

Chemical Analysis Report

SO-DIST-2018-07-25-02

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

Event Description: **CALOOSA LT 3240A**
Request ID: **RQ-2018-07-09-01**
Customer: **SO-DIST**
Project ID: **BMAP**

Send Reports to:
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FLDEP South District Office
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Fort Myers, FL 33901-3381
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 15-AUG-2018 15:05



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: USGSStation-PuntaBlanca

Collection Date/Time: 07/24/2018 09:48

Field ID: G3SD0108

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2010672	SM 2320 B-97	Total Alkalinity	130		mg CaCO3/L	P349353	
	SM 4500 F-C-97	Fluoride	0.37		mg F/L	P349358	
2010676	SM 5310 B-00 dissolved	Organic Carbon	18		mg C/L	P349457	
2010680	EPA 350.1 Rev. 2.0	Ammonia-N	0.053		mg N/L	P349521	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P349383	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P349202	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P349381	MS
	SM 5310 B-00	Organic Carbon	18		mg C/L	P349457	
2010684	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P349142	
2010696	EPA 200.7 Rev. 4.4	Iron	310		ug/L	P349498	
	EPA 200.8 Rev. 5.4	Arsenic	2.37		ug/L	P349498	
		Cadmium	0.060	U	ug/L	P349498	
		Chromium	1.2	U	ug/L	P349498	
		Copper	1.5	I	ug/L	P349498	
		Lead	0.22	I	ug/L	P349498	
		Nickel	0.60	U	ug/L	P349498	
		Silver	0.030	U	ug/L	P349498	
		Zinc	3.0	U	ug/L	P349498	

Sample Location: USGS Station-ShellPoint

Collection Date/Time: 07/24/2018 10:16

Field ID: G3SD0109

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2010673	SM 2320 B-97	Total Alkalinity	129		mg CaCO3/L	P349354	
	SM 4500 F-C-97	Fluoride	0.70		mg F/L	P349358	
2010677	SM 5310 B-00 dissolved	Organic Carbon	13		mg C/L	P349364	
2010681	EPA 350.1 Rev. 2.0	Ammonia-N	0.049		mg N/L	P349521	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P349383	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P349202	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P349381	MS
	SM 5310 B-00	Organic Carbon	13		mg C/L	P349364	
2010685	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.084		mg P/L	P349142	
2010697	EPA 200.7 Rev. 4.4	Iron	150	I	ug/L	P349498	
	EPA 200.8 Rev. 5.4	Arsenic	2.33		ug/L	P349498	
		Cadmium	0.060	U	ug/L	P349498	
		Chromium	1.2	U	ug/L	P349498	
		Copper	1.0	I	ug/L	P349498	
		Lead	0.15	U	ug/L	P349498	
		Nickel	0.60	U	ug/L	P349498	
		Silver	0.030	U	ug/L	P349498	
		Zinc	3.0	U	ug/L	P349498	

Sample Location: Marker # 76

Collection Date/Time: 07/24/2018 10:40

Field ID: G3SD0110

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2010674	SM 2320 B-97	Total Alkalinity	131		mg CaCO3/L	P349353	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P349357	
2010678	SM 5310 B-00 dissolved	Organic Carbon	21		mg C/L	P349457	
2010682	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P349324	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P349379	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.26		mg N/L	P349333	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P349384	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P349457	
2010686	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P349141	
2010698	EPA 200.7 Rev. 4.4	Iron	510		ug/L	P349205	
		Zinc	5.0	U	ug/L	P349205	
	EPA 200.8 Rev. 5.4	Arsenic	2.18		ug/L	P349205	
		Cadmium	0.020	U	ug/L	P349205	
		Chromium	0.65	I	ug/L	P349205	
		Copper	1.49		ug/L	P349205	
		Lead	0.30		ug/L	P349205	
		Nickel	0.65	I	ug/L	P349205	
		Silver	0.010	U	ug/L	P349205	

