

Chemical Analysis Report

WAS-SECT-2018-06-21-01

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

Event Description: **Ocklocknee, Burnt Mill, Lewis**
Request ID: **RQ-2018-05-14-19**
Customer: **WAS-SECT**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Curtis Musson

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 16-JUL-2018 12:17

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular background.

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: OCHLOCKONEE RIVER DOWNSTREAM OF
TOWER RD.**

Collection Date/Time: 06/21/2018 10:40

Field ID: G1WA0070

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002759	EPA 180.1 Rev. 2.0	Turbidity	33		NTU	P347296	
	EPA 300.0 Rev. 2.1	Chloride	7.0		mg Cl/L	P347633	
		Sulfate	3.6		mg SO4/L	P347636	
	SM 2120 B	Color (true)	92		PCU	P347282	
	SM 2320 B-97	Total Alkalinity	13		mg CaCO3/L	P347843	
	SM 2540 C-97	TDS	83		mg/L	P347651	
	SM 2540 D-97	TSS	13		mg/L	P347564	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P347847	
2002764	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P347553	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P348018	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.28		mg N/L	P347584	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P347713	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P347794	
2002769	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.086		mg P/L	P347290	

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: OCHLOCKONEE RIVER UPSTREAM OF
TOWER RD**

Collection Date/Time: 06/21/2018 11:00

Field ID: G1WA0069

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002760	EPA 180.1 Rev. 2.0	Turbidity	34		NTU	P347296	
	EPA 300.0 Rev. 2.1	Chloride	7.1		mg Cl/L	P347633	
		Sulfate	3.6		mg SO4/L	P347636	
	SM 2120 B	Color (true)	94		PCU	P347282	
	SM 2320 B-97	Total Alkalinity	13		mg CaCO3/L	P347843	
	SM 2540 C-97	TDS	85		mg/L	P347651	
	SM 2540 D-97	TSS	13		mg/L	P347564	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P347847	
2002765	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P347553	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P348018	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P347584	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P347713	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P347794	
2002770	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.086		mg P/L	P347290	

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: OCHLOCKONEE RIVER UPSTREAM OF US 90 Collection Date/Time: 06/21/2018 09:50

Field ID: G1WA0068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002761	EPA 180.1 Rev. 2.0	Turbidity	25		NTU	P347296	
	EPA 300.0 Rev. 2.1	Chloride	7.8		mg Cl/L	P347633	
		Sulfate	4.2		mg SO4/L	P347636	
	SM 2120 B	Color (true)	84		PCU	P347282	
	SM 2320 B-97	Total Alkalinity	15		mg CaCO3/L	P347843	
	SM 2540 C-97	TDS	84		mg/L	P347651	
	SM 2540 D-97	TSS	11		mg/L	P347564	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P347847	
2002766	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P347553	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P348018	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.29		mg N/L	P347584	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P347713	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P347795	
2002771	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.086		mg P/L	P347290	

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: OCHLOCKONEE RIVER DOWNSTREAM OF
TOWER RD.**

Collection Date/Time: 06/21/2018 10:40

Field ID: G1WA0070

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002784	EPA 200.7 Rev. 4.4	Calcium	5.17		mg/L	P347444	
		Iron	2.62E+03		ug/L	P347444	
		Magnesium	2.56		mg/L	P347444	
		Potassium	2.6		mg/L	P347444	
		Sodium	4.3		mg/L	P347444	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P347444	
		Arsenic	1.51		ug/L	P347444	
		Cadmium	0.020	U	ug/L	P347444	
		Chromium	1.8		ug/L	P347444	
		Copper	1.14		ug/L	P347444	
		Lead	1.03		ug/L	P347444	
		Nickel	0.70	I	ug/L	P347444	
		Silver	0.010	U	ug/L	P347444	

Ref. Method and Comment:

EPA 200.8 Rev. 5.4: The lead result was confirmed on 07/11/2018.

