 365.1 Rev. 2.0	08/29/2018	08/30/2018 11:37	Sima Feizi	08/31/2018 08:29	Beverly Y. Sanders	2020692
	08/29/2018	08/30/2018 11:37	Sima Feizi	08/31/2018 08:30	Beverly Y. Sanders	2020693
	08/29/2018	08/30/2018 11:37	Sima Feizi	08/31/2018 08:33	Beverly Y. Sanders	2020700
	08/29/2018	08/30/2018 11:37	Sima Feizi	08/31/2018 12:08	Beverly Y. Sanders	2020699
	08/29/2018	08/30/2018 11:37	Sima Feizi	08/31/2018 12:09	Beverly Y. Sanders	2020701
EPA 365.1 Rev. 2.0 dissolved	08/29/2018			08/29/2018 15:28	Julia Storbeck	2020702
	08/29/2018			08/29/2018 15:48	Julia Storbeck	2020694
	08/29/2018			08/29/2018 15:49	Julia Storbeck	2020695
	08/29/2018			08/29/2018 15:51	Julia Storbeck	2020703, 2020704
SM 2120 B	08/29/2018			08/29/2018 15:51	DeAsia Armster	2020690, 2020691
	08/29/2018			08/29/2018 15:55	DeAsia Armster	2020696
	08/29/2018			08/29/2018 15:56	DeAsia Armster	2020698
	08/29/2018			08/29/2018 16:21	DeAsia Armster	2020697
SM 2320 B-97	08/29/2018			08/30/2018 23:56	Dale L. Simmons	2020691

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-97	08/29/2018			08/31/2018 07:18	Dale L. Simmons	2020698
	08/29/2018			08/31/2018 09:26	Dale L. Simmons	2020690
	08/29/2018			08/31/2018 09:48	Dale L. Simmons	2020696
	08/29/2018			08/31/2018 09:58	Dale L. Simmons	2020697
SM 2540 C-97	08/29/2018			08/30/2018 14:22	Yijie Li	2020690, 2020691, 2020696, 2020697, 2020698
SM 2540 D-97	08/29/2018			08/30/2018 14:22	Yijie Li	2020690, 2020691, 2020696, 2020697, 2020698
SM 4500 F-C-97	08/29/2018			08/31/2018 07:18	Dale L. Simmons	2020698
	08/29/2018			08/31/2018 09:26	Dale L. Simmons	2020690
	08/29/2018			08/31/2018 09:48	Dale L. Simmons	2020696
	08/29/2018			08/31/2018 09:58	Dale L. Simmons	2020697
	08/29/2018			09/11/2018 08:50	Dale L. Simmons	2020691
SM 5310 B-00	08/29/2018			09/07/2018 23:42	Megan Treadwell	2020692
	08/29/2018			09/07/2018 23:56	Megan Treadwell	2020693
	08/29/2018			09/08/2018 00:09	Megan Treadwell	2020699
	08/29/2018			09/08/2018 00:22	Megan Treadwell	2020700
	08/29/2018			09/08/2018 00:35	Megan Treadwell	2020701