Sample Location: Marker # 52

Collection Date/Time: 07/24/2018 11:13

Field ID: G3SD0111

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2010675	SM 2320 B-97	Total Alkalinity	105		mg CaCO3/L	P349353	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P349357	
2010679	SM 5310 B-00 dissolved	Organic Carbon	21		mg C/L	P349457	
2010683	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P349324	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P349379	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P349333	
	EPA 365.1 Rev. 2.0	Total-P	0.64		mg P/L	P349384	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P349457	
2010687	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P349141	
2010699	EPA 200.7 Rev. 4.4	Iron	830		ug/L	P349205	
		Zinc	5.0	U	ug/L	P349205	
	EPA 200.8 Rev. 5.4	Arsenic	1.80		ug/L	P349205	
		Cadmium	0.020	U	ug/L	P349205	
		Chromium	0.81	I	ug/L	P349205	
		Copper	1.42		ug/L	P349205	
		Lead	0.39		ug/L	P349205	
		Nickel	0.62	I	ug/L	P349205	
		Silver	0.010	U	ug/L	P349205	

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P349205

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P349498

Component	Result	Code	Units
Iron	30	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P349205

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 200.8 Rev. 5.4
Batch ID: P349498

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
Zinc	1.0	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349324

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349521

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349379

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349383

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349202

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349333

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: P349381

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349384

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349141

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349142

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

Reference Method: SM 2320 B-97
Batch ID: P349353

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

Reference Method: SM 2320 B-97
Batch ID: P349354

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P349357

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P349358

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P349364

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

Reference Method: SM 5310 B-00
Batch ID: P349457

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P349364

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P349457

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: P349205

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	104		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P349498

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P349205

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	99.3		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	95.7		P	85 - 115
Copper	98.0		P	85 - 115
Lead	94.5		P	85 - 115
Nickel	100		P	85 - 115
Silver	97.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P349498

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	98.0		P	85 - 115
Cadmium	98.1		P	85 - 115
Chromium	95.2		P	85 - 115
Copper	95.9		P	85 - 115
Lead	95.8		P	85 - 115
Nickel	99.6		P	85 - 115
Silver	101		P	85 - 115
Zinc	97.9		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349324

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349521

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349379

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349383

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: P349202

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: P349333

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349381

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349384

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349141

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349142

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

Reference Method: SM 2320 B-97
Batch ID: P349353

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

Reference Method: SM 2320 B-97
Batch ID: P349354

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 4500 F-C-97
Batch ID: P349357

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.4		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P349358

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P349364

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.4		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P349457

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.8		P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P349364

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.4		P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P349457

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P349205

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010488	Iron	101		P	80 - 120
2010488	Zinc	104		P	80 - 120
2010664	Iron	99.7	101	P/P	80 - 120
2010664	Zinc	99.0	98.3	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P349498

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010697	Iron	103	105	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P349205

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010488	Arsenic	104		P	80 - 120
2010488	Cadmium	102		P	80 - 120
2010488	Chromium	95.3		P	80 - 120
2010488	Copper	99.6		P	80 - 120
2010488	Lead	97.8		P	80 - 120
2010488	Nickel	101		P	80 - 120
2010488	Silver	98.0		P	80 - 120
2010664	Arsenic	102	102	P/P	80 - 120
2010664	Cadmium	99.6	102	P/P	80 - 120
2010664	Chromium	96.1	96.0	P/P	80 - 120
2010664	Copper	95.0	95.8	P/P	80 - 120
2010664	Lead	95.4	95.2	P/P	80 - 120
2010664	Nickel	96.7	98.1	P/P	80 - 120
2010664	Silver	96.4	96.1	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P349498

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010697	Arsenic	103	105	P/P	70 - 130
2010697	Cadmium	92.4	92.7	P/P	70 - 130
2010697	Chromium	83.1	85.8	P/P	70 - 130
2010697	Copper	91.8	92.6	P/P	70 - 130
2010697	Lead	109	108	P/P	70 - 130
2010697	Nickel	90.8	90.8	P/P	70 - 130
2010697	Silver	91.5	90.4	P/P	70 - 130
2010697	Zinc	89.1	89.7	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349324

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010619	Ammonia-N	102	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010508	Ammonia-N	103	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349379

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010631	Kjeldahl Nitrogen	99.7	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349383

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010710	Kjeldahl Nitrogen	100	94.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010499	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349333

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010682	NO2NO3-N	99.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349381

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010711	Total-P	85.8	87.2	F/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349384

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010626	Total-P	94.4	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349141

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010627	O-Phosphate-P	97.3	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349142

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010514	O-Phosphate-P	97.1	97.3	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P349357

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010787	Fluoride	101	100	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P349358

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010501	Fluoride	94.0	94.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P349364

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010509	Organic Carbon	95.2	96.4	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P349457

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010631	Organic Carbon	94.6	92.2	P/P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P349364

