

Chemical Analysis Report

SW-DIST-2018-06-08-01

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

Event Description: **LVI Lakes**
Request ID: **RQ-2018-06-04-08**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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Temple Terrace, FL 33637-0926
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Date Certified: 28-JUN-2018 13:22



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 group are included in this report: 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: WILLIAMS LAKE

Collection Date/Time: 06/07/2018 13:35

Field ID: G1SW0071

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1998960	EPA 180.1 Rev. 2.0	Turbidity	1.8	A	NTU	P346620	
	EPA 300.0 Rev. 2.1	Chloride	34		mg Cl/L	P346891	
		Sulfate	10		mg SO4/L	P346894	
	SM 2120 B	Color (true)	23	A	PCU	P346606	
	SM 2320 B-97	Total Alkalinity	14		mg CaCO3/L	P347034	RPD
	SM 2540 C-97	TDS	111		mg/L	P346905	
	SM 2540 D-97	TSS	3	I	mg/L	P347121	
	SM 4500 F-C-97	Fluoride	0.081	I	mg F/L	P347038	
1998962	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P347107	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P347196	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P346917	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P346975	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P346718	
1998964	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P346608	

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: JAMES LAKE

Collection Date/Time: 06/07/2018 11:10

Field ID: G1SW0078

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1998961	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P346620	
	EPA 300.0 Rev. 2.1	Chloride	27		mg Cl/L	P346891	
		Sulfate	11		mg SO4/L	P346894	
	SM 2120 B	Color (true)	51		PCU	P346606	
	SM 2320 B-97	Total Alkalinity	16		mg CaCO3/L	P347034	RPD
	SM 2540 C-97	TDS	94	A	mg/L	P346905	
	SM 2540 D-97	TSS	4	IA	mg/L	P347121	
	SM 4500 F-C-97	Fluoride	0.070	I	mg F/L	P347038	
1998963	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P347107	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P347196	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P346917	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P346975	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P346718	
1998965	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P346608	

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: P346620

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346891

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346894

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347107

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347196

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346917

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: P346975

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346608

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

Reference Method: SM 2120 B
Batch ID: P346606

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P347034

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

Reference Method: SM 2540 C-97
Batch ID: P346905

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P347121

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P347038

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P346718

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346891

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346894

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347107

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347196

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346917

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: P346975

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346608

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

Reference Method: SM 2320 B-97
Batch ID: P347034

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P347038

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.1		P	91 - 105

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P346718

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346891

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1998789	Chloride	94.6		P	90 - 110
1999065	Chloride	98.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346894

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1998789	Sulfate	94.4		P	90 - 110
1999065	Sulfate	99.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1998962	Ammonia-N	103	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347196

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1998962	Kjeldahl Nitrogen	95.1	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346917

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1998740	NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346975

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1998962	Total-P	97.6	97.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346608

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1998964	O-Phosphate-P	95.9	96.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P347038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000390	Fluoride	93.8	93.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P346718

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1998733	Organic Carbon	100	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P346620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1998960	Turbidity	12.1	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1998789	Chloride	1.30	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346894

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1998789	Sulfate	0.0844	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1998962	Ammonia-N	0.162	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347196

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1998962	Kjeldahl Nitrogen	2.35	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346917

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1998740	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1998962	Total-P	0.368	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346608

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1998964	O-Phosphate-P	0.312	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
 Batch ID: P346606

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1998960	Color (true)	1.24	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P347034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000390	Total Alkalinity	9.16	Sample	F	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P346905

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1998961	TDS	5.29	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P347038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000390	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
 Batch ID: P346718

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1998733	Organic Carbon	0.150	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: A84464

Included Lab Sample IDs: 1998960, 1998961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.2	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A84465

Included Lab Sample IDs: 1998964, 1998965

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	94.4	P/P	90 - 110
O-Phosphate-P	94.4	98.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A84466

Included Lab Sample IDs: 1998960, 1998961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A84498

Included Lab Sample IDs: 1998960, 1998961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	98.2	P/P	90 - 110
Sulfate	102	95.7	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A84511

Included Lab Sample IDs: 1998962, 1998963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	97.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84590

