Chemical Analysis Report

CEN-DIST-2018-09-21-01

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

Event Description: **Myrtle X2 / Charm / Hope / Noname**
Request ID: **RQ-2018-09-17-62**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Date Certified: 17-OCT-2018 14:11

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: Lake Hope @ Center **Collection Date/Time: 09/20/2018 09:56**

Field ID: G2CE0106 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2027635	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P352116	
	EPA 300.0 Rev. 2.1	Chloride	45		mg Cl/L	P352521	MS
		Sulfate	19		mg SO4/L	P352523	
	SM 2120 B	Color (true)	21		PCU	P352100	
	SM 2320 B-97	Total Alkalinity	41	A	mg CaCO3/L	P352643	
	SM 2540 C-97	TDS	147		mg/L	P352445	
	SM 2540 D-97	TSS	2	I	mg/L	P352516	
	SM 4500 F-C-97	Fluoride	0.071	I	mg F/L	P352647	
2027638	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P352626	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P352543	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P352265	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P352321	
	SM 5310 B-00	Organic Carbon	5.9		mg C/L	P352349	
2027641	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P352104	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Noname Lake @ Center **Collection Date/Time: 09/20/2018 10:42**

Field ID: G2CE0068 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2027636	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P352117	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P352521	MS
		Sulfate	8.9		mg SO4/L	P352523	
	SM 2120 B	Color (true)	22		PCU	P352100	
	SM 2320 B-97	Total Alkalinity	20		mg CaCO3/L	P352643	
	SM 2540 C-97	TDS	75		mg/L	P352445	
	SM 2540 D-97	TSS	3	I	mg/L	P352516	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P352647	
2027639	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P352626	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P352397	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P352265	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P352323	
	SM 5310 B-00	Organic Carbon	6.2		mg C/L	P352349	
2027642	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P352104	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Charm @ Center **Collection Date/Time: 09/20/2018 11:32**

Field ID: G2CE0080 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2027637	EPA 180.1 Rev. 2.0	Turbidity	19	A	NTU	P352117	
	EPA 300.0 Rev. 2.1	Chloride	38		mg Cl/L	P352521	MS
		Sulfate	14		mg SO4/L	P352523	
	SM 2120 B	Color (true)	26	A	PCU	P352102	
	SM 2320 B-97	Total Alkalinity	54		mg CaCO3/L	P352643	
	SM 2540 C-97	TDS	175		mg/L	P352445	
	SM 2540 D-97	TSS	8	I	mg/L	P352516	
	SM 4500 F-C-97	Fluoride	0.21		mg F/L	P352647	
2027640	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P352626	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.5		mg N/L	P352397	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P352265	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P352323	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P352349	
2027643	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P352104	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Myrtle @ 140m W of Center of South Lobe Collection Date/Time: 09/20/2018 12:20

Field ID: G2CE0190 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2027629	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P352116	
	EPA 300.0 Rev. 2.1	Chloride	27	A	mg Cl/L	P352521	MS
		Sulfate	3.2	A	mg SO4/L	P352523	
	SM 2120 B	Color (true)	45		PCU	P352100	
	SM 2320 B-97	Total Alkalinity	51		mg CaCO3/L	P352565	
	SM 2540 C-97	TDS	120	A	mg/L	P352445	
	SM 2540 D-97	TSS	6	IA	mg/L	P352516	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P352567	
2027631	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P352626	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P352332	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P352265	
	EPA 365.1 Rev. 2.0	Total-P	0.060		mg P/L	P352321	
	SM 5310 B-00	Organic Carbon	9.9		mg C/L	P352349	
2027633	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P352104	
2027660	EPA 200.7 Rev. 4.4	Calcium	15.0		mg/L	P352205	
		Iron	100	I	ug/L	P352205	
		Magnesium	3.32		mg/L	P352205	
		Potassium	3.6		mg/L	P352205	
		Sodium	19.8		mg/L	P352205	
		Zinc	5.0	U	ug/L	P352205	
	EPA 200.8 Rev. 5.4	Arsenic	0.80		ug/L	P352205	
		Cadmium	0.020	U	ug/L	P352205	
		Chromium	0.40	U	ug/L	P352205	
		Copper	0.23	I	ug/L	P352205	
		Lead	0.14	I	ug/L	P352205	
		Nickel	0.21	I	ug/L	P352205	
		Silver	0.010	U	ug/L	P352898	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Myrtle Lake @ 135m NE of Center of South Lobe **Collection Date/Time: 09/20/2018 12:26**

