

Chemical Analysis Report

NE-DIST-2018-02-28-01

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

Event Description: **Melrose lakes**
Request ID: **RQ-2018-02-26-15**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
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Jacksonville, FL 32256-7577
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 06-APR-2018 12:08



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: LAKE ROWAN CTR

Collection Date/Time: 02/27/2018 09:50

Field ID: 20030923

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1970502	EPA 180.1 Rev. 2.0	Turbidity	0.65		NTU	P340747	
	EPA 300.0 Rev. 2.1	Chloride	6.8		mg Cl/L	P340960	
		Sulfate	0.83		mg SO4/L	P340957	
	SM 2120 B	Color (true)	540		PCU	P340739	
	SM 2320 B-97	Total Alkalinity	1.3	I	mg CaCO3/L	P341120	
	SM 2540 C-97	TDS	103		mg/L	P341149	
	SM 2540 D-97	TSS	2	U	mg/L	P340932	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P341340	
1970505	EPA 350.1 Rev. 2.0	Ammonia-N	3.0		mg N/L	P341255	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	5.4		mg N/L	P340759	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P340775	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P340792	
	SM 5310 B-00	Organic Carbon	54		mg C/L	P340837	
1970508	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P340750	

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: ROSS LAKE CENTER

Collection Date/Time: 02/27/2018 11:15

Field ID: 20030454

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1970511	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P340747	
	EPA 300.0 Rev. 2.1	Chloride	9.4		mg Cl/L	P340960	
		Sulfate	0.54		mg SO4/L	P340957	
	SM 2120 B	Color (true)	660		PCU	P340739	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P341120	
	SM 2540 C-97	TDS	102		mg/L	P341149	
	SM 2540 D-97	TSS	2	U	mg/L	P340932	
	SM 4500 F-C-97	Fluoride	0.043	I	mg F/L	P341340	
1970514	EPA 350.1 Rev. 2.0	Ammonia-N	0.68		mg N/L	P341256	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.5		mg N/L	P340759	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P340775	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P340792	
	SM 5310 B-00	Organic Carbon	44		mg C/L	P340837	
1970517	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P340751	
1970555	EPA 200.7 Rev. 4.4	Calcium	2.20		mg/L	P340926	
		Iron	820		ug/L	P340926	
		Magnesium	1.50		mg/L	P340926	
		Potassium	2.1		mg/L	P340926	
		Sodium	4.9		mg/L	P340926	
		Zinc	5.0	U	ug/L	P340926	
	EPA 200.8 Rev. 5.4	Arsenic	1.03		ug/L	P341619	
		Cadmium	0.020	U	ug/L	P341619	
		Chromium	0.79	I	ug/L	P341619	

Field ID: 20030454

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1970555	EPA 200.8 Rev. 5.4	Copper	0.30	I	ug/L	P341619	
		Lead	0.54		ug/L	P341619	
		Nickel	0.64	I	ug/L	P341619	
		Silver	0.010	U	ug/L	P340926	

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: LAKE SUGGS CTR

Collection Date/Time: 02/27/2018 10:35

Field ID: 20030922

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1970512	EPA 180.1 Rev. 2.0	Turbidity	0.55		NTU	P340747	
	EPA 300.0 Rev. 2.1	Chloride	6.8		mg Cl/L	P340960	
		Sulfate	0.66		mg SO4/L	P340957	
	SM 2120 B	Color (true)	910		PCU	P340739	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P341244	
	SM 2540 C-97	TDS	135		mg/L	P341149	
	SM 2540 D-97	TSS	2	U	mg/L	P340933	
	SM 4500 F-C-97	Fluoride	0.047	I	mg F/L	P341247	
1970515	EPA 350.1 Rev. 2.0	Ammonia-N	1.5		mg N/L	P341256	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.7		mg N/L	P340759	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P340775	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P340792	
	SM 5310 B-00	Organic Carbon	62		mg C/L	P340837	
1970518	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P340751	
1970556	EPA 200.7 Rev. 4.4	Calcium	2.59		mg/L	P340926	
		Iron	1.05E+03		ug/L	P340926	
		Magnesium	1.91		mg/L	P340926	
		Potassium	3.3		mg/L	P340926	
		Sodium	4.3		mg/L	P340926	
		Zinc	5.0	U	ug/L	P340926	
	EPA 200.8 Rev. 5.4	Arsenic	1.38		ug/L	P341619	
		Cadmium	0.020	U	ug/L	P341619	
		Chromium	0.73	I	ug/L	P341619	
		Copper	0.28	I	ug/L	P341619	
		Lead	1.0		ug/L	P341619	
		Nickel	0.82		ug/L	P341619	
		Silver	0.010	U	ug/L	P340926	