Included Lab Sample IDs: 1998962, 1998963

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

Reference Method: SM 2320 B-97

Run ID: A84646

Included Lab Sample IDs: 1998960, 1998961

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

Reference Method: SM 4500 F-C-97

Run ID: A84646

Included Lab Sample IDs: 1998960, 1998961

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

Reference Method: SM 4500 F-C-97

Run ID: A84646

Included Lab Sample IDs: 1998960, 1998961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A84675

Included Lab Sample IDs: 1998962, 1998963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	105	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84712

Included Lab Sample IDs: 1998962, 1998963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A84816

Included Lab Sample IDs: 1998962, 1998963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.8	95.9	P/P	90 - 110
Kjeldahl Nitrogen	95.9	94.9	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					12.1	
EPA 300.0 Rev. 2.1	Chloride	99.4	94.6	98.5		1.30	
	Sulfate	97.7	94.4	99.3		0.0844	
EPA 350.1 Rev. 2.0	Ammonia-N	107	103	102			0.162
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	95.1	99.0			2.35
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	99.0				0.0
EPA 365.1 Rev. 2.0	Total-P	99.6	97.6	97.2			0.368
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.1	95.9	96.2			0.312
SM 2120 B	Color (true)					1.24	
SM 2320 B-97	Total Alkalinity	100				9.16	
SM 2540 C-97	TDS					5.29	
SM 4500 F-C-97	Fluoride	98.1	93.8	93.8			0.0
SM 5310 B-00	Organic Carbon	98.2	100	100			0.150

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1998960, 1998961
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1998960, 1998961
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1998960, 1998961
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1998962, 1998963
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1998962, 1998963
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1998962, 1998963
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1998962, 1998963
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1998964, 1998965
SM 2120 B / E31780	True Color measured at 450 nm	1998960, 1998961
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1998960, 1998961
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1998960, 1998961
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	1998960, 1998961
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1998960, 1998961
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1998962, 1998963

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	06/08/2018			06/08/2018 15:48	Julia Storbeck	1998960, 1998961
EPA 300.0 Rev. 2.1	06/08/2018			06/14/2018 00:21	Lipi Saha	1998960
	06/08/2018			06/14/2018 00:33	Lipi Saha	1998961
EPA 350.1 Rev. 2.0	06/08/2018			06/18/2018 10:42	Ping Hua	1998962
	06/08/2018			06/18/2018 10:51	Ping Hua	1998963
EPA 351.2 Rev. 2.0	06/08/2018	06/20/2018 11:00	Adrian Shelby	06/22/2018 14:41	Tanya Welborn	1998962
	06/08/2018	06/20/2018 11:00	Adrian Shelby	06/22/2018 14:49	Tanya Welborn	1998963
EPA 353.2 Rev. 2.0	06/08/2018			06/14/2018 12:51	Lauren Bottorf	1998962
	06/08/2018			06/14/2018 12:52	Lauren Bottorf	1998963
EPA 365.1 Rev. 2.0	06/08/2018	06/15/2018 11:35	Sima Feizi	06/20/2018 12:19	Lipi Saha	1998962
	06/08/2018	06/15/2018 11:35	Sima Feizi	06/20/2018 12:20	Lipi Saha	1998963
EPA 365.1 Rev. 2.0 dissolved	06/08/2018			06/08/2018 14:43	Megan Treadwell	1998964
	06/08/2018			06/08/2018 14:54	Megan Treadwell	1998965
SM 2120 B	06/08/2018			06/08/2018 14:59	Julia Storbeck	1998960
	06/08/2018			06/08/2018 15:03	Julia Storbeck	1998961
SM 2320 B-97	06/08/2018			06/16/2018 12:50	Dale L. Simmons	1998960
	06/08/2018			06/16/2018 13:01	Dale L. Simmons	1998961
SM 2540 C-97	06/08/2018			06/12/2018 17:08	Yijie Li	1998960, 1998961
SM 2540 D-97	06/08/2018			06/12/2018 15:45	Yijie Li	1998960, 1998961
SM 4500 F-C-97	06/08/2018			06/16/2018 12:50	Dale L. Simmons	1998960
	06/08/2018			06/16/2018 13:01	Dale L. Simmons	1998961
SM 5310 B-00	06/08/2018			06/12/2018 01:46	Megan Treadwell	1998962
	06/08/2018			06/12/2018 01:58	Megan Treadwell	1998963