Field ID: G2CE0191 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2027630	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P352116	
	EPA 300.0 Rev. 2.1	Chloride	27		mg Cl/L	P352521	MS
		Sulfate	3.1		mg SO4/L	P352523	
	SM 2120 B	Color (true)	44		PCU	P352100	
	SM 2320 B-97	Total Alkalinity	51		mg CaCO3/L	P352565	
	SM 2540 C-97	TDS	119		mg/L	P352445	
	SM 2540 D-97	TSS	6	I	mg/L	P352516	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P352567	
2027632	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P352626	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P352332	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P352265	
	EPA 365.1 Rev. 2.0	Total-P	0.061		mg P/L	P352321	
	SM 5310 B-00	Organic Carbon	9.8		mg C/L	P352349	
2027634	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P352104	
2027661	EPA 200.7 Rev. 4.4	Calcium	15.2		mg/L	P352205	
		Iron	99	I	ug/L	P352205	
		Magnesium	3.29		mg/L	P352205	
		Potassium	3.6		mg/L	P352205	
		Sodium	19.9		mg/L	P352205	
		Zinc	5.0	U	ug/L	P352205	
	EPA 200.8 Rev. 5.4	Arsenic	0.84		ug/L	P352205	
		Cadmium	0.020	U	ug/L	P352205	
		Chromium	0.40	U	ug/L	P352205	
		Copper	0.24	I	ug/L	P352205	
		Lead	0.16	I	ug/L	P352205	
		Nickel	0.20	U	ug/L	P352205	
		Silver	0.010	U	ug/L	P352898	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 5310 B-00: 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: P352116

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P352117

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P352205

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: P352205

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: P352898

Component	Result	Code	Units
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352521

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352523

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P352626

Component	Result	Code	Units

Quality Assurance Report
Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P352626

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352332

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352397

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352543

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P352265

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P352321

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P352323

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P352104

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

Reference Method: SM 2120 B
Batch ID: P352100

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report
Method Blank Results

Reference Method: SM 2120 B
Batch ID: P352102

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P352565

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2320 B-97
Batch ID: P352643

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P352445

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P352516

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P352567

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P352647

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P352349

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: P352205

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	110		P	85 - 115
Magnesium	114		P	85 - 115
Potassium	106		P	85 - 115
Sodium	104		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352205

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	105		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	108		P	85 - 115
Copper	103		P	85 - 115
Lead	92.9		P	85 - 115
Nickel	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352898

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Silver	95.8		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352521

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352523

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P352626

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352332

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352397

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352397

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352543

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P352265

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: P352321

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P352323

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P352104

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

Reference Method: SM 2120 B
Batch ID: P352100

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	96.7		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P352102

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

Reference Method: SM 2320 B-97
Batch ID: P352565

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P352643

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P352567

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P352647

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

Reference Method: SM 5310 B-00
Batch ID: P352349

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.5		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P352205

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027701	Calcium	100		P	80 - 120
2027701	Iron	105	106	P/P	80 - 120
2027701	Magnesium	107	107	P/P	80 - 120
2027701	Potassium	103	103	P/P	80 - 120
2027701	Sodium	101		P	80 - 120
2027701	Zinc	100	98.8	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352205

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027701	Arsenic	98.5	99.4	P/P	80 - 120
2027701	Cadmium	94.9	95.0	P/P	80 - 120
2027701	Chromium	104	107	P/P	80 - 120
2027701	Copper	95.5	95.3	P/P	80 - 120
2027701	Lead	89.1	90.4	P/P	80 - 120
2027701	Nickel	93.7	94.9	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352898

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027624	Silver	95.0	95.0	P/P	80 - 120
2027661	Silver	95.5		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027629	Chloride	90.4		P	90 - 110
2027725	Chloride	88.0		F	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352523

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027629	Sulfate	93.5		P	90 - 110
2027725	Sulfate	92.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P352626

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027631	Ammonia-N	98.1	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352332

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027631	Kjeldahl Nitrogen	99.2	100	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027899	Kjeldahl Nitrogen	97.9	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2028752	Kjeldahl Nitrogen	107	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P352265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027583	NO2NO3-N	98.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P352321

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027631	Total-P	101	95.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P352323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027639	Total-P	94.7	93.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P352104

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027633	O-Phosphate-P	97.1	97.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P352567

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027329	Fluoride	96.0	96.0	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P352647

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027635	Fluoride	97.6	98.2	P/P	91 - 105

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P352116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027572	Turbidity	1.13	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P352117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027637	Turbidity	0.519	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P352205