**Sample Location: OCHLOCKONEE RIVER UPSTREAM OF
TOWER RD**

Collection Date/Time: 06/21/2018 11:00

Field ID: G1WA0069

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002785	EPA 200.7 Rev. 4.4	Calcium	5.19		mg/L	P347444	
		Iron	2.70E+03		ug/L	P347444	
		Magnesium	2.59		mg/L	P347444	
		Potassium	2.6		mg/L	P347444	
		Sodium	4.3		mg/L	P347444	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P347444	
		Arsenic	1.53		ug/L	P347444	
		Cadmium	0.020	U	ug/L	P347444	
		Chromium	1.8		ug/L	P347444	
		Copper	1.13		ug/L	P347444	
		Lead	1.04		ug/L	P347444	
		Nickel	0.70	I	ug/L	P347444	
		Silver	0.010	U	ug/L	P347444	

Ref. Method and Comment:
EPA 200.8 Rev. 5.4: The lead result was confirmed on 07/11/2018.

Sample Location: OCHLOCKONEE RIVER UPSTREAM OF US 90 Collection Date/Time: 06/21/2018 09:50

Field ID: G1WA0068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002786	EPA 200.7 Rev. 4.4	Calcium	5.73		mg/L	P347444	
		Iron	1.83E+03		ug/L	P347444	
		Magnesium	2.77		mg/L	P347444	
		Potassium	2.5		mg/L	P347444	
		Sodium	4.8		mg/L	P347444	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P347444	
		Arsenic	1.30		ug/L	P347444	
		Cadmium	0.020	U	ug/L	P347444	
		Chromium	0.83	I	ug/L	P347444	
		Copper	0.85		ug/L	P347444	
		Lead	0.64		ug/L	P347444	
		Nickel	0.44	I	ug/L	P347444	
		Silver	0.010	U	ug/L	P347444	

Ref. Method and Comment:
 EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 07/09/2018.

Sample Location: BURNT MILL CREEK UPSTREAM OF US 27

Collection Date/Time: 06/21/2018 08:00

Field ID: G1WA0067

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002762	EPA 180.1 Rev. 2.0	Turbidity	3.3	A	NTU	P347297	
	EPA 300.0 Rev. 2.1	Chloride	4.9		mg Cl/L	P347633	
		Sulfate	0.86		mg SO4/L	P347636	
	SM 2120 B	Color (true)	96		PCU	P347281	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P347844	
	SM 2540 C-97	TDS	53		mg/L	P347651	
	SM 2540 D-97	TSS	2	U	mg/L	P347564	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P347848	
2002767	EPA 350.1 Rev. 2.0	Ammonia-N	0.042		mg N/L	P347553	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39		mg N/L	P348018	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P347584	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P347713	
	SM 5310 B-00	Organic Carbon	7.8		mg C/L	P347795	
2002772	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.10		mg P/L	P347290	

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: LEWIS CREEK

Collection Date/Time: 06/21/2018 11:45

Field ID: G1WA0075

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002763	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P347297	
	EPA 300.0 Rev. 2.1	Chloride	6.3		mg Cl/L	P347633	
		Sulfate	0.30	I	mg SO4/L	P347636	
	SM 2120 B	Color (true)	74		PCU	P347281	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P347844	
	SM 2540 C-97	TDS	61		mg/L	P347651	
	SM 2540 D-97	TSS	4	I	mg/L	P347564	
	SM 4500 F-C-97	Fluoride	0.084	I	mg F/L	P347848	
2002768	EPA 350.1 Rev. 2.0	Ammonia-N	0.093		mg N/L	P347553	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P348019	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.076		mg N/L	P347584	
	EPA 365.1 Rev. 2.0	Total-P	0.051		mg P/L	P347713	
	SM 5310 B-00	Organic Carbon	9.7		mg C/L	P347795	
2002773	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.023		mg P/L	P347290	

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: P347296

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347297

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P347444

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: P347444

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347633

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347636

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347553

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348018

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348019

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347584

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347713

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347290

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

Reference Method: SM 2120 B
Batch ID: P347281

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P347282

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P347843

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

Reference Method: SM 2320 B-97
Batch ID: P347844

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P347651

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P347564

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P347847

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P347848

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P347794

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

Reference Method: SM 5310 B-00
Batch ID: P347795

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: P347444

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	104		P	85 - 115
Magnesium	109		P	85 - 115
Potassium	102		P	85 - 115
Sodium	104		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P347444