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: LAKE ROSA CENTER

Collection Date/Time: 02/27/2018 12:45

Field ID: G2NE1130

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1970503	EPA 180.1 Rev. 2.0	Turbidity	0.70		NTU	P340747	

Field ID: G2NE1130

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1970503	EPA 300.0 Rev. 2.1	Chloride	9.1		mg Cl/L	P340960	
		Sulfate	7.8		mg SO4/L	P340957	
	SM 2120 B	Color (true)	5.8	I	PCU	P340739	
	SM 2320 B-97	Total Alkalinity	3.0		mg CaCO3/L	P341336	
	SM 2540 C-97	TDS	30		mg/L	P341149	
	SM 2540 D-97	TSS	2	U	mg/L	P340932	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P341527	
1970506	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P341256	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27		mg N/L	P340759	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P340775	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P340792	
	SM 5310 B-00	Organic Carbon	2.6		mg C/L	P340837	
1970509	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P340751	

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: GOOSE LAKE

Collection Date/Time: 02/27/2018 11:50

Field ID: 20030980

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1970504	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P340747	
	EPA 300.0 Rev. 2.1	Chloride	7.3		mg Cl/L	P340960	
		Sulfate	0.42	I	mg SO4/L	P340957	
	SM 2120 B	Color (true)	720		PCU	P340739	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P341120	
	SM 2540 C-97	TDS	101		mg/L	P341149	
	SM 2540 D-97	TSS	2	U	mg/L	P340932	
1970507	SM 4500 F-C-97	Fluoride	0.042	I	mg F/L	P341340	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.52		mg N/L	P341256	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.6		mg N/L	P340759	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P340775	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P340792	
1970510	SM 5310 B-00	Organic Carbon	46		mg C/L	P340837	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.10		mg P/L	P340751	

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: Field Blank

Collection Date/Time: 02/27/2018 10:05

Field ID: 123456

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1970513	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P340747	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P340960	
		Sulfate	0.20	U	mg SO4/L	P340957	
	SM 2120 B	Color (true)	2.5	U	PCU	P340740	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P341244	

Field ID: 123456

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1970513	SM 2540 C-97	TDS	15	U	mg/L	P341150	
	SM 2540 D-97	TSS	2	U	mg/L	P340933	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P341247	
1970516	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P341404	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P340759	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P340775	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P340794	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P340837	
1970519	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P340751	
1970557	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P340926	
		Iron	30	U	ug/L	P340926	
		Magnesium	0.040	U	mg/L	P340926	
		Potassium	0.30	U	mg/L	P340926	
		Sodium	0.50	U	mg/L	P340926	
		Zinc	5.0	U	ug/L	P340926	
	EPA 200.8 Rev. 5.4	Arsenic	0.050	U	ug/L	P341619	
		Cadmium	0.020	U	ug/L	P341619	
		Chromium	0.40	U	ug/L	P341619	
		Copper	0.20	U	ug/L	P341619	
		Lead	0.050	U	ug/L	P341619	
		Nickel	0.20	U	ug/L	P341619	
		Silver	0.010	U	ug/L	P340926	

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: P340747

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P340926

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: P340926

Component	Result	Code	Units
Silver	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P341619

