

Chemical Analysis Report

SW-DIST-2019-04-24-01

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

Event Description: **Hunter, Wire, Beulah**
Request ID: **RQ-2019-04-22-19**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

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: 13-MAY-2019 11:29

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 by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Lake Wire West

Collection Date/Time: 04/23/2019 10:40

Field ID: G2SW0056

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080325	EPA 180.1 Rev. 2.0	Turbidity	9.2		NTU	P362802	
	EPA 300.0 Rev. 2.1	Chloride	4.6		mg Cl/L	P362963	
		Sulfate	0.46	I	mg SO4/L	P362967	
	SM 2120 B	Color (true)	15		PCU	P362806	
	SM 2320 B-97	Total Alkalinity	33		mg CaCO3/L	P363244	
	SM 2540 C-97	TDS	50		mg/L	P363469	
	SM 2540 D-97	TSS	12		mg/L	P363412	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P363250	
2080329	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P363037	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P362994	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363006	
	EPA 365.1 Rev. 2.0	Total-P	0.080		mg P/L	P362936	
	SM 5310 B-00	Organic Carbon	4.9		mg C/L	P362922	
2080333	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P362811	
2080345	EPA 200.7 Rev. 4.4	Barium	11.8		ug/L	P362867	
		Calcium	13.9		mg/L	P362867	
		Iron	110	I	ug/L	P362867	
		Magnesium	1.22		mg/L	P362867	
		Potassium	0.30	U	mg/L	P362867	
		Sodium	2.5		mg/L	P362867	
		Zinc	37		ug/L	P362867	
	EPA 200.8 Rev. 5.4	Aluminum	84		ug/L	P362867	
		Antimony	0.28		ug/L	P362867	
		Arsenic	1.46		ug/L	P362867	
		Boron**	24.3		ug/L	P362867	
		Cadmium	0.020	U	ug/L	P362867	
		Chromium	0.40	U	ug/L	P362867	
		Copper	0.91		ug/L	P362867	
		Lead	11.4		ug/L	P362867	
		Nickel	0.50	U	ug/L	P362867	
		Selenium	0.20	U	ug/L	P362867	
		Silver	0.010	U	ug/L	P362867	
		Thallium	0.10	U	ug/L	P362867	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable for one of two spiked samples because of high analyte concentration in the QC sample. The lead result was confirmed in the undigested sample on 05/03/2019.

Sample Location: Lake Hunter @ Center

Collection Date/Time: 04/23/2019 09:50

Field ID: G2SW0076

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080326	EPA 180.1 Rev. 2.0	Turbidity	17	A	NTU	P362802	
	EPA 300.0 Rev. 2.1	Chloride	12	A	mg Cl/L	P363121	
		Sulfate	1.4	A	mg SO4/L	P363122	
		Color (true)	14	A	PCU	P362809	
	SM 2120 B	Total Alkalinity	61		mg CaCO3/L	P363244	
	SM 2540 C-97	TDS	93		mg/L	P363469	
	SM 2540 D-97	TSS	40		mg/L	P363412	
	SM 4500 F-C-97	Fluoride	0.24		mg F/L	P363250	
2080330	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P363037	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.7		mg N/L	P362994	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363006	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P362936	
	SM 5310 B-00	Organic Carbon	7.6		mg C/L	P362922	
2080334	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P362837	
2080346	EPA 200.7 Rev. 4.4	Barium	6.3		ug/L	P362867	
		Calcium	24.0		mg/L	P362867	
		Iron	180		ug/L	P362867	
		Magnesium	2.35		mg/L	P362867	
		Potassium	1.4		mg/L	P362867	
		Sodium	7.2		mg/L	P362867	
		Zinc	5.0	U	ug/L	P362867	
		Aluminum	124		ug/L	P362867	
		Antimony	0.28		ug/L	P362867	
		Arsenic	0.52		ug/L	P362867	
	EPA 200.8 Rev. 5.4	Boron**	187		ug/L	P362867	
		Cadmium	0.020	U	ug/L	P362867	
		Chromium	0.40	U	ug/L	P362867	
		Copper	0.50	I	ug/L	P362867	
		Lead	0.79		ug/L	P362867	
		Nickel	0.50	U	ug/L	P362867	
		Selenium	0.20	U	ug/L	P362867	
		Silver	0.010	U	ug/L	P362867	
		Thallium	0.10	U	ug/L	P362867	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Lake Hunter North

