

Chemical Analysis Report

NE-DIST-2019-06-20-01

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

Event Description: **Nassau North**
Request ID: **RQ-2019-06-17-12**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

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: Liang Lin, Environmental Administrator

Date Certified: 12-JUL-2019 14:30

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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: Egans Creek at N. 14th

Collection Date/Time: 06/19/2019 13:05

Field ID: G4NE0290

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097153	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P366048	
	EPA 300.0	Bromide	76		mg Br/L	P366331	
	SM 2320 B-97	Total Alkalinity	122		mg CaCO3/L	P366362	
	SM 2540 D-97	TSS	30		mg/L	P366532	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P366365	
2097155	EPA 350.1 Rev. 2.0	Ammonia-N	0.035		mg N/L	P366280	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P366639	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P366316	
	EPA 365.1 Rev. 2.0	Total-P	0.065		mg P/L	P366180	
	SM 5310 B-00	Organic Carbon	3.5		mg C/L	P366240	
2097157	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P366045	

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: LOFTON CR @ A1A

Collection Date/Time: 06/19/2019 12:20

Field ID: 19020003

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097147	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P366048	
	EPA 300.0 Rev. 2.1	Chloride	930		mg Cl/L	P366534	
		Sulfate	130		mg SO4/L	P366535	
	SM 2120 B	Color (true)	85		PCU	P366088	
	SM 2320 B-97	Total Alkalinity	34		mg CaCO3/L	P366361	
	SM 2540 C-97	TDS	1.74E+03		mg/L	P366328	
	SM 2540 D-97	TSS	8	I	mg/L	P366185	
	SM 4500 F-C-97	Fluoride	0.092	I	mg F/L	P366364	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P366545	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P366593	
2097149	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366229	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P366251	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P366239	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.014		mg P/L	P366044	
	dissolved						

Ref. Method and Comment:

SM 2320 B-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Unnamed Branch above Alligator cr.

Collection Date/Time: 06/19/2019 09:40

Field ID: G4NE0288

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097144	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P366048	
	EPA 300.0 Rev. 2.1	Chloride	52		mg Cl/L	P366534	
		Sulfate	92		mg SO4/L	P366535	
		Color (true)	27		PCU	P366088	
	SM 2320 B-97	Total Alkalinity	121		mg CaCO3/L	P366361	
	SM 2540 C-97	TDS	372	A	mg/L	P366328	
	SM 2540 D-97	TSS	2	IA	mg/L	P366185	
	SM 4500 F-C-97	Fluoride	0.35		mg F/L	P366364	
2097145	EPA 350.1 Rev. 2.0	Ammonia-N	0.094		mg N/L	P366545	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P366593	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.36		mg N/L	P366229	
	EPA 365.1 Rev. 2.0	Total-P	0.26		mg P/L	P366251	
	SM 5310 B-00	Organic Carbon	7.4		mg C/L	P366239	
2097146	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.21		mg P/L	P366044	
2097167	EPA 200.7 Rev. 4.4	Barium	34.5		ug/L	P366035	
		Calcium	55.0		mg/L	P366035	
		Iron	150		ug/L	P366035	
		Magnesium	19.7		mg/L	P366035	
		Potassium	7.1		mg/L	P366035	
		Sodium	33.8		mg/L	P366035	
		Zinc	14	I	ug/L	P366035	
	EPA 200.8 Rev. 5.4	Aluminum	90		ug/L	P366035	
		Antimony	0.32		ug/L	P366035	
		Arsenic	0.64		ug/L	P366035	
		Boron**	123		ug/L	P366035	
		Cadmium	0.020	U	ug/L	P366035	
		Chromium	0.40	U	ug/L	P366035	
		Copper	0.84		ug/L	P366035	
		Lead	0.20	U	ug/L	P366035	
		Nickel	0.86	I	ug/L	P366035	
		Selenium	0.20	U	ug/L	P366035	
		Silver	0.010	U	ug/L	P366035	
		Thallium	0.10	U	ug/L	P366035	