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027701	Calcium	0.545	Spike	P	0 - 20
2027701	Iron	0.739	Spike	P	0 - 20
2027701	Magnesium	0.441	Spike	P	0 - 20
2027701	Potassium	0.130	Spike	P	0 - 20
2027701	Sodium	0.686	Spike	P	0 - 20
2027701	Zinc	1.54	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352205

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027701	Arsenic	0.862	Spike	P	0 - 20
2027701	Cadmium	0.152	Spike	P	0 - 20
2027701	Chromium	3.04	Spike	P	0 - 20
2027701	Copper	0.189	Spike	P	0 - 20
2027701	Lead	1.46	Spike	P	0 - 20
2027701	Nickel	1.29	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352898

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027624	Silver	0.0318	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027629	Chloride	0.449	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352523

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027629	Sulfate	0.953	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P352626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027631	Ammonia-N	0.759	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352332

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027631	Kjeldahl Nitrogen	0.615	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027899	Kjeldahl Nitrogen	2.77	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2028752	Kjeldahl Nitrogen	3.51	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P352265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027583	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P352321

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027631	Total-P	5.31	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P352323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027639	Total-P	1.01	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P352104

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027633	O-Phosphate-P	0.392	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P352100

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027578	Color (true)	0.881	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P352102

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027637	Color (true)	1.68	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P352565

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027329	Total Alkalinity	1.02	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P352643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027635	Total Alkalinity	0.752	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P352445

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027629	TDS	0.830	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P352567

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027329	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P352647

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027635	Fluoride	0.527	Spike	P	0 - 3.5

Quality Assurance Report
Precision

Reference Method: SM 5310 B-00
Batch ID: P352349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027590	Organic Carbon	0.320	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: SM 2120 B
Run ID: A86649
Included Lab Sample IDs: 2027629, 2027630, 2027635, 2027636, 2027637

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	104	105	P/P	90 - 115
Color (true)	105	105	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A86650
Included Lab Sample IDs: 2027633, 2027634, 2027641, 2027642, 2027643

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	98.6	P/P	90 - 110
O-Phosphate-P	98.7	98.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A86658
Included Lab Sample IDs: 2027629, 2027630, 2027635, 2027636, 2027637

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105
Turbidity	103	102	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A86718
Included Lab Sample IDs: 2027629, 2027630, 2027635, 2027636, 2027637

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.1	98.7	P/P	90 - 110
Sulfate	95.8	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A86724
Included Lab Sample IDs: 2027631, 2027632, 2027638, 2027639, 2027640

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A86735
Included Lab Sample IDs: 2027660, 2027661

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	102	P/P	90 - 110
Iron	104	102	P/P	90 - 110
Magnesium	103	101	P/P	90 - 110
Potassium	102	100	P/P	90 - 110
Sodium	103	100	P/P	90 - 110
Zinc	101	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A86736
Included Lab Sample IDs: 2027660, 2027661

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A86736
Included Lab Sample IDs: 2027660, 2027661

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	98.5	98.7	P/P	90 - 110
Cadmium	94.2	96.5	P/P	90 - 110
Copper	97.7	98.2	P/P	90 - 110
Lead	93.5	95.2	P/P	90 - 110
Nickel	97.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A86739
Included Lab Sample IDs: 2027631, 2027632, 2027640

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	102	P/P	90 - 110
Total-P	101	101	P/P	90 - 110
Total-P	102	101	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A86745
Included Lab Sample IDs: 2027631, 2027632, 2027638, 2027639, 2027640

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.5	93.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A86753
Included Lab Sample IDs: 2027631, 2027632

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A86761
Included Lab Sample IDs: 2027638, 2027639

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A86769
Included Lab Sample IDs: 2027639, 2027640

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	107	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A86800
Included Lab Sample IDs: 2027660, 2027661

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	104	102	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 2320 B-97
Run ID: A86829
Included Lab Sample IDs: 2027629, 2027630

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

Reference Method: SM 4500 F-C-97
Run ID: A86829
Included Lab Sample IDs: 2027629, 2027630

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A86854
Included Lab Sample IDs: 2027631, 2027632, 2027638, 2027639, 2027640

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

Reference Method: SM 2320 B-97
Run ID: A86860
Included Lab Sample IDs: 2027635, 2027636, 2027637

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

Reference Method: SM 4500 F-C-97
Run ID: A86860
Included Lab Sample IDs: 2027635, 2027636, 2027637

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A86924
Included Lab Sample IDs: 2027638

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A87002
Included Lab Sample IDs: 2027660, 2027661