Collection Date/Time: 04/23/2019 10:10

Field ID: G2SW0086

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080327	EPA 180.1 Rev. 2.0	Turbidity	18		NTU	P362802	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P363121	
		Sulfate	1.4		mg SO4/L	P363122	
		Color (true)	14		PCU	P362809	
	SM 2320 B-97	Total Alkalinity	60		mg CaCO3/L	P363358	
	SM 2540 C-97	TDS	85		mg/L	P363469	
	SM 2540 D-97	TSS	31		mg/L	P363412	
	SM 4500 F-C-97	Fluoride	0.23		mg F/L	P363362	
2080331	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P363038	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.6		mg N/L	P362994	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363006	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P362936	
	SM 5310 B-00	Organic Carbon	7.6		mg C/L	P362922	
2080335	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P362837	
2080347	EPA 200.7 Rev. 4.4	Barium	7.5		ug/L	P362867	
		Calcium	23.6		mg/L	P362867	
		Iron	160		ug/L	P362867	
		Magnesium	2.35		mg/L	P362867	
		Potassium	1.3		mg/L	P362867	
		Sodium	7.2		mg/L	P362867	
		Zinc	5.0	U	ug/L	P362867	
		Aluminum	126		ug/L	P362867	
		Antimony	0.27		ug/L	P362867	
		Arsenic	0.51		ug/L	P362867	
		Boron**	186		ug/L	P362867	
		Cadmium	0.020	U	ug/L	P362867	
		Chromium	0.40	U	ug/L	P362867	
	EPA 200.8 Rev. 5.4	Copper	0.53	I	ug/L	P362867	
		Lead	0.79		ug/L	P362867	
		Nickel	0.50	U	ug/L	P362867	
		Selenium	0.20	U	ug/L	P362867	
		Silver	0.010	U	ug/L	P362867	
		Thallium	0.10	U	ug/L	P362867	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Lake Beulah SW

Collection Date/Time: 04/23/2019 11:00

Field ID: G2SW0053

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080328	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P362802	
	EPA 300.0 Rev. 2.1	Chloride	4.3		mg Cl/L	P363121	
		Sulfate	3.1		mg SO4/L	P363122	
		Color (true)	11		PCU	P362806	
	SM 2320 B-97	Total Alkalinity	48		mg CaCO3/L	P363358	
	SM 2540 C-97	TDS	75		mg/L	P363469	
	SM 2540 D-97	TSS	2	I	mg/L	P363412	
	SM 4500 F-C-97	Fluoride	0.26		mg F/L	P363362	
2080332	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P363038	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P362995	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363006	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P362936	
	SM 5310 B-00	Organic Carbon	6.1		mg C/L	P362922	
2080336	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P362837	
2080348	EPA 200.7 Rev. 4.4	Barium	8.9		ug/L	P362867	
		Calcium	18.4		mg/L	P362867	
		Iron	36	I	ug/L	P362867	
		Magnesium	1.62		mg/L	P362867	
		Potassium	1.3		mg/L	P362867	
		Sodium	3.1		mg/L	P362867	
		Zinc	5.0	U	ug/L	P362867	
		Aluminum	23		ug/L	P362867	
		Antimony	0.17	I	ug/L	P362867	
		Arsenic	0.45		ug/L	P362867	
		Boron**	147		ug/L	P362867	
		Cadmium	0.020	U	ug/L	P362867	
		Chromium	0.40	U	ug/L	P362867	
		Copper	0.40	U	ug/L	P362867	
		Lead	0.20	U	ug/L	P362867	
		Nickel	0.50	U	ug/L	P362867	
		Selenium	0.20	U	ug/L	P362867	
		Silver	0.010	U	ug/L	P362867	
		Thallium	0.10	U	ug/L	P362867	
	EPA 200.8 Rev. 5.4						

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362802

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362867

Component	Result	Code	Units
Barium	1.0	U	ug/L
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: P362867

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362963

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362967

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363121

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363122

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363037

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363038

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362994

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362995

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363006

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362936

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362811

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362837

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P362806

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P362809

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P363244

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

Reference Method: SM 2320 B-97
Batch ID: P363358

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

Reference Method: SM 2540 C-97
Batch ID: P363469

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P363412

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P363250

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P363362

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P362922

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: P362867

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	96.9		P	85 - 115
Calcium	105		P	85 - 115
Iron	102		P	85 - 115
Magnesium	107		P	85 - 115
Potassium	98.3		P	85 - 115
Sodium	106		P	85 - 115
Zinc	95.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362867