Ref. Method and Comment:

SM 2320 B-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Creek draining former Hampton lake 100m above rd

Collection Date/Time: 06/19/2019 11:10

Field ID: G4NE0292

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097148	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P366048	
	EPA 300.0 Rev. 2.1	Chloride	11	A	mg Cl/L	P366534	
		Sulfate	7.9	A	mg SO4/L	P366535	
	SM 2120 B	Color (true)	170		PCU	P366088	
	SM 2320 B-97	Total Alkalinity	8.0		mg CaCO3/L	P366361	
	SM 2540 C-97	TDS	80		mg/L	P366328	
	SM 2540 D-97	TSS	2	I	mg/L	P366185	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P366364	
2097150	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P366546	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P366593	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366229	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P366251	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P366239	
2097152	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P366044	

Ref. Method and Comment:

SM 2320 B-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Egans Creek at N. 14th

Collection Date/Time: 06/19/2019 13:10

Field ID: G4NE0290 DUP

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097154	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P366048	
	EPA 300.0	Bromide	76		mg Br/L	P366331	
	SM 2320 B-97	Total Alkalinity	122		mg CaCO3/L	P366362	
	SM 2540 D-97	TSS	32		mg/L	P366532	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P366365	
2097156	EPA 350.1 Rev. 2.0	Ammonia-N	0.035		mg N/L	P366280	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P366639	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P366316	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P366180	
	SM 5310 B-00	Organic Carbon	3.4		mg C/L	P366240	
2097158	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.015		mg P/L	P366045	

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: Egans Creek at N. 14th

Collection Date/Time: 06/19/2019 13:15

Field ID: FB 06192019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097159	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P366048	
	EPA 300.0	Bromide	0.013	U	mg Br/L	P366634	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P366361	
	SM 2540 D-97	TSS	2	U	mg/L	P366185	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P366364	
2097160	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P366546	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P366593	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366229	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P366251	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P366239	
2097161	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P366044	

Ref. Method and Comment:

SM 2320 B-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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: P366048

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P366035

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: P366035

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
Batch ID: P366331

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0
Batch ID: P366634

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366534

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: P366535

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366280

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366545

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366546

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366593

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366639

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366229

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366316

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366180

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366251

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366044

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366045

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

Reference Method: SM 2120 B
Batch ID: P366088

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P366361

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

Reference Method: SM 2320 B-97
Batch ID: P366362

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

Reference Method: SM 2540 C-97
Batch ID: P366328

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P366185

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P366532

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P366364

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P366365

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P366239

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

Reference Method: SM 5310 B-00
Batch ID: P366240

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: P366035

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	100		P	85 - 115
Calcium	99.8		P	85 - 115
Iron	104		P	85 - 115
Magnesium	99.2		P	85 - 115
Potassium	99.1		P	85 - 115
Sodium	97.9		P	85 - 115
Zinc	97.7		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P366035

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.1		P	85 - 115
Antimony	97.7		P	85 - 115
Arsenic	101		P	85 - 115
Boron	100		P	85 - 115
Cadmium	97.8		P	85 - 115
Chromium	96.0		P	85 - 115
Copper	92.3		P	85 - 115
Lead	98.0		P	85 - 115
Nickel	99.3		P	85 - 115
Selenium	101		P	85 - 115
Silver	98.5		P	85 - 115
Thallium	99.6		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P366331

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

Reference Method: EPA 300.0
Batch ID: P366634

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366534

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366535

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.6		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366280

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366545

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366546

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366593

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366639

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366229

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366316

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: P366180

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366251

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366044

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366045

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.9		P	90 - 110

Reference Method: SM 2120 B
Batch ID: P366088

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.7		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P366361

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P366362

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P366364

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P366365

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P366239

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.1		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P366240