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	93.4	94.9	P/P	90 - 110
Silver	93.4	93.9	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		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					1.13	
	Turbidity					0.519	
EPA 200.7 Rev. 4.4	Calcium	105	100				0.545
	Iron	110	105	106			0.739
	Magnesium	114	107	107			0.441
	Potassium	106	103	103			0.130
	Sodium	104	101				0.686
	Zinc	102	100	98.8			1.54
EPA 200.8 Rev. 5.4	Arsenic	105	98.5	99.4			0.862
	Cadmium	100	94.9	95.0			0.152
	Chromium	108	104	107			3.04
	Copper	103	95.5	95.3			0.189
	Lead	92.9	89.1	90.4			1.46
	Nickel	103	93.7	94.9			1.29
	Silver	95.8	95.0	95.0	95.5		0.0318
EPA 300.0 Rev. 2.1	Chloride	97.7	90.4	88.0		0.449	
	Sulfate	97.8	93.5	92.9		0.953	
EPA 350.1 Rev. 2.0	Ammonia-N	99.7	98.1	99.0			0.759
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	99.2	100			0.615
	Kjeldahl Nitrogen	104	97.9	102			2.77
	Kjeldahl Nitrogen	103	107	101			3.51
EPA 353.2 Rev. 2.0	NO2NO3-N	100	98.0	98.0			0.0
EPA 365.1 Rev. 2.0	Total-P	98.7	101	95.0			5.31
	Total-P	96.8	94.7	93.7			1.01
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.1	97.5			0.392
SM 2120 B	Color (true)	96.7				0.881	
	Color (true)	98.0				1.68	
SM 2320 B-97	Total Alkalinity	102				1.02	
	Total Alkalinity	104				0.752	
SM 2540 C-97	TDS					0.830	
SM 4500 F-C-97	Fluoride	97.8	96.0	96.0			0.0
	Fluoride	98.6	97.6	98.2			0.527
SM 5310 B-00	Organic Carbon	94.5					0.320

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2027629, 2027630, 2027635, 2027636, 2027637
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2027660, 2027661
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2027660, 2027661
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2027629, 2027630, 2027635, 2027636, 2027637
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2027629, 2027630, 2027635, 2027636, 2027637
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2027631, 2027632, 2027638, 2027639, 2027640
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2027631, 2027632, 2027638, 2027639, 2027640
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2027631, 2027632, 2027638, 2027639, 2027640
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2027631, 2027632, 2027638, 2027639, 2027640

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2027633, 2027634, 2027641, 2027642, 2027643
SM 2120 B / E31780	True Color measured at 450 nm	2027629, 2027630, 2027635, 2027636, 2027637
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2027629, 2027630, 2027635, 2027636, 2027637
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2027629, 2027630, 2027635, 2027636, 2027637
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2027629, 2027630, 2027635, 2027636, 2027637
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2027629, 2027630, 2027635, 2027636, 2027637
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2027631, 2027632, 2027638, 2027639, 2027640