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.8		P	85 - 115
Antimony	96.8		P	85 - 115
Arsenic	98.4		P	85 - 115
Boron	107		P	85 - 115
Cadmium	99.9		P	85 - 115
Chromium	94.8		P	85 - 115
Copper	98.9		P	85 - 115
Lead	94.6		P	85 - 115
Nickel	99.6		P	85 - 115
Selenium	95.6		P	85 - 115
Silver	101		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362963

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362967

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363121

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363122

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363037

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363038

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362994

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362995

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363006

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: P362936

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362811

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.3		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362837

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

Reference Method: SM 2120 B
Batch ID: P362806

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P362809

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P363244

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P363358

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P363250

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P363362

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P362922

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362867

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080348	Barium	97.0		P	80 - 120
2080348	Calcium	99.0		P	80 - 120
2080348	Iron	102		P	80 - 120
2080348	Magnesium	105		P	80 - 120
2080348	Potassium	101		P	80 - 120
2080348	Sodium	101		P	80 - 120
2080348	Zinc	96.6		P	80 - 120
2080487	Barium	98.1	97.0	P/P	80 - 120
2080487	Calcium	103	103	P/P	80 - 120
2080487	Iron	101	101	P/P	80 - 120
2080487	Magnesium	106	106	P/P	80 - 120
2080487	Potassium	103	101	P/P	80 - 120
2080487	Sodium	103	102	P/P	80 - 120
2080487	Zinc	95.8	95.2	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362867

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080348	Aluminum	101		P	80 - 120
2080348	Antimony	99.6		P	80 - 120
2080348	Arsenic	102		P	80 - 120
2080348	Cadmium	101		P	80 - 120
2080348	Chromium	96.6		P	80 - 120
2080348	Copper	102		P	80 - 120
2080348	Lead	97.6		P	80 - 120
2080348	Nickel	102		P	80 - 120
2080348	Selenium	98.9		P	80 - 120
2080348	Silver	104		P	80 - 120
2080348	Thallium	103		P	80 - 120
2080487	Aluminum	98.6	99.5	P/P	80 - 120
2080487	Antimony	96.3	96.9	P/P	80 - 120
2080487	Arsenic	98.5	98.6	P/P	80 - 120
2080487	Boron	107	107	P/P	80 - 120
2080487	Cadmium	99.2	98.9	P/P	80 - 120
2080487	Chromium	95.7	96.3	P/P	80 - 120
2080487	Copper	101	101	P/P	80 - 120
2080487	Lead	95.1	95.6	P/P	80 - 120
2080487	Nickel	99.9	101	P/P	80 - 120
2080487	Selenium	96.2	97.4	P/P	80 - 120
2080487	Silver	100	102	P/P	80 - 120
2080487	Thallium	100	101	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362963

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080178	Chloride	103		P	90 - 110
2080307	Chloride	104		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362967

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080178	Sulfate	104		P	90 - 110
2080307	Sulfate	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363121

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080326	Chloride	102		P	90 - 110
2080480	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363122

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080326	Sulfate	103		P	90 - 110
2080480	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080300	Ammonia-N	99.1	97.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080332	Ammonia-N	93.9	96.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363006

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080238	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362936

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080332	Total-P	105	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080333	O-Phosphate-P	95.9	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080336	O-Phosphate-P	97.1	99.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P363250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080052	Fluoride	98.9	98.9	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P363362

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081413	Fluoride	98.2	98.2	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P362922

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080237	Organic Carbon	105	109	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362802

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080326	Turbidity	2.31	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362867

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080487	Barium	1.10	Spike	P	0 - 20
2080487	Calcium	0.183	Spike	P	0 - 20
2080487	Iron	0.261	Spike	P	0 - 20
2080487	Magnesium	0.147	Spike	P	0 - 20
2080487	Potassium	1.67	Spike	P	0 - 20
2080487	Sodium	0.805	Spike	P	0 - 20
2080487	Zinc	0.627	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362867