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.9		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P366035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096576	Barium	100	98.9	P/P	80 - 120
2096576	Calcium	96.6		P	80 - 120
2096576	Iron	105	104	P/P	80 - 120
2096576	Magnesium	100		P	80 - 120
2096576	Potassium	97.0		P	80 - 120
2096576	Sodium	95.6		P	80 - 120
2096576	Zinc	101	99.8	P/P	80 - 120
2096714	Barium	99.5		P	80 - 120
2096714	Calcium	99.6		P	80 - 120
2096714	Iron	103		P	80 - 120
2096714	Magnesium	102		P	80 - 120
2096714	Potassium	98.3		P	80 - 120
2096714	Sodium	98.7		P	80 - 120
2096714	Zinc	99.2		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P366035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096576	Aluminum	101	100	P/P	80 - 120
2096576	Antimony	102	103	P/P	80 - 120
2096576	Arsenic	105	106	P/P	80 - 120
2096576	Boron	103	104	P/P	80 - 120
2096576	Cadmium	102	103	P/P	80 - 120
2096576	Chromium	97.6	98.5	P/P	80 - 120
2096576	Copper	94.2	94.9	P/P	80 - 120
2096576	Lead	101	101	P/P	80 - 120
2096576	Nickel	99.6	101	P/P	80 - 120
2096576	Selenium	102	102	P/P	80 - 120
2096576	Silver	98.0	99.9	P/P	80 - 120
2096576	Thallium	104	104	P/P	80 - 120
2096714	Aluminum	100		P	80 - 120
2096714	Antimony	103		P	80 - 120
2096714	Arsenic	105		P	80 - 120
2096714	Boron	102		P	80 - 120
2096714	Cadmium	103		P	80 - 120
2096714	Chromium	99.1		P	80 - 120
2096714	Copper	95.8		P	80 - 120
2096714	Lead	102		P	80 - 120
2096714	Nickel	101		P	80 - 120
2096714	Selenium	103		P	80 - 120
2096714	Silver	100		P	80 - 120
2096714	Thallium	103		P	80 - 120

Reference Method: EPA 300.0
Batch ID: P366331

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096377	Bromide	94.8	94.6	P/P	90 - 110
2096414	Bromide	96.6		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P366634

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097263	Bromide	96.6	97.5	P/P	90 - 110
2098522	Bromide	94.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366534

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097148	Chloride	96.8		P	90 - 110
2097263	Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097148	Sulfate	96.0		P	90 - 110
2097263	Sulfate	99.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366280

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098072	Ammonia-N	105	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366545

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097107	Ammonia-N	103	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366546

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097176	Ammonia-N	102	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366593

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097145	Kjeldahl Nitrogen	104	95.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366639

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097360	Kjeldahl Nitrogen	97.8	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366229

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097106	NO2NO3-N	104	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366316

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096474	NO2NO3-N	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366180

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096701	Total-P	93.8	95.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097107	Total-P	108	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366044

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097178	O-Phosphate-P	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366045

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097015	O-Phosphate-P	96.0	96.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P366364

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096976	Fluoride	98.9	98.9	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P366365

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096586	Fluoride	97.1	97.8	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P366239

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096984	Organic Carbon	93.8	94.6	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P366240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097358	Organic Carbon	93.4	92.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P366048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097105	Turbidity	2.16	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P366035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096576	Barium	1.21	Spike	P	0 - 20
2096576	Calcium	0.861	Spike	P	0 - 20
2096576	Iron	1.09	Spike	P	0 - 20
2096576	Magnesium	0.671	Spike	P	0 - 20
2096576	Potassium	1.00	Spike	P	0 - 20
2096576	Sodium	1.05	Spike	P	0 - 20
2096576	Zinc	1.23	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P366035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096576	Aluminum	0.473	Spike	P	0 - 20
2096576	Antimony	0.545	Spike	P	0 - 20
2096576	Arsenic	1.06	Spike	P	0 - 20
2096576	Boron	0.126	Spike	P	0 - 20
2096576	Cadmium	0.889	Spike	P	0 - 20
2096576	Chromium	0.865	Spike	P	0 - 20
2096576	Copper	0.711	Spike	P	0 - 20
2096576	Lead	0.259	Spike	P	0 - 20
2096576	Nickel	1.35	Spike	P	0 - 20
2096576	Selenium	0.184	Spike	P	0 - 20
2096576	Silver	1.94	Spike	P	0 - 20
2096576	Thallium	0.0504	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P366331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096377	Bromide	0.133	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P366634