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010509	Organic Carbon	95.2	96.4	P/P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P349457

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010631	Organic Carbon	94.6	92.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P349205

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010664	Iron	0.980	Spike	P	0 - 20
2010664	Zinc	0.688	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P349498

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010697	Iron	1.74	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P349205

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010664	Arsenic	0.0953	Spike	P	0 - 20
2010664	Cadmium	2.66	Spike	P	0 - 20
2010664	Chromium	0.193	Spike	P	0 - 20
2010664	Copper	0.799	Spike	P	0 - 20
2010664	Lead	0.195	Spike	P	0 - 20
2010664	Nickel	1.41	Spike	P	0 - 20
2010664	Silver	0.379	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P349498

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010697	Arsenic	1.14	Spike	P	0 - 20
2010697	Cadmium	0.338	Spike	P	0 - 20
2010697	Chromium	3.29	Spike	P	0 - 20
2010697	Copper	0.740	Spike	P	0 - 20
2010697	Lead	0.795	Spike	P	0 - 20
2010697	Nickel	0.0799	Spike	P	0 - 20
2010697	Silver	1.21	Spike	P	0 - 20
2010697	Zinc	0.635	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349324

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010619	Ammonia-N	0.0976	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010508	Ammonia-N	0.595	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349379

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010631	Kjeldahl Nitrogen	0.558	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010710	Kjeldahl Nitrogen	5.03	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010499	NO2NO3-N	0.946	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349333

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010682	NO2NO3-N	0.437	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349381

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010711	Total-P	1.55	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349384

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010626	Total-P	1.81	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010627	O-Phosphate-P	0.358	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349142

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010514	O-Phosphate-P	0.133	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P349353

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010787	Total Alkalinity	0.845	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P349354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010501	Total Alkalinity	0.00756	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
Batch ID: P349357

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010787	Fluoride	0.511	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P349358

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010501	Fluoride	0.483	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P349364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010509	Organic Carbon	0.957	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P349457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010631	Organic Carbon	1.58	Spike	P	0 - 20

Reference Method: SM 5310 B-00 dissolved
Batch ID: P349364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010509	Organic Carbon	0.957	Spike	P	0 - 20

Reference Method: SM 5310 B-00 dissolved
Batch ID: P349457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010631	Organic Carbon	1.58	Spike	P	0 - 20

Quality Assurance Report

Precision

* 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: A85473

Included Lab Sample IDs: 2010684, 2010685, 2010686, 2010687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	96.1	P/P	90 - 110
O-Phosphate-P	98.8	97.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A85494

Included Lab Sample IDs: 2010680, 2010681

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A85536

Included Lab Sample IDs: 2010682, 2010683

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A85538

Included Lab Sample IDs: 2010682, 2010683

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: A85544

Included Lab Sample IDs: 2010698, 2010699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	99.7	98.8	P/P	90 - 110
Zinc	99.8	99.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A85546

Included Lab Sample IDs: 2010672, 2010673, 2010674, 2010675

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.8	P/P	90 - 110
Total Alkalinity	103	101	P/P	90 - 110
Total Alkalinity	99.5	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A85546

Included Lab Sample IDs: 2010672, 2010673, 2010674, 2010675

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A85549
Included Lab Sample IDs: 2010681

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	99.4	P/P	90 - 110

Reference Method: SM 5310 B-00 dissolved
Run ID: A85549
Included Lab Sample IDs: 2010677

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.0	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A85574
Included Lab Sample IDs: 2010680, 2010682, 2010683

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.9	96.6	P/P	90 - 110
Total-P	98.2	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A85584
Included Lab Sample IDs: 2010681

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

Reference Method: SM 5310 B-00
Run ID: A85590
Included Lab Sample IDs: 2010680, 2010682, 2010683

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.0	97.9	P/P	90 - 110

Reference Method: SM 5310 B-00 dissolved
Run ID: A85590
Included Lab Sample IDs: 2010676, 2010678, 2010679

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	99.0	P/P	90 - 110
Organic Carbon	99.0	97.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A85594
Included Lab Sample IDs: 2010682, 2010683

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.5	96.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A85615
Included Lab Sample IDs: 2010680, 2010681

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A85615

Included Lab Sample IDs: 2010680, 2010681

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.6	94.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A85621