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080487	Aluminum	0.749	Spike	P	0 - 20
2080487	Antimony	0.664	Spike	P	0 - 20
2080487	Arsenic	0.105	Spike	P	0 - 20
2080487	Boron	0.132	Spike	P	0 - 20
2080487	Cadmium	0.339	Spike	P	0 - 20
2080487	Chromium	0.674	Spike	P	0 - 20
2080487	Copper	0.623	Spike	P	0 - 20
2080487	Lead	0.531	Spike	P	0 - 20
2080487	Nickel	1.10	Spike	P	0 - 20
2080487	Selenium	1.21	Spike	P	0 - 20
2080487	Silver	1.43	Spike	P	0 - 20
2080487	Thallium	1.34	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080307	Chloride	1.59	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362967

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080307	Sulfate	1.92	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363121

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080326	Chloride	0.486	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080326	Sulfate	1.75	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080300	Ammonia-N	1.05	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080332	Ammonia-N	1.94	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080331	Kjeldahl Nitrogen	8.00	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362995

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080343	Kjeldahl Nitrogen	3.48	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363006

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080238	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362936

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080332	Total-P	1.31	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080333	O-Phosphate-P	1.58	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080336	O-Phosphate-P	2.04	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P362806

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080361	Color (true)	1.71	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P362809

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080326	Color (true)	1.23	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P363244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080052	Total Alkalinity	0.476	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P363358

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081413	Total Alkalinity	0.378	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P363469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080264	TDS	2.33	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P363250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080052	Fluoride	0.0	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P363362

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081413	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P362922

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080237	Organic Carbon	2.85	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90974

Included Lab Sample IDs: 2080325, 2080326, 2080327, 2080328

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

Reference Method: SM 2120 B

Run ID: A90975

Included Lab Sample IDs: 2080325, 2080326, 2080327, 2080328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	85 - 115
Color (true)	102	102	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90976

Included Lab Sample IDs: 2080333

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90987

Included Lab Sample IDs: 2080334, 2080335, 2080336

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	97.3	P/P	90 - 110
O-Phosphate-P	97.3	95.8	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A91035

Included Lab Sample IDs: 2080329, 2080330, 2080331, 2080332

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	104	106	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A91044

Included Lab Sample IDs: 2080345, 2080346, 2080347, 2080348

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	97.7	97.0	P/P	90 - 110
Calcium	101	99.4	P/P	90 - 110
Iron	100	98.4	P/P	90 - 110
Magnesium	100	98.8	P/P	90 - 110
Potassium	99.0	98.9	P/P	90 - 110
Sodium	101	99.2	P/P	90 - 110
Zinc	96.9	95.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A91050

Included Lab Sample IDs: 2080325

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A91050

Included Lab Sample IDs: 2080325

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A91059

Included Lab Sample IDs: 2080329, 2080330, 2080331, 2080332

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	105	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A91072

Included Lab Sample IDs: 2080329, 2080330, 2080331, 2080332

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A91075

Included Lab Sample IDs: 2080329, 2080330, 2080331

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A91076

Included Lab Sample IDs: 2080332

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A91098

Included Lab Sample IDs: 2080332

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.9	99.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A91105

Included Lab Sample IDs: 2080326, 2080327, 2080328

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A91107

Included Lab Sample IDs: 2080329, 2080330, 2080331

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: A91107

Included Lab Sample IDs: 2080329, 2080330, 2080331

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91110

Included Lab Sample IDs: 2080345, 2080346, 2080347, 2080348

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	99.4	P/P	90 - 110
Antimony	97.3	97.4	P/P	90 - 110
Arsenic	98.4	97.5	P/P	90 - 110
Boron	109	105	P/P	90 - 110
Cadmium	98.7	98.9	P/P	90 - 110
Chromium	97.7	99.7	P/P	90 - 110
Copper	99.2	99.2	P/P	90 - 110
Lead	95.9	96.0	P/P	90 - 110
Nickel	97.8	98.6	P/P	90 - 110
Selenium	98.8	97.7	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	94.3	94.1	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A91158

Included Lab Sample IDs: 2080325, 2080326

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

Reference Method: SM 4500 F-C-97

Run ID: A91158

Included Lab Sample IDs: 2080325, 2080326

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

Reference Method: SM 2320 B-97

Run ID: A91204

Included Lab Sample IDs: 2080327, 2080328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A91204