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	101		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	99.1		P	85 - 115
Copper	98.6		P	85 - 115
Lead	98.4		P	85 - 115
Nickel	100		P	85 - 115
Silver	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347633

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347636

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347553

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348018

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348019

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	90.4		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347584

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347713

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347290

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

Reference Method: SM 2320 B-97
Batch ID: P347843

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

Reference Method: SM 2320 B-97
Batch ID: P347844

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

Reference Method: SM 4500 F-C-97
Batch ID: P347847

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P347848

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P347794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.5		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P347795

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P347444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002397	Calcium	103		P	80 - 120
2002397	Iron	105		P	80 - 120
2002397	Magnesium	109		P	80 - 120
2002397	Potassium	105		P	80 - 120
2002397	Sodium	108		P	80 - 120
2002397	Zinc	99.6		P	80 - 120
2002399	Calcium	101		P	80 - 120
2002399	Iron	105	104	P/P	80 - 120
2002399	Magnesium	109	105	P/P	80 - 120
2002399	Potassium	103	102	P/P	80 - 120
2002399	Sodium	107	104	P/P	80 - 120
2002399	Zinc	101	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P347444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002397	Arsenic	101		P	80 - 120
2002397	Cadmium	102		P	80 - 120
2002397	Chromium	96.3		P	80 - 120
2002397	Copper	93.6		P	80 - 120
2002397	Lead	98.1		P	80 - 120
2002397	Nickel	96.2		P	80 - 120
2002397	Silver	102		P	80 - 120
2002399	Arsenic	101	100	P/P	80 - 120
2002399	Cadmium	103	101	P/P	80 - 120
2002399	Chromium	97.4	95.7	P/P	80 - 120
2002399	Copper	94.2	93.3	P/P	80 - 120
2002399	Lead	98.0	97.5	P/P	80 - 120
2002399	Nickel	97.1	95.8	P/P	80 - 120
2002399	Silver	101	101	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347633

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002586	Chloride	102		P	90 - 110
2002678	Chloride	99.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347636

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002586	Sulfate	102		P	90 - 110
2002678	Sulfate	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002767	Ammonia-N	95.1	91.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P348018

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002712	Kjeldahl Nitrogen	106	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P348019

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002825	Kjeldahl Nitrogen	90.6	94.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P347584

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002712	NO2NO3-N	99.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P347713

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002768	Total-P	93.9	93.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P347290

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002590	O-Phosphate-P	98.2	97.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P347847

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002468	Fluoride	96.8	97.3	P/P	91 - 105

Reference Method: SM 4500 F-C-97
 Batch ID: P347848

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002800	Fluoride	97.7	98.2	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P347794

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002588	Organic Carbon	98.3	99.2	P/P	85 - 115

Reference Method: SM 5310 B-00
 Batch ID: P347795

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002766	Organic Carbon	96.8	95.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002675	Turbidity	0.683	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002762	Turbidity	3.01	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P347444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002399	Calcium	1.34	Spike	P	0 - 20
2002399	Iron	1.21	Spike	P	0 - 20
2002399	Magnesium	2.10	Spike	P	0 - 20
2002399	Potassium	0.862	Spike	P	0 - 20
2002399	Sodium	1.38	Spike	P	0 - 20
2002399	Zinc	0.310	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P347444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002399	Arsenic	0.480	Spike	P	0 - 20
2002399	Cadmium	1.31	Spike	P	0 - 20
2002399	Chromium	1.70	Spike	P	0 - 20
2002399	Copper	0.927	Spike	P	0 - 20
2002399	Lead	0.538	Spike	P	0 - 20
2002399	Nickel	1.41	Spike	P	0 - 20
2002399	Silver	0.671	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002586	Chloride	2.15	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002586	Sulfate	1.33	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002767	Ammonia-N	2.33	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348018

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002712	Kjeldahl Nitrogen	5.20	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002825	Kjeldahl Nitrogen	1.90	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347584