Included Lab Sample IDs: 2010680, 2010681

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A85663

Included Lab Sample IDs: 2010696, 2010697

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A85664

Included Lab Sample IDs: 2010698, 2010699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	100	99.7	P/P	90 - 110
Cadmium	99.5	98.6	P/P	90 - 110
Chromium	97.0	95.6	P/P	90 - 110
Copper	99.8	99.1	P/P	90 - 110
Lead	96.3	95.2	P/P	90 - 110
Nickel	99.5	99.1	P/P	90 - 110
Silver	94.6	94.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A85706

Included Lab Sample IDs: 2010696, 2010697

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	97.9	96.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A85707

Included Lab Sample IDs: 2010696, 2010697

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	100	101	P/P	90 - 110
Cadmium	98.4	96.9	P/P	90 - 110
Copper	99.8	101	P/P	90 - 110
Lead	98.7	98.6	P/P	90 - 110
Nickel	101	101	P/P	90 - 110
Silver	101	100	P/P	90 - 110
Zinc	99.8	99.8	P/P	90 - 110

Quality Assurance Report

Calibration Verification

* 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 200.7 Rev. 4.4	Iron	104	101	99.7	101		0.980
	Iron	105	103	105			1.74
	Zinc	102	104	99.0	98.3		0.688
EPA 200.8 Rev. 5.4	Arsenic	99.3	104	102	102		0.0953
	Arsenic	98.0	103	105			1.14
	Cadmium	101	102	99.6	102		2.66
	Cadmium	98.1	92.4	92.7			0.338
	Chromium	95.7	95.3	96.1	96.0		0.193
	Chromium	95.2	83.1	85.8			3.29
	Copper	98.0	99.6	95.0	95.8		0.799
	Copper	95.9	91.8	92.6			0.740
	Lead	94.5	97.8	95.4	95.2		0.195
	Lead	95.8	109	108			0.795
	Nickel	100	101	96.7	98.1		1.41
	Nickel	99.6	90.8	90.8			0.0799
	Silver	97.3	98.0	96.4	96.1		0.379
	Silver	101	91.5	90.4			1.21
	Zinc	97.9	89.1	89.7			0.635
EPA 350.1 Rev. 2.0	Ammonia-N	99.9	102	102			0.0976
	Ammonia-N	102	103	102			0.595
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.8	99.7	98.8			0.558
	Kjeldahl Nitrogen	103	100	94.0			5.03
EPA 353.2 Rev. 2.0	NO2NO3-N	101	101	102			0.946
	NO2NO3-N	102	99.8				0.437
EPA 365.1 Rev. 2.0	Total-P	96.8	85.8	87.2			1.55
	Total-P	97.8	94.4	96.5			1.81
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.4	97.3	97.7			0.358
	O-Phosphate-P	102	97.1	97.3			0.133
SM 2320 B-97	Total Alkalinity	103				0.845	
	Total Alkalinity	102				0.0075	
SM 4500 F-C-97	Fluoride	97.4	101	100			0.511
	Fluoride	96.9	94.0	94.8			0.483
SM 5310 B-00	Organic Carbon	96.4	95.2	96.4			0.957
	Organic Carbon	92.8	94.6	92.2			1.58
SM 5310 B-00 dissolved	Organic Carbon	96.4	95.2	96.4			0.957
	Organic Carbon	92.8	94.6	92.2			1.58

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2010696, 2010697, 2010698, 2010699
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2010696, 2010697, 2010698, 2010699
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2010680, 2010681, 2010682, 2010683
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2010680, 2010681, 2010682, 2010683
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2010680, 2010681, 2010682, 2010683
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2010680, 2010681, 2010682, 2010683
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2010684, 2010685, 2010686, 2010687

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2010672, 2010673, 2010674, 2010675
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2010672, 2010673, 2010674, 2010675
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2010680, 2010681, 2010682, 2010683
SM 5310 B-00 dissolved / E31780	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	2010676, 2010677, 2010678, 2010679