Included Lab Sample IDs: 2080327, 2080328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	98.1	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			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					2.31	
EPA 200.7 Rev. 4.4	Barium	96.9	97.0	98.1	97.0		1.10
	Calcium	105	99.0	103	103		0.183
	Iron	102	102	101	101		0.261
	Magnesium	107	105	106	106		0.147
	Potassium	98.3	101	103	101		1.67
	Sodium	106	101	103	102		0.805
	Zinc	95.5	96.6	95.8	95.2		0.627
EPA 200.8 Rev. 5.4	Aluminum	97.8	101	98.6	99.5		0.749
	Antimony	96.8	99.6	96.3	96.9		0.664
	Arsenic	98.4	102	98.5	98.6		0.105
	Boron	107	107	107			0.132
	Cadmium	99.9	101	99.2	98.9		0.339
	Chromium	94.8	96.6	95.7	96.3		0.674
	Copper	98.9	102	101	101		0.623
	Lead	94.6	97.6	95.1	95.6		0.531
	Nickel	99.6	102	99.9	101		1.10
	Selenium	95.6	98.9	96.2	97.4		1.21
	Silver	101	104	100	102		1.43
	Thallium	101	103	100	101		1.34
EPA 300.0 Rev. 2.1	Chloride	103	104	103		1.59	
	Chloride	101	102	103		0.486	
	Sulfate	103	103	104		1.92	
	Sulfate	101	103	103		1.75	
EPA 350.1 Rev. 2.0	Ammonia-N	98.3	99.1	97.8			1.05
	Ammonia-N	101	93.9	96.2			1.94
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108					8.00
	Kjeldahl Nitrogen	109					3.48
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	102			0.0
EPA 365.1 Rev. 2.0	Total-P	97.4	105	107			1.31
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.3	95.9	97.5			1.58
	O-Phosphate-P	105	97.1	99.1			2.04
SM 2120 B	Color (true)	99.5				1.71	
	Color (true)	103				1.23	
SM 2320 B-97	Total Alkalinity	101				0.476	
	Total Alkalinity	101				0.378	
SM 2540 C-97	TDS					2.33	
SM 4500 F-C-97	Fluoride	97.2	98.9	98.9			0.0
	Fluoride	97.1	98.2	98.2			0.0
SM 5310 B-00	Organic Carbon	103	105	109			2.85

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2080325, 2080326, 2080327, 2080328
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2080345, 2080346, 2080347, 2080348
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2080345, 2080346, 2080347, 2080348
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2080325, 2080326, 2080327, 2080328
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2080325, 2080326, 2080327, 2080328

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2080329, 2080330, 2080331, 2080332
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2080329, 2080330, 2080331, 2080332
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2080329, 2080330, 2080331, 2080332
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2080329, 2080330, 2080331, 2080332
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2080333, 2080334, 2080335, 2080336
SM 2120 B / E31780	True Color measured at 450 nm	2080325, 2080326, 2080327, 2080328
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2080325, 2080326, 2080327, 2080328
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2080325, 2080326, 2080327, 2080328
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2080325, 2080326, 2080327, 2080328
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2080325, 2080326, 2080327, 2080328
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2080329, 2080330, 2080331, 2080332