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002712	NO2NO3-N	0.208	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347713

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002768	Total-P	0.0236	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002590	O-Phosphate-P	0.801	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P347281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002711	Color (true)	4.08	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P347282

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002586	Color (true)	1.52	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
 Batch ID: P347843

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002468	Total Alkalinity	1.01	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
 Batch ID: P347844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002800	Total Alkalinity	0.238	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P347651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002798	TDS	0.0	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P347847

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002468	Fluoride	0.472	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
 Batch ID: P347848

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002800	Fluoride	0.472	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
 Batch ID: P347794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002588	Organic Carbon	0.673	Spike	P	0 - 20

Reference Method: SM 5310 B-00
 Batch ID: P347795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002766	Organic Carbon	0.605	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: A84757

Included Lab Sample IDs: 2002759, 2002760, 2002761, 2002762, 2002763

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	102	P/P	90 - 115
Color (true)	103	103	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A84758

Included Lab Sample IDs: 2002769, 2002770, 2002771, 2002772, 2002773

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	99.8	P/P	90 - 110
O-Phosphate-P	99.8	98.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A84760

Included Lab Sample IDs: 2002759, 2002760, 2002761, 2002762, 2002763

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.5	P/P	95 - 105
Turbidity	99.5	99.0	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A84847

Included Lab Sample IDs: 2002759, 2002760, 2002761, 2002762, 2002763

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	99.9	P/P	90 - 110
Chloride	99.9	103	P/P	90 - 110
Sulfate	101	105	P/P	90 - 110
Sulfate	102	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A84850

Included Lab Sample IDs: 2002784, 2002785, 2002786

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A84852

Included Lab Sample IDs: 2002764, 2002765, 2002766, 2002767, 2002768

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.2	99.1	P/P	90 - 110
Ammonia-N	99.3	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84871

Included Lab Sample IDs: 2002764, 2002765, 2002766, 2002767, 2002768

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A84947

Included Lab Sample IDs: 2002784, 2002785, 2002786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	96.8	94.4	P/P	90 - 110
Cadmium	96.3	94.8	P/P	90 - 110
Chromium	96.2	93.9	P/P	90 - 110
Copper	95.8	93.4	P/P	90 - 110
Lead	95.4	94.6	P/P	90 - 110
Nickel	94.8	92.5	P/P	90 - 110
Silver	97.4	95.9	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A84954

Included Lab Sample IDs: 2002764, 2002765, 2002766, 2002767, 2002768

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	96.0	P/P	90 - 110
Organic Carbon	96.2	96.8	P/P	90 - 110
Organic Carbon	96.4	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84964

Included Lab Sample IDs: 2002764, 2002765, 2002766, 2002767

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	99.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A84969

Included Lab Sample IDs: 2002759, 2002760, 2002761, 2002762, 2002763

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	102	P/P	90 - 110
Total Alkalinity	102	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A84969

Included Lab Sample IDs: 2002759, 2002760, 2002761, 2002762, 2002763

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84978

Included Lab Sample IDs: 2002768

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A85079

Included Lab Sample IDs: 2002764, 2002765, 2002766, 2002767

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.0	93.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A85086