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.7 Rev. 4.4	07/25/2018	07/26/2018 14:30	Elliott D. Healy	07/27/2018 16:46	Betina Topolski	2010698
	07/25/2018	07/26/2018 14:30	Elliott D. Healy	07/27/2018 16:58	Betina Topolski	2010699
	07/25/2018	08/01/2018 15:30	Elliott D. Healy	08/02/2018 16:58	Betina Topolski	2010696
	07/25/2018	08/01/2018 15:30	Elliott D. Healy	08/02/2018 17:10	Betina Topolski	2010697
EPA 200.8 Rev. 5.4	07/25/2018	07/26/2018 14:30	Elliott D. Healy	08/02/2018 23:29	Allison Taylor	2010698
	07/25/2018	07/26/2018 14:30	Elliott D. Healy	08/02/2018 23:38	Allison Taylor	2010699
	07/25/2018	08/01/2018 15:30	Elliott D. Healy	08/06/2018 16:03	Robert K Palmer	2010696
	07/25/2018	08/01/2018 15:30	Elliott D. Healy	08/06/2018 16:09	Robert K Palmer	2010697
	07/25/2018	08/01/2018 15:30	Elliott D. Healy	08/06/2018 20:35	Robert K Palmer	2010696
	07/25/2018	08/01/2018 15:30	Elliott D. Healy	08/06/2018 20:44	Robert K Palmer	2010697
EPA 350.1 Rev. 2.0	07/25/2018			07/27/2018 14:49	Ping Hua	2010682
	07/25/2018			07/27/2018 14:50	Ping Hua	2010683
	07/25/2018			08/01/2018 11:24	Ping Hua	2010680
	07/25/2018			08/01/2018 11:25	Ping Hua	2010681
EPA 351.2 Rev. 2.0	07/25/2018	07/30/2018 10:15	Adrian Shelby	07/31/2018 14:39	Joseph Suarez	2010682
	07/25/2018	07/30/2018 10:15	Adrian Shelby	07/31/2018 14:40	Joseph Suarez	2010683
	07/25/2018	07/30/2018 10:15	Adrian Shelby	08/01/2018 13:06	Joseph Suarez	2010680
	07/25/2018	07/30/2018 10:15	Adrian Shelby	08/01/2018 13:07	Joseph Suarez	2010681
EPA 353.2 Rev. 2.0	07/25/2018			07/26/2018 13:19	Lauren Bottorf	2010680
	07/25/2018			07/26/2018 13:20	Lauren Bottorf	2010681
	07/25/2018			07/27/2018 13:29	Lauren Bottorf	2010682
	07/25/2018			07/27/2018 13:38	Lauren Bottorf	2010683
EPA 365.1 Rev. 2.0	07/25/2018	07/30/2018 11:20	Sima Feizi	07/31/2018 08:51	Beverly Y. Sanders	2010680
	07/25/2018	07/30/2018 11:20	Sima Feizi	07/31/2018 09:31	Beverly Y. Sanders	2010682
	07/25/2018	07/30/2018 11:20	Sima Feizi	07/31/2018 09:32	Beverly Y. Sanders	2010683
	07/25/2018	07/30/2018 11:20	Sima Feizi	07/31/2018 13:40	Beverly Y. Sanders	2010681
EPA 365.1 Rev. 2.0 dissolved	07/25/2018			07/25/2018 17:21	Julia Storbeck	2010684
	07/25/2018			07/25/2018 17:22	Julia Storbeck	2010686
	07/25/2018			07/25/2018 17:23	Julia Storbeck	2010687
	07/25/2018			07/25/2018 18:00	Julia Storbeck	2010685
SM 2320 B-97	07/25/2018			07/27/2018 02:40	Dale L. Simmons	2010675
	07/25/2018			07/27/2018 06:12	Dale L. Simmons	2010674
	07/25/2018			07/27/2018 06:24	Dale L. Simmons	2010672
	07/25/2018			07/27/2018 11:00	Dale L. Simmons	2010673
SM 4500 F-C-97	07/25/2018			07/27/2018 02:40	Dale L. Simmons	2010675
	07/25/2018			07/27/2018 06:12	Dale L. Simmons	2010674
	07/25/2018			07/27/2018 08:09	Dale L. Simmons	2010672
	07/25/2018			07/27/2018 08:39	Dale L. Simmons	2010673
SM 5310 B-00	07/25/2018			07/28/2018 09:15	Megan Treadwell	2010681
	07/25/2018			07/30/2018 18:36	Megan Treadwell	2010680

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	07/25/2018			07/30/2018 18:50	Megan Treadwell	2010682
	07/25/2018			07/30/2018 19:03	Megan Treadwell	2010683
SM 5310 B-00 dissolved	07/25/2018			07/28/2018 08:35	Megan Treadwell	2010677
	07/25/2018			07/30/2018 17:15	Megan Treadwell	2010676
	07/25/2018			07/30/2018 18:09	Megan Treadwell	2010678
	07/25/2018			07/30/2018 18:23	Megan Treadwell	2010679