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	04/24/2019			04/24/2019 16:07	Adrian Shelby	2080325, 2080326, 2080327, 2080328
EPA 200.7 Rev. 4.4	04/24/2019	04/25/2019 16:50	Elliott D. Healy	04/26/2019 17:00	Betina Topolski	2080345
	04/24/2019	04/25/2019 16:50	Elliott D. Healy	04/26/2019 17:06	Betina Topolski	2080346
	04/24/2019	04/25/2019 16:50	Elliott D. Healy	04/26/2019 17:12	Betina Topolski	2080347
	04/24/2019	04/25/2019 16:50	Elliott D. Healy	04/26/2019 17:18	Betina Topolski	2080348
EPA 200.8 Rev. 5.4	04/24/2019	04/25/2019 16:50	Elliott D. Healy	04/30/2019 21:06	Robert K Palmer	2080345
	04/24/2019	04/25/2019 16:50	Elliott D. Healy	04/30/2019 21:16	Robert K Palmer	2080346
	04/24/2019	04/25/2019 16:50	Elliott D. Healy	04/30/2019 21:26	Robert K Palmer	2080347
	04/24/2019	04/25/2019 16:50	Elliott D. Healy	04/30/2019 21:36	Robert K Palmer	2080348
EPA 300.0 Rev. 2.1	04/24/2019			04/27/2019 06:15	Lipi Saha	2080325
	04/24/2019			04/29/2019 18:42	Jhamieka S. Greenwood	2080326
	04/24/2019			04/29/2019 19:55	Jhamieka S. Greenwood	2080327
	04/24/2019			04/29/2019 20:07	Jhamieka S. Greenwood	2080328
EPA 350.1 Rev. 2.0	04/24/2019			04/29/2019 10:38	Ping Hua	2080329
	04/24/2019			04/29/2019 10:40	Ping Hua	2080330
	04/24/2019			04/29/2019 10:56	Ping Hua	2080332
	04/24/2019			04/29/2019 11:01	Ping Hua	2080331
EPA 351.2 Rev. 2.0	04/24/2019	04/29/2019 13:15	Adrian Shelby	04/30/2019 13:05	Joseph Suarez	2080332
	04/24/2019	04/29/2019 13:15	Adrian Shelby	04/30/2019 15:39	Joseph Suarez	2080329
	04/24/2019	04/29/2019 13:15	Adrian Shelby	04/30/2019 15:41	Joseph Suarez	2080330
	04/24/2019	04/29/2019 13:15	Adrian Shelby	04/30/2019 15:42	Joseph Suarez	2080331
EPA 353.2 Rev. 2.0	04/24/2019			04/29/2019 09:53	Beverly Y. Sanders	2080329
	04/24/2019			04/29/2019 09:54	Beverly Y. Sanders	2080330
	04/24/2019			04/29/2019 09:56	Beverly Y. Sanders	2080331
	04/24/2019			04/29/2019 09:57	Beverly Y. Sanders	2080332
EPA 365.1 Rev. 2.0	04/24/2019	04/26/2019 14:10	Sima Feizi	04/29/2019 13:36	Rosalyn Ballman	2080329
	04/24/2019	04/26/2019 14:10	Sima Feizi	04/29/2019 13:37	Rosalyn Ballman	2080330
	04/24/2019	04/26/2019 14:10	Sima Feizi	04/29/2019 13:38	Rosalyn Ballman	2080331
	04/24/2019	04/26/2019 14:10	Sima Feizi	04/29/2019 15:45	Rosalyn Ballman	2080332
EPA 365.1 Rev. 2.0 dissolved	04/24/2019			04/24/2019 16:17	Jhamieka S. Greenwood	2080333
	04/24/2019			04/24/2019 19:23	Jhamieka S. Greenwood	2080336
	04/24/2019			04/24/2019 19:36	Jhamieka S. Greenwood	2080334
	04/24/2019			04/24/2019 19:37	Jhamieka S. Greenwood	2080335
SM 2120 B	04/24/2019			04/24/2019 16:13	Mariam Hanna	2080325
	04/24/2019			04/24/2019 16:16	Mariam Hanna	2080328
	04/24/2019			04/24/2019 16:47	Mariam Hanna	2080326
	04/24/2019			04/24/2019 16:48	Mariam Hanna	2080327
SM 2320 B-97	04/24/2019			05/02/2019 02:54	Dale L. Simmons	2080326
	04/24/2019			05/02/2019 03:21	Dale L. Simmons	2080325
	04/24/2019			05/03/2019 21:57	Samantha Davila	2080327

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-97	04/24/2019			05/03/2019 22:09	Samantha Davila	2080328
SM 2540 C-97	04/24/2019			04/26/2019 14:16	Yijie Li	2080325, 2080326, 2080327, 2080328
SM 2540 D-97	04/24/2019			04/26/2019 14:16	Yijie Li	2080325, 2080326, 2080327, 2080328
SM 4500 F-C-97	04/24/2019			05/02/2019 02:54	Dale L. Simmons	2080326
	04/24/2019			05/02/2019 03:21	Dale L. Simmons	2080325
	04/24/2019			05/03/2019 21:57	Samantha Davila	2080327
	04/24/2019			05/03/2019 22:09	Samantha Davila	2080328
	04/24/2019			04/26/2019 08:19	Julia Storbeck	2080329
SM 5310 B-00	04/24/2019			04/26/2019 08:33	Julia Storbeck	2080330
	04/24/2019			04/26/2019 08:45	Julia Storbeck	2080331
	04/24/2019			04/26/2019 08:58	Julia Storbeck	2080332
	04/24/2019					