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097263	Bromide	0.904	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097148	Chloride	0.862	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097148	Sulfate	0.932	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366280

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098072	Ammonia-N	0.853	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366545

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097107	Ammonia-N	0.150	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097176	Ammonia-N	2.10	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366593

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097145	Kjeldahl Nitrogen	5.31	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097360	Kjeldahl Nitrogen	1.56	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366229

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097106	NO2NO3-N	1.94	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096474	NO2NO3-N	0.477	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366180

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096701	Total-P	1.81	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097107	Total-P	2.49	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366044

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097178	O-Phosphate-P	0.297	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366045

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097015	O-Phosphate-P	0.0779	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P366088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097103	Color (true)	2.18	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P366362

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096586	Total Alkalinity	0.299	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P366328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097144	TDS	1.08	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
 Batch ID: P366364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096976	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
 Batch ID: P366365

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096586	Fluoride	0.473	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P366239

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096984	Organic Carbon	0.661	Spike	P	0 - 20

Reference Method: SM 5310 B-00
 Batch ID: P366240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097358	Organic Carbon	0.674	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 365.1 Rev. 2.0 dissolved

Run ID: A92248

Included Lab Sample IDs: 2097146, 2097151, 2097152, 2097157, 2097158, 2097161

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.0	96.9	P/P	90 - 110
O-Phosphate-P	98.2	98.4	P/P	90 - 110
O-Phosphate-P	98.4	98.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A92250

Included Lab Sample IDs: 2097144, 2097147, 2097148, 2097153, 2097154, 2097159

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

Reference Method: SM 2120 B

Run ID: A92266

Included Lab Sample IDs: 2097144, 2097147, 2097148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115
Color (true)	101	101	P/P	90 - 115

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A92286

Included Lab Sample IDs: 2097167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	101	P/P	90 - 110
Calcium	103	103	P/P	90 - 110
Iron	103	104	P/P	90 - 110
Magnesium	102	103	P/P	90 - 110
Potassium	102	102	P/P	90 - 110
Sodium	99.2	99.8	P/P	90 - 110
Zinc	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92301

Included Lab Sample IDs: 2097145, 2097149, 2097150, 2097160

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

Reference Method: SM 5310 B-00

Run ID: A92321

Included Lab Sample IDs: 2097145, 2097149, 2097150, 2097155, 2097156, 2097160

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	94.6	P/P	90 - 110
Organic Carbon	96.4	95.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A92329

Included Lab Sample IDs: 2097167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.5	97.2	P/P	90 - 110
Antimony	99.3	99.2	P/P	90 - 110
Arsenic	100	99.5	P/P	90 - 110
Boron	98.4	97.3	P/P	90 - 110
Cadmium	98.4	97.4	P/P	90 - 110
Chromium	98.0	98.6	P/P	90 - 110
Lead	98.4	98.2	P/P	90 - 110
Nickel	98.2	98.0	P/P	90 - 110
Selenium	98.9	98.9	P/P	90 - 110
Silver	95.7	95.6	P/P	90 - 110
Thallium	95.0	93.4	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A92336

Included Lab Sample IDs: 2097144, 2097147, 2097148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.4	101	P/P	90 - 110
Sulfate	99.8	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92337