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	09/21/2018			09/21/2018 16:28	Megan Treadwell	2027629, 2027630, 2027635, 2027636, 2027637
EPA 200.7 Rev. 4.4	09/21/2018	09/25/2018 16:00	Elliott D. Healy	09/26/2018 14:57	Betina Topolski	2027660
	09/21/2018	09/25/2018 16:00	Elliott D. Healy	09/26/2018 15:05	Betina Topolski	2027661
EPA 200.8 Rev. 5.4	09/21/2018	09/25/2018 16:00	Elliott D. Healy	09/26/2018 20:14	Robert K Palmer	2027660
	09/21/2018	09/25/2018 16:00	Elliott D. Healy	09/26/2018 20:23	Robert K Palmer	2027661
	09/21/2018	09/25/2018 16:00	Elliott D. Healy	09/30/2018 15:27	Robert K Palmer	2027660
	09/21/2018	09/25/2018 16:00	Elliott D. Healy	09/30/2018 15:33	Robert K Palmer	2027661
	09/21/2018	10/08/2018 10:04	Devin Thornton	10/08/2018 19:23	Robert K Palmer	2027661
	09/21/2018	10/08/2018 10:04	Devin Thornton	10/08/2018 21:10	Robert K Palmer	2027660
EPA 300.0 Rev. 2.1	09/21/2018			09/28/2018 21:06	Lipi Saha	2027629
	09/21/2018			09/28/2018 22:06	Lipi Saha	2027630
	09/21/2018			09/28/2018 22:18	Lipi Saha	2027635
	09/21/2018			09/28/2018 22:30	Lipi Saha	2027636
	09/21/2018			09/28/2018 22:42	Lipi Saha	2027637
EPA 350.1 Rev. 2.0	09/21/2018			10/01/2018 13:22	Ping Hua	2027631
	09/21/2018			10/01/2018 13:31	Ping Hua	2027632
	09/21/2018			10/01/2018 13:39	Ping Hua	2027638
	09/21/2018			10/01/2018 13:40	Ping Hua	2027639
	09/21/2018			10/01/2018 13:42	Ping Hua	2027640
EPA 351.2 Rev. 2.0	09/21/2018	09/26/2018 15:45	Adrian Shelby	09/27/2018 13:31	Joseph Suarez	2027631
	09/21/2018	09/26/2018 15:45	Adrian Shelby	09/27/2018 13:36	Joseph Suarez	2027632
	09/21/2018	09/27/2018 15:15	Adrian Shelby	09/28/2018 10:27	Joseph Suarez	2027639
	09/21/2018	09/27/2018 15:15	Adrian Shelby	09/28/2018 10:29	Joseph Suarez	2027640
	09/21/2018	10/01/2018 11:45	Adrian Shelby	10/04/2018 15:16	Joseph Suarez	2027638
EPA 353.2 Rev. 2.0	09/21/2018			09/26/2018 08:58	Beverly Y. Sanders	2027631
	09/21/2018			09/26/2018 09:00	Beverly Y. Sanders	2027632
	09/21/2018			09/26/2018 09:01	Beverly Y. Sanders	2027638
	09/21/2018			09/26/2018 09:02	Beverly Y. Sanders	2027639
	09/21/2018			09/26/2018 09:03	Beverly Y. Sanders	2027640
EPA 365.1 Rev. 2.0	09/21/2018	09/26/2018 11:30	Adrian Shelby	09/27/2018 08:53	Beverly Y. Sanders	2027631
	09/21/2018	09/26/2018 11:30	Adrian Shelby	09/27/2018 09:07	Beverly Y. Sanders	2027632
	09/21/2018	09/26/2018 11:30	Adrian Shelby	09/27/2018 09:17	Beverly Y. Sanders	2027640
	09/21/2018	09/26/2018 11:30	Adrian Shelby	09/27/2018 14:16	Beverly Y. Sanders	2027638
	09/21/2018	09/26/2018 11:30	Adrian Shelby	09/27/2018 14:18	Beverly Y. Sanders	2027639
EPA 365.1 Rev. 2.0 dissolved	09/21/2018			09/21/2018 15:52	Julia Storbeck	2027633
	09/21/2018			09/21/2018 16:27	Julia Storbeck	2027634
	09/21/2018			09/21/2018 16:28	Julia Storbeck	2027641
	09/21/2018			09/21/2018 16:29	Julia Storbeck	2027642
	09/21/2018			09/21/2018 16:30	Julia Storbeck	2027643

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B	09/21/2018			09/21/2018 15:52	DeAsia Armster	2027629
	09/21/2018			09/21/2018 15:53	DeAsia Armster	2027630, 2027635
	09/21/2018			09/21/2018 15:54	DeAsia Armster	2027636
	09/21/2018			09/21/2018 16:11	DeAsia Armster	2027637
SM 2320 B-97	09/21/2018			09/28/2018 09:12	Dale L. Simmons	2027629
	09/21/2018			09/28/2018 09:23	Dale L. Simmons	2027630
	09/21/2018			10/02/2018 07:35	Dale L. Simmons	2027635
	09/21/2018			10/02/2018 08:45	Dale L. Simmons	2027636
	09/21/2018			10/02/2018 08:56	Dale L. Simmons	2027637
SM 2540 C-97	09/21/2018			09/25/2018 15:05	Yijie Li	2027629, 2027630, 2027635, 2027636, 2027637
SM 2540 D-97	09/21/2018			09/25/2018 15:05	Yijie Li	2027629, 2027630, 2027635, 2027636, 2027637
SM 4500 F-C-97	09/21/2018			09/28/2018 09:12	Dale L. Simmons	2027629
	09/21/2018			09/28/2018 09:23	Dale L. Simmons	2027630
	09/21/2018			10/02/2018 07:27	Dale L. Simmons	2027635
	09/21/2018			10/02/2018 08:45	Dale L. Simmons	2027636
	09/21/2018			10/02/2018 08:56	Dale L. Simmons	2027637
SM 5310 B-00	09/21/2018			09/26/2018 23:46	Megan Treadwell	2027631
	09/21/2018			09/26/2018 23:59	Megan Treadwell	2027632
	09/21/2018			09/27/2018 00:13	Megan Treadwell	2027638
	09/21/2018			09/27/2018 00:26	Megan Treadwell	2027639
	09/21/2018			09/27/2018 00:39	Megan Treadwell	2027640