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340957

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340960

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341255

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341256

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341404

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P340759

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340775

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P340792

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P340794

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340750

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340751

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

Reference Method: SM 2120 B
Batch ID: P340739

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P340740

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P341120

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

Reference Method: SM 2320 B-97
Batch ID: P341244

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

Reference Method: SM 2320 B-97
Batch ID: P341336

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: P341149

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P341150

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P340932

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P340933

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P341247

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P341340

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P341527

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P340837

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: P340926

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P340926

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	107		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	105		P	85 - 115
Sodium	103		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P340926

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Silver	98.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P341619

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	104		P	85 - 115
Cadmium	105		P	85 - 115
Chromium	98.8		P	85 - 115
Copper	100		P	85 - 115
Lead	101		P	85 - 115
Nickel	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340957

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340960

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341255

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341256

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341404

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341404

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: P340759

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340775

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P340792

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P340794

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340750

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340751

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

Reference Method: SM 2320 B-97
Batch ID: P341120

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.2		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P341244

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P341336

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.0		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P341247

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	93.6		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P341340

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

Reference Method: SM 4500 F-C-97
Batch ID: P341527

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P340837

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P340926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970525	Calcium	102		P	80 - 120
1970525	Iron	106		P	80 - 120
1970525	Magnesium	102		P	80 - 120
1970525	Potassium	103		P	80 - 120
1970525	Sodium	102		P	80 - 120
1970525	Zinc	99.5		P	80 - 120
1970841	Calcium	107		P	80 - 120
1970841	Iron	108	110	P/P	80 - 120
1970841	Magnesium	109		P	80 - 120
1970841	Potassium	103	106	P/P	80 - 120
1970841	Sodium	106		P	80 - 120
1970841	Zinc	102	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P340926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970525	Silver	97.9		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P340926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970841	Silver	99.8	98.3	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P341619

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970527	Arsenic	104	102	P/P	80 - 120
1970527	Cadmium	105	106	P/P	80 - 120
1970527	Chromium	99.9	98.5	P/P	80 - 120
1970527	Copper	97.0	100	P/P	80 - 120
1970527	Lead	103	103	P/P	80 - 120
1970527	Nickel	98.7	97.1	P/P	80 - 120
1970913	Arsenic	106		P	80 - 120
1970913	Cadmium	105		P	80 - 120
1970913	Chromium	98.5		P	80 - 120
1970913	Copper	101		P	80 - 120
1970913	Lead	105		P	80 - 120
1970913	Nickel	99.1		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340957

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970495	Sulfate	93.1		P	90 - 110
1970503	Sulfate	97.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340960

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970495	Chloride	93.5		P	90 - 110
1970503	Chloride	98.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970464	Ammonia-N	97.7	96.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341256

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970506	Ammonia-N	97.7	97.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341404

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971599	Ammonia-N	99.2	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P340759

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970506	Kjeldahl Nitrogen	105	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340775

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970498	NO2NO3-N	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P340792

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970506	Total-P	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P340794

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970712	Total-P	98.2	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340750

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970444	O-Phosphate-P	99.0	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340751

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970509	O-Phosphate-P	98.4	98.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P341247

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971272	Fluoride	95.1	96.0	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P341340

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970494	Fluoride	97.2	100	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P341527

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971311	Fluoride	96.0	96.0	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P340837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970428	Organic Carbon	97.2	98.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P340747

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970535	Turbidity	3.09	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P340926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970841	Calcium	0.282	Spike	P	0 - 20
1970841	Iron	1.08	Spike	P	0 - 20
1970841	Magnesium	0.255	Spike	P	0 - 20
1970841	Potassium	1.36	Spike	P	0 - 20
1970841	Sodium	0.198	Spike	P	0 - 20
1970841	Zinc	0.0450	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P340926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970841	Silver	1.46	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P341619

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970527	Arsenic	1.34	Spike	P	0 - 20
1970527	Cadmium	1.33	Spike	P	0 - 20
1970527	Chromium	1.42	Spike	P	0 - 20
1970527	Copper	3.37	Spike	P	0 - 20
1970527	Lead	0.461	Spike	P	0 - 20
1970527	Nickel	1.64	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340957

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970495	Sulfate	3.86	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340960

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970495	Chloride	1.30	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970464	Ammonia-N	0.927	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341256