Included Lab Sample IDs: 2097155, 2097156

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92343

Included Lab Sample IDs: 2097155, 2097156

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92358

Included Lab Sample IDs: 2097155, 2097156

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92359

Included Lab Sample IDs: 2097145

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	105	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92365

Included Lab Sample IDs: 2097149, 2097150, 2097160

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	98.8	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A92370

Included Lab Sample IDs: 2097153, 2097154

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	104	105	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A92380

Included Lab Sample IDs: 2097144, 2097147, 2097148, 2097153, 2097154, 2097159

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110
Total Alkalinity	102	103	P/P	90 - 110
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A92380

Included Lab Sample IDs: 2097144, 2097147, 2097148, 2097153, 2097154, 2097159

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	100	P/P	90 - 110
Fluoride	100	100	P/P	90 - 110
Fluoride	99.1	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A92387

Included Lab Sample IDs: 2097167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	94.3	94.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92461

Included Lab Sample IDs: 2097145, 2097149, 2097150, 2097160

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	105	104	P/P	90 - 110
Ammonia-N	105	105	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A92511

Included Lab Sample IDs: 2097159

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	104	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92534

Included Lab Sample IDs: 2097145, 2097149, 2097150, 2097155, 2097156, 2097160

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.2	96.1	P/P	90 - 110
Kjeldahl Nitrogen	96.8	95.4	P/P	90 - 110
Kjeldahl Nitrogen	97.0	96.8	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
EPA 180.1 Rev. 2.0	Turbidity							2.16	
EPA 200.7 Rev. 4.4	Barium	100			100	98.9	99.5		1.21
	Calcium	99.8			96.6	99.6			0.861
	Iron	104			105	104	103		1.09
	Magnesium	99.2			100	102			0.671
	Potassium	99.1			97.0	98.3			1.00
	Sodium	97.9			95.6	98.7			1.05
	Zinc	97.7			101	99.8	99.2		1.23
EPA 200.8 Rev. 5.4	Aluminum	98.1			101	100	100		0.473
	Antimony	97.7			102	103	103		0.545
	Arsenic	101			105	106	105		1.06
	Boron	100			103	104	102		0.126
	Cadmium	97.8			102	103	103		0.889
	Chromium	96.0			97.6	98.5	99.1		0.865
	Copper	92.3			94.2	94.9	95.8		0.711
	Lead	98.0			101	101	102		0.259
	Nickel	99.3			99.6	101	101		1.35
	Selenium	101			102	102	103		0.184
	Silver	98.5			98.0	99.9	100		1.94
	Thallium	99.6			104	104	103		0.0504
EPA 300.0	Bromide	99.6			94.8	94.6	96.6		0.133
	Bromide	98.2			96.6	97.5	94.4		0.904
EPA 300.0 Rev. 2.1	Chloride	98.6			96.8	99.3		0.862	
	Sulfate	98.6			96.0	99.6		0.932	
EPA 350.1 Rev. 2.0	Ammonia-N	103			105	106			0.853
	Ammonia-N	102			103	104			0.150
	Ammonia-N	104			102	105			2.10
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	93.5			104	95.8			5.31
	Kjeldahl Nitrogen	103			97.8	100			1.56
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102			104	102			1.94
	NO ₂ NO ₃ -N	102			105	104			0.477
EPA 365.1 Rev. 2.0	Total-P	101			93.8	95.6			1.81
	Total-P	101			108	105			2.49
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.0			101	101			0.297
	O-Phosphate-P	97.9			96.0	96.1			0.0779
SM 2120 B	Color (true)	99.7						2.18	
SM 2320 B-97	Total Alkalinity	103							
	Total Alkalinity	103						0.299	
SM 2540 C-97	TDS							1.08	
SM 4500 F-C-97	Fluoride	97.0			98.9	98.9			0.0
	Fluoride	97.9			97.1	97.8			0.473
SM 5310 B-00	Organic Carbon	93.1			93.8	94.6			0.661
	Organic Carbon	93.9			93.4	92.5			0.674