Included Lab Sample IDs: 2002768

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.3	97.1	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						0.683	
	Turbidity						3.01	
EPA 200.7 Rev. 4.4	Calcium	104	103	101				1.34
	Iron	104	105	105	104			1.21
	Magnesium	109	109	109	105			2.10
	Potassium	102	105	103	102			0.862
	Sodium	104	108	107	104			1.38
	Zinc	104	99.6	101	102			0.310
EPA 200.8 Rev. 5.4	Arsenic	101	101	101	100			0.480
	Cadmium	102	102	103	101			1.31
	Chromium	99.1	96.3	97.4	95.7			1.70
	Copper	98.6	93.6	94.2	93.3			0.927
	Lead	98.4	98.1	98.0	97.5			0.538
	Nickel	100	96.2	97.1	95.8			1.41
	Silver	103	102	101	101			0.671
EPA 300.0 Rev. 2.1	Chloride	100	102	99.7			2.15	
	Sulfate	102	102	99.9			1.33	
EPA 350.1 Rev. 2.0	Ammonia-N	103	95.1	91.0				2.33
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	93.1	106	98.8				5.20
	Kjeldahl Nitrogen	90.4	90.6	94.2				1.90
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	99.8					0.208
EPA 365.1 Rev. 2.0	Total-P	95.6	93.9	93.9				0.0236
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.0	98.2	97.3				0.801
SM 2120 B	Color (true)						4.08	
	Color (true)						1.52	
SM 2320 B-97	Total Alkalinity	103					1.01	
	Total Alkalinity	104					0.238	
SM 2540 C-97	TDS						0.0	
SM 4500 F-C-97	Fluoride	98.8	96.8	97.3				0.472
	Fluoride	98.8	97.7	98.2				0.472
SM 5310 B-00	Organic Carbon	97.5	98.3	99.2				0.673
	Organic Carbon	96.8	96.8	95.9				0.605

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2002759, 2002760, 2002761, 2002762, 2002763
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2002784, 2002785, 2002786
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2002784, 2002785, 2002786
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2002759, 2002760, 2002761, 2002762, 2002763
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2002759, 2002760, 2002761, 2002762, 2002763
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2002764, 2002765, 2002766, 2002767, 2002768
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2002764, 2002765, 2002766, 2002767, 2002768
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2002764, 2002765, 2002766, 2002767, 2002768
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2002764, 2002765, 2002766, 2002767, 2002768

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 dissolved / E31780 SM 2120 B / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L True Color measured at 450 nm	2002769, 2002770, 2002771, 2002772, 2002773 2002759, 2002760, 2002761, 2002762, 2002763
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2002759, 2002760, 2002761, 2002762, 2002763
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2002759, 2002760, 2002761, 2002762, 2002763
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2002759, 2002760, 2002761, 2002762, 2002763
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2002759, 2002760, 2002761, 2002762, 2002763
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2002764, 2002765, 2002766, 2002767, 2002768