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970506	Ammonia-N	0.506	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971599	Ammonia-N	1.40	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P340759

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970506	Kjeldahl Nitrogen	1.76	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340775

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970498	NO2NO3-N	0.477	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P340792

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970506	Total-P	1.77	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P340794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970712	Total-P	4.94	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340750

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970444	O-Phosphate-P	0.303	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970509	O-Phosphate-P	0.406	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P340739

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970597	Color (true)	4.43	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P340740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970592	Color (true)	0.276	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P341120

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970494	Total Alkalinity	0.600	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P341244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971272	Total Alkalinity	0.0945	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P341336

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971311	Total Alkalinity	0.476	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P341149

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970492	TDS	4.58	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P341150

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970535	TDS	1.98	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P341247

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971272	Fluoride	0.480	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P341340

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970494	Fluoride	2.42	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P341527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971311	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P340837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970428	Organic Carbon	1.43	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 300.0 Rev. 2.1
Run ID: A82322
Included Lab Sample IDs: 1970502, 1970503, 1970504, 1970511, 1970512, 1970513

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	97.0	P/P	90 - 110
Chloride	99.6	103	P/P	90 - 110
Sulfate	101	102	P/P	90 - 110
Sulfate	102	97.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A82342

Included Lab Sample IDs: 1970502, 1970503, 1970504, 1970511, 1970512, 1970513

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.9	99.9	P/P	85 - 115
Color (true)	99.1	100	P/P	85 - 115
Color (true)	99.9	99.1	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A82344

Included Lab Sample IDs: 1970502, 1970503, 1970504, 1970511, 1970512, 1970513

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A82346

Included Lab Sample IDs: 1970508, 1970509, 1970510, 1970517, 1970518, 1970519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	99.3	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A82353

Included Lab Sample IDs: 1970505, 1970506, 1970507, 1970514, 1970515, 1970516

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

Reference Method: SM 5310 B-00

Run ID: A82376

Included Lab Sample IDs: 1970505, 1970506, 1970507, 1970514, 1970515, 1970516

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.1	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A82393

Included Lab Sample IDs: 1970507, 1970514, 1970515

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A82396

Included Lab Sample IDs: 1970505, 1970506, 1970516

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A82413

Included Lab Sample IDs: 1970505, 1970506, 1970507, 1970514, 1970515, 1970516

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	101	P/P	90 - 110
Kjeldahl Nitrogen	104	101	P/P	90 - 110
Kjeldahl Nitrogen	96.2	99.1	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A82484

Included Lab Sample IDs: 1970502, 1970504, 1970511

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	98.6	P/P	90 - 110
Total Alkalinity	97.8	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A82511

Included Lab Sample IDs: 1970555, 1970556, 1970557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	99.0	100	P/P	90 - 110
Silver	99.7	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A82512

Included Lab Sample IDs: 1970555, 1970556, 1970557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	99.3	P/P	90 - 110
Calcium	101	100	P/P	95 - 105
Calcium	99.3	102	P/P	90 - 110
Iron	101	102	P/P	90 - 110
Iron	101	101	P/P	95 - 105
Iron	102	104	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Magnesium	102	104	P/P	90 - 110
Magnesium	102	101	P/P	95 - 105
Potassium	101	99.7	P/P	95 - 105
Potassium	101	102	P/P	90 - 110
Potassium	99.7	101	P/P	90 - 110
Sodium	100	102	P/P	90 - 110
Sodium	100	100	P/P	90 - 110
Sodium	101	100	P/P	95 - 105
Zinc	101	102	P/P	90 - 110
Zinc	101	99.7	P/P	95 - 105
Zinc	99.7	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A82513

Included Lab Sample IDs: 1970512, 1970513

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	98.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A82513

Included Lab Sample IDs: 1970512, 1970513

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.2	97.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A82515

Included Lab Sample IDs: 1970505, 1970506, 1970507, 1970514, 1970515

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	102	P/P	90 - 110
Ammonia-N	101	101	P/P	90 - 110
Ammonia-N	102	103	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A82543

Included Lab Sample IDs: 1970503

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.4	96.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A82543