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2097144, 2097147, 2097148, 2097153, 2097154, 2097159
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2097167
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2097167

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 300.0 / E31780	Bromide in aqueous matrices	2097153, 2097154, 2097159
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2097144, 2097147, 2097148
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2097144, 2097147, 2097148
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2097145, 2097149, 2097150, 2097155, 2097156, 2097160
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2097145, 2097149, 2097150, 2097155, 2097156, 2097160
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2097145, 2097149, 2097150, 2097155, 2097156, 2097160
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2097145, 2097149, 2097150, 2097155, 2097156, 2097160
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2097146, 2097151, 2097152, 2097157, 2097158, 2097161
SM 2120 B / E31780	True Color measured at 450 nm	2097144, 2097147, 2097148
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2097144, 2097147, 2097148, 2097153, 2097154, 2097159
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2097144, 2097147, 2097148
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2097144, 2097147, 2097148, 2097153, 2097154, 2097159
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2097144, 2097147, 2097148, 2097153, 2097154, 2097159
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2097145, 2097149, 2097150, 2097155, 2097156, 2097160

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	06/20/2019			06/20/2019 17:18	Adrian Shelby	2097144, 2097147, 2097148, 2097153, 2097154, 2097159
EPA 200.7 Rev. 4.4	06/20/2019	06/20/2019 17:40	Elliott D. Healy	06/21/2019 16:08	Betina Topolski	2097167
EPA 200.8 Rev. 5.4	06/20/2019	06/20/2019 17:40	Elliott D. Healy	06/25/2019 02:33	Robert K Palmer	2097167
	06/20/2019	06/20/2019 17:40	Elliott D. Healy	06/27/2019 08:29	Robert K Palmer	2097167
EPA 300.0	06/20/2019			06/25/2019 00:00	Lipi Saha	2097153
	06/20/2019			06/25/2019 00:17	Lipi Saha	2097154
	06/20/2019			07/01/2019 23:57	Jhamieka S. Greenwood	2097159
EPA 300.0 Rev. 2.1	06/20/2019			06/28/2019 12:31	Jhamieka S. Greenwood	2097148
	06/20/2019			06/28/2019 13:20	Jhamieka S. Greenwood	2097144
	06/20/2019			06/28/2019 13:32	Jhamieka S. Greenwood	2097147
EPA 350.1 Rev. 2.0	06/20/2019			06/25/2019 13:56	Ping Hua	2097155
	06/20/2019			06/25/2019 13:57	Ping Hua	2097156
	06/20/2019			06/27/2019 12:02	Ping Hua	2097145
	06/20/2019			06/27/2019 12:04	Ping Hua	2097149
	06/20/2019			06/27/2019 12:19	Ping Hua	2097160
	06/20/2019			06/27/2019 12:20	Ping Hua	2097150
EPA 351.2 Rev. 2.0	06/20/2019	07/02/2019 11:30	Adrian Shelby	07/03/2019 09:59	Joseph Suarez	2097145
	06/20/2019	07/02/2019 11:30	Adrian Shelby	07/03/2019 10:07	Joseph Suarez	2097149
	06/20/2019	07/02/2019 11:30	Adrian Shelby	07/03/2019 10:09	Joseph Suarez	2097150
	06/20/2019	07/02/2019 11:30	Adrian Shelby	07/03/2019 10:10	Joseph Suarez	2097160
	06/20/2019	07/02/2019 12:30	Adrian Shelby	07/03/2019 11:14	Joseph Suarez	2097155
	06/20/2019	07/02/2019 12:30	Adrian Shelby	07/03/2019 11:16	Joseph Suarez	2097156
EPA 353.2 Rev. 2.0	06/20/2019			06/24/2019 11:47	Beverly Y. Sanders	2097145
	06/20/2019			06/24/2019 11:49	Beverly Y. Sanders	2097149
	06/20/2019			06/24/2019 11:50	Beverly Y. Sanders	2097150
	06/20/2019			06/24/2019 11:51	Beverly Y. Sanders	2097160
	06/20/2019			06/26/2019 08:44	Beverly Y. Sanders	2097155
	06/20/2019			06/26/2019 08:45	Beverly Y. Sanders	2097156
EPA 365.1 Rev. 2.0	06/20/2019	06/24/2019 12:20	Sima Feizi	06/25/2019 16:01	Rosalyn Ballman	2097155
	06/20/2019	06/24/2019 12:20	Sima Feizi	06/25/2019 16:02	Rosalyn Ballman	2097156
	06/20/2019	06/25/2019 11:00	Lipi Saha	06/26/2019 09:21	Lipi Saha	2097145
	06/20/2019	06/25/2019 11:00	Lipi Saha	06/26/2019 10:55	Lipi Saha	2097149
	06/20/2019	06/25/2019 11:00	Lipi Saha	06/26/2019 10:56	Lipi Saha	2097150
	06/20/2019	06/25/2019 11:00	Lipi Saha	06/26/2019 10:57	Lipi Saha	2097160
EPA 365.1 Rev. 2.0 dissolved	06/20/2019			06/20/2019 17:16	Julia Storbeck	2097146
	06/20/2019			06/20/2019 17:24	Julia Storbeck	2097157
	06/20/2019			06/20/2019 17:25	Julia Storbeck	2097158
	06/20/2019			06/20/2019 17:27	Julia Storbeck	2097161
	06/20/2019			06/20/2019 17:35	Julia Storbeck	2097151