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	06/21/2018			06/21/2018 17:00	William L. Brown IV	2002759, 2002760, 2002761, 2002762, 2002763
EPA 200.7 Rev. 4.4	06/21/2018	06/25/2018 14:00	Elliott D. Healy	06/26/2018 19:01	Betina Topolski	2002784
	06/21/2018	06/25/2018 14:00	Elliott D. Healy	06/26/2018 19:31	Betina Topolski	2002785
	06/21/2018	06/25/2018 14:00	Elliott D. Healy	06/26/2018 19:38	Betina Topolski	2002786
EPA 200.8 Rev. 5.4	06/21/2018	06/25/2018 14:00	Elliott D. Healy	06/29/2018 14:43	Robert K Palmer	2002784
	06/21/2018	06/25/2018 14:00	Elliott D. Healy	06/29/2018 14:52	Robert K Palmer	2002785
	06/21/2018	06/25/2018 14:00	Elliott D. Healy	06/29/2018 15:01	Robert K Palmer	2002786
EPA 300.0 Rev. 2.1	06/21/2018			06/26/2018 21:37	Lipi Saha	2002759
	06/21/2018			06/26/2018 21:49	Lipi Saha	2002760
	06/21/2018			06/26/2018 22:01	Lipi Saha	2002761
	06/21/2018			06/26/2018 22:13	Lipi Saha	2002762
	06/21/2018			06/26/2018 22:49	Lipi Saha	2002763
EPA 350.1 Rev. 2.0	06/21/2018			06/26/2018 11:36	Adrian Shelby	2002764
	06/21/2018			06/26/2018 11:37	Adrian Shelby	2002765
	06/21/2018			06/26/2018 11:39	Adrian Shelby	2002766
	06/21/2018			06/26/2018 11:40	Adrian Shelby	2002767
	06/21/2018			06/26/2018 11:51	Adrian Shelby	2002768
EPA 351.2 Rev. 2.0	06/21/2018	07/06/2018 11:15	Adrian Shelby	07/09/2018 11:39	Joseph Suarez	2002764
	06/21/2018	07/06/2018 11:15	Adrian Shelby	07/09/2018 11:41	Joseph Suarez	2002765
	06/21/2018	07/06/2018 11:15	Adrian Shelby	07/09/2018 11:42	Joseph Suarez	2002766
	06/21/2018	07/06/2018 11:15	Adrian Shelby	07/09/2018 11:44	Joseph Suarez	2002767
	06/21/2018	07/06/2018 11:15	Adrian Shelby	07/09/2018 14:00	Joseph Suarez	2002768
EPA 353.2 Rev. 2.0	06/21/2018			06/27/2018 11:20	Lauren Bottorf	2002764
	06/21/2018			06/27/2018 11:21	Lauren Bottorf	2002765
	06/21/2018			06/27/2018 11:22	Lauren Bottorf	2002766
	06/21/2018			06/27/2018 11:23	Lauren Bottorf	2002767
	06/21/2018			06/27/2018 11:25	Lauren Bottorf	2002768
EPA 365.1 Rev. 2.0	06/21/2018	06/28/2018 11:45	Sima Feizi	06/29/2018 10:00	Beverly Y. Sanders	2002764
	06/21/2018	06/28/2018 11:45	Sima Feizi	06/29/2018 10:01	Beverly Y. Sanders	2002765
	06/21/2018	06/28/2018 11:45	Sima Feizi	06/29/2018 10:02	Beverly Y. Sanders	2002766
	06/21/2018	06/28/2018 11:45	Sima Feizi	06/29/2018 10:03	Beverly Y. Sanders	2002767
	06/21/2018	06/28/2018 11:45	Sima Feizi	07/02/2018 17:06	Beverly Y. Sanders	2002768
EPA 365.1 Rev. 2.0 dissolved	06/21/2018			06/21/2018 16:00	Megan Treadwell	2002769
	06/21/2018			06/21/2018 16:01	Megan Treadwell	2002770
	06/21/2018			06/21/2018 16:02	Megan Treadwell	2002771
	06/21/2018			06/21/2018 16:07	Megan Treadwell	2002772
	06/21/2018			06/21/2018 16:08	Megan Treadwell	2002773
SM 2120 B	06/21/2018			06/21/2018 15:28	Tanya Welborn	2002762, 2002763
	06/21/2018			06/21/2018 15:34	Tanya Welborn	2002759

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B	06/21/2018			06/21/2018 15:35	Tanya Welborn	2002760
	06/21/2018			06/21/2018 15:36	Tanya Welborn	2002761
SM 2320 B-97	06/21/2018			07/02/2018 06:08	Dale L. Simmons	2002759
	06/21/2018			07/02/2018 06:18	Dale L. Simmons	2002760
	06/21/2018			07/02/2018 06:28	Dale L. Simmons	2002761
	06/21/2018			07/02/2018 08:52	Dale L. Simmons	2002762
	06/21/2018			07/02/2018 09:03	Dale L. Simmons	2002763
SM 2540 C-97	06/21/2018			06/22/2018 15:16	William L. Brown IV	2002759, 2002760, 2002761, 2002762, 2002763
SM 2540 D-97	06/21/2018			06/22/2018 15:16	William L. Brown IV	2002759, 2002760, 2002761, 2002762, 2002763
SM 4500 F-C-97	06/21/2018			07/02/2018 06:08	Dale L. Simmons	2002759
	06/21/2018			07/02/2018 06:18	Dale L. Simmons	2002760
	06/21/2018			07/02/2018 06:28	Dale L. Simmons	2002761
	06/21/2018			07/02/2018 08:52	Dale L. Simmons	2002762
	06/21/2018			07/02/2018 09:03	Dale L. Simmons	2002763
SM 5310 B-00	06/21/2018			06/29/2018 16:45	Megan Treadwell	2002765
	06/21/2018			06/29/2018 23:02	Megan Treadwell	2002764
	06/21/2018			06/29/2018 23:46	Megan Treadwell	2002766
	06/21/2018			06/30/2018 01:23	Megan Treadwell	2002767
	06/21/2018			06/30/2018 01:38	Megan Treadwell	2002768