Included Lab Sample IDs: 1970502, 1970504, 1970511

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	100	P/P	90 - 110
Fluoride	106	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A82558

Included Lab Sample IDs: 1970516

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

Reference Method: SM 4500 F-C-97

Run ID: A82604

Included Lab Sample IDs: 1970503

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	99.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A82829

Included Lab Sample IDs: 1970555, 1970556, 1970557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	101	99.7	P/P	90 - 110
Arsenic	99.7	98.7	P/P	90 - 110
Cadmium	98.0	96.9	P/P	90 - 110
Cadmium	99.2	98.0	P/P	90 - 110
Chromium	93.2	91.9	P/P	90 - 110
Chromium	93.7	93.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A82829

Included Lab Sample IDs: 1970555, 1970556, 1970557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	96.0	98.1	P/P	90 - 110
Lead	98.1	93.4	P/P	90 - 110
Nickel	97.2	97.5	P/P	90 - 110
Nickel	98.3	97.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A82847

Included Lab Sample IDs: 1970555, 1970556, 1970557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	101	98.5	P/P	90 - 110
Copper	98.5	99.9	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						3.09	
EPA 200.7 Rev. 4.4	Calcium	103	102	107				0.282
	Iron	107	106	108	110			1.08
	Magnesium	103	102	109				0.255
	Potassium	105	103	103	106			1.36
	Sodium	103	102	106				0.198
	Zinc	101	99.5	102	102			0.0450
EPA 200.8 Rev. 5.4	Arsenic	104	104	102	106			1.34
	Cadmium	105	105	106	105			1.33
	Chromium	98.8	99.9	98.5	98.5			1.42
	Copper	100	97.0	100	101			3.37
	Lead	101	103	103	105			0.461
	Nickel	101	98.7	97.1	99.1			1.64
	Silver	98.4	97.9	99.8	98.3			1.46
EPA 300.0 Rev. 2.1	Chloride	97.9	93.5	98.4			1.30	
	Sulfate	97.7	93.1	97.7			3.86	
EPA 350.1 Rev. 2.0	Ammonia-N	97.8	97.7	96.6				0.927
	Ammonia-N	100	97.7	97.2				0.506
	Ammonia-N	101	99.2	101				1.40
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	105	102				1.76
EPA 353.2 Rev. 2.0	NO2NO3-N	103	105	104				0.477
EPA 365.1 Rev. 2.0	Total-P	105	102	100				1.77
	Total-P	107	98.2	105				4.94
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.4	99.0	98.7				0.303
	O-Phosphate-P	101	98.4	98.8				0.406
SM 2120 B	Color (true)						4.43	
	Color (true)						0.276	
SM 2320 B-97	Total Alkalinity	99.2					0.600	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
SM 2320 B-97	Total Alkalinity	102				0.0945	
	Total Alkalinity	99.0				0.476	
SM 2540 C-97	TDS					4.58	
	TDS					1.98	
SM 4500 F-C-97	Fluoride	93.6	95.1	96.0			0.480
	Fluoride	97.1	97.2	100			2.42
	Fluoride	97.6	96.0	96.0			0.0
SM 5310 B-00	Organic Carbon	93.4	97.2	98.6			1.43

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1970502, 1970503, 1970504, 1970511, 1970512, 1970513
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1970555, 1970556, 1970557
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1970555, 1970556, 1970557
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1970502, 1970503, 1970504, 1970511, 1970512, 1970513
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1970502, 1970503, 1970504, 1970511, 1970512, 1970513
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1970505, 1970506, 1970507, 1970514, 1970515, 1970516
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1970505, 1970506, 1970507, 1970514, 1970515, 1970516
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1970505, 1970506, 1970507, 1970514, 1970515, 1970516
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1970505, 1970506, 1970507, 1970514, 1970515, 1970516
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1970508, 1970509, 1970510, 1970517, 1970518, 1970519
SM 2120 B / E31780	True Color measured at 450 nm	1970502, 1970503, 1970504, 1970511, 1970512, 1970513
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1970502, 1970503, 1970504, 1970511, 1970512, 1970513
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1970502, 1970503, 1970504, 1970511, 1970512, 1970513
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1970502, 1970503, 1970504, 1970511, 1970512, 1970513
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1970502, 1970503, 1970504, 1970511, 1970512, 1970513
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1970505, 1970506, 1970507, 1970514, 1970515, 1970516