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0 dissolved SM 2120 B	06/20/2019			06/20/2019 17:36	Julia Storbeck	2097152
	06/20/2019			06/20/2019 17:06	Madeline Funaro	2097144
	06/20/2019			06/20/2019 17:07	Madeline Funaro	2097147
	06/20/2019			06/20/2019 17:19	Madeline Funaro	2097148
SM 2320 B-97	06/20/2019			06/26/2019 01:34	Dale L. Simmons	2097144
	06/20/2019			06/26/2019 01:46	Dale L. Simmons	2097148
	06/20/2019			06/26/2019 02:00	Dale L. Simmons	2097159
	06/20/2019			06/26/2019 03:05	Dale L. Simmons	2097147
SM 2540 C-97	06/20/2019			06/26/2019 07:07	Dale L. Simmons	2097153
	06/20/2019			06/26/2019 07:18	Dale L. Simmons	2097154
	06/20/2019			06/21/2019 14:16	Rosalyn Ballman	2097144, 2097147, 2097148
	06/20/2019			06/21/2019 14:16	Rosalyn Ballman	2097144, 2097147, 2097148, 2097159
SM 2540 D-97	06/20/2019			06/24/2019 14:22	Yijie Li	2097153, 2097154
	06/20/2019			06/26/2019 01:34	Dale L. Simmons	2097144
	06/20/2019			06/26/2019 01:46	Dale L. Simmons	2097148
	06/20/2019			06/26/2019 02:00	Dale L. Simmons	2097159
SM 4500 F-C-97	06/20/2019			06/26/2019 03:05	Dale L. Simmons	2097147
	06/20/2019			06/26/2019 04:37	Dale L. Simmons	2097153
	06/20/2019			06/26/2019 05:28	Dale L. Simmons	2097154
	06/20/2019			06/25/2019 01:09	Madeline Funaro	2097145
SM 5310 B-00	06/20/2019			06/25/2019 01:22	Madeline Funaro	2097149
	06/20/2019			06/25/2019 01:35	Madeline Funaro	2097150
	06/20/2019			06/25/2019 01:49	Madeline Funaro	2097160
	06/20/2019			06/25/2019 05:00	Madeline Funaro	2097155
	06/20/2019			06/25/2019 05:15	Madeline Funaro	2097156