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	02/28/2018			02/28/2018 14:59	DeAsia Armster	1970502, 1970503, 1970504, 1970511, 1970512, 1970513
EPA 200.7 Rev. 4.4	02/28/2018	03/05/2018	Elliott D. Healy	03/08/2018	Betina Topolski	1970555, 1970556, 1970557
EPA 200.8 Rev. 5.4	02/28/2018	03/05/2018	Elliott D. Healy	03/08/2018	Nadine Brooks	1970555, 1970556, 1970557
	02/28/2018	03/15/2018	Elliott D. Healy	03/23/2018	Robert K Palmer	1970555, 1970556, 1970557
	02/28/2018	03/15/2018	Elliott D. Healy	03/26/2018	Robert K Palmer	1970555, 1970556, 1970557
EPA 300.0 Rev. 2.1	02/28/2018			03/02/2018	Julia Storbeck	1970502, 1970503, 1970504, 1970511, 1970512, 1970513
EPA 350.1 Rev. 2.0	02/28/2018			03/08/2018	Ping Hua	1970505, 1970506, 1970507, 1970514, 1970515
	02/28/2018			03/09/2018	Ping Hua	1970516
EPA 351.2 Rev. 2.0	02/28/2018	03/01/2018	Adrian Shelby	03/02/2018	Joseph Suarez	1970505, 1970506, 1970507, 1970514, 1970515, 1970516
EPA 353.2 Rev. 2.0	02/28/2018			03/01/2018	Beverly Y. Sanders	1970505, 1970506, 1970507, 1970514, 1970515, 1970516
EPA 365.1 Rev. 2.0	02/28/2018	03/01/2018	Sima Feizi	03/02/2018	Lipi Saha	1970505, 1970506, 1970507, 1970514, 1970515, 1970516
EPA 365.1 Rev. 2.0 dissolved	02/28/2018			02/28/2018 14:59	Megan Treadwell	1970509
	02/28/2018			02/28/2018 15:10	Megan Treadwell	1970508
	02/28/2018			02/28/2018 15:11	Megan Treadwell	1970510, 1970517
	02/28/2018			02/28/2018 15:12	Megan Treadwell	1970518
	02/28/2018			02/28/2018 15:13	Megan Treadwell	1970519
SM 2120 B	02/28/2018			02/28/2018 16:00	Tanya Welborn	1970503
	02/28/2018			02/28/2018 16:10	Tanya Welborn	1970513
	02/28/2018			02/28/2018 16:13	Tanya Welborn	1970502
	02/28/2018			02/28/2018 16:14	Tanya Welborn	1970504
	02/28/2018			02/28/2018 16:15	Tanya Welborn	1970511
	02/28/2018			02/28/2018 16:17	Tanya Welborn	1970512
SM 2320 B-97	02/28/2018			03/07/2018	Dale L. Simmons	1970502, 1970504, 1970511
	02/28/2018			03/08/2018	Dale L. Simmons	1970512, 1970513
	02/28/2018			03/09/2018	Lauren Bottorf	1970503
SM 2540 C-97	02/28/2018			03/02/2018	DeAsia Armster	1970502, 1970503, 1970504, 1970511, 1970512, 1970513
SM 2540 D-97	02/28/2018			03/02/2018	DeAsia Armster	1970502, 1970503, 1970504, 1970511, 1970512, 1970513
SM 4500 F-C-97	02/28/2018			03/08/2018	Dale L. Simmons	1970512, 1970513
	02/28/2018			03/10/2018	Lauren Bottorf	1970502, 1970504, 1970511
	02/28/2018			03/14/2018	Dale L. Simmons	1970503
SM 5310 B-00	02/28/2018			03/01/2018	Megan Treadwell	1970505, 1970506, 1970507, 1970514, 1970515, 1970516