

Chemical Analysis Report

NW-DIST-2017-11-15-01

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

Event Description: **Dune Lakes Run WBID 1037 959,B,G,H,J**

Request ID: **RQ-2017-11-06-36**

Customer: **NW-DIST**

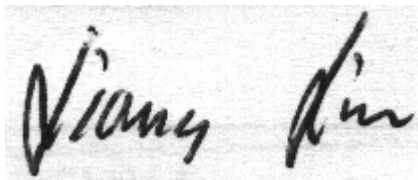
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government st
Suite 208A
Pensacola, FL 32502-5794
Attn: Michael King

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 08-DEC-2017 09:59

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

NON-CONFORMANCE REPORT INCLUDED

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: STALLWORTH LAKE

Collection Date/Time: 11/14/2017 13:30

Field ID: G3NW0083

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946323	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P335359	
	SM 2320 B-97	Total Alkalinity	37	A	mg CaCO3/L	P335851	
	SM 2540 D-97	TSS	3	UA	mg/L	P335843	
	SM 4500 F-C-97	Fluoride	0.31		mg F/L	P335854	
1946325	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P336208	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P336009	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P335791	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P335878	
	SM 5310 B-00	Organic Carbon	6.0		mg C/L	P335861	
1946327	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P335407	MS

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: FULLER LAKE MIDDLE

Collection Date/Time: 11/14/2017 15:00

Field ID: G3NW0084

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946320	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P335359	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P335409	
		Sulfate	4.4		mg SO4/L	P335411	
	SM 2120 B	Color (true)	260		PCU	P335392	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P335626	
	SM 2540 C-97	TDS	69		mg/L	P335712	
	SM 2540 D-97	TSS	3	I	mg/L	P335730	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P335630	
1946321	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P336207	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P335946	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P335813	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P335543	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P335860	
1946322	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P335389	

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: MORRIS LAKE

Collection Date/Time: 11/14/2017 14:10

Field ID: G3NW0126

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946324	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P335359	
	SM 2320 B-97	Total Alkalinity	0.79	I	mg CaCO3/L	P335626	
	SM 2540 D-97	TSS	2	I	mg/L	P335842	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P335630	
1946326	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P336207	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P335946	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P335813	

Field ID: G3NW0126

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946326	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P335543	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P335860	
1946328	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P335393	

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: EASTERN LAKE OFF OF CENTER AVE

Collection Date/Time: 11/14/2017 11:05

Field ID: G3NW0124

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946809	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P335459	
	SM 2320 B-97	Total Alkalinity	82		mg CaCO3/L	P335851	
	SM 2540 D-97	TSS	3	U	mg/L	P335787	
	SM 4500 F-C-97	Fluoride	0.73		mg F/L	P335854	
1946811	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P336208	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P336009	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P336116	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P335878	
	SM 5310 B-00	Organic Carbon	4.7		mg C/L	P335969	
1946813	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	IQ	mg P/L	P335482	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

Sample Location: LITTLE REDFISH LAKE

Collection Date/Time: 11/14/2017 12:05

Field ID: G3NW0125

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946810	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P335459	
	SM 2320 B-97	Total Alkalinity	37		mg CaCO3/L	P335851	
	SM 2540 D-97	TSS	3	UA	mg/L	P335787	
	SM 4500 F-C-97	Fluoride	0.35		mg F/L	P335854	
1946812	EPA 350.1 Rev. 2.0	Ammonia-N	0.048		mg N/L	P336208	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P336009	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P336116	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P335878	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P335969	
1946814	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	UQ	mg P/L	P335475	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

Sample Location: ALLEN LAKE MIDDLE

Collection Date/Time: 11/14/2017 13:00

Field ID: G3NW0085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946806	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P335459	

Field ID: G3NW0085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946806	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P335506	
		Sulfate	4.5		mg SO4/L	P335509	
	SM 2120 B	Color (true)	140		PCU	P335421	
	SM 2320 B-97	Total Alkalinity	1.1	I	mg CaCO3/L	P335849	
	SM 2540 C-97	TDS	69		mg/L	P335954	
	SM 2540 D-97	TSS	2	U	mg/L	P335783	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P335852	
1946807	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P336250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P336047	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P335898	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P335673	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P335968	
1946808	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	UQ	mg P/L	P335475	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

Non-Conformance Report

NCR ID: 6763

Event(s)

NW-DIST-2017-11-15-01

Job(s)

TLH-2017-11-16-16

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived one or more days late,by FedEx 11/16/2017 at 10:05. Samples received within the acceptable temperature range.
Tracking number:788459562193

Resolution: Michael King was contacted by email; correspondence attached to sample submittal forms. Data will be qualified as appropriate.

Authorized by/Date: Joshua Ayres 11/21/2017

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry Colin Wright (850) 245-8085
Biology Cheryl Swanson (850) 245-8177

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P335359

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P335459

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335409

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335411

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335506

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335509

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336207

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336208

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336250

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335946

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336009

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336047

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335791

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335813

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335898

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336116

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335543

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335673

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335878

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 dissolved
Batch ID: P335389

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335393

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335407

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335475

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335482

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

Reference Method: SM 2120 B
Batch ID: P335392

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P335421

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P335626

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

Reference Method: SM 2320 B-97
Batch ID: P335849

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P335851

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

Reference Method: SM 2540 C-97
Batch ID: P335712

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P335954

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P335730

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P335783

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P335787

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P335842

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P335843

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P335630

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P335852

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P335854

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P335860

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

Reference Method: SM 5310 B-00
Batch ID: P335861

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

Reference Method: SM 5310 B-00
Batch ID: P335968

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

Reference Method: SM 5310 B-00
Batch ID: P335969

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335409

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335411

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335506

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335506

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335509

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336207

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: P336208

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336250

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335946

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336009

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336047

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	91.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335791

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335813

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335898

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336116

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335543

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335673

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335878

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335389

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335393

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335407

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335475

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335482

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

Reference Method: SM 2320 B-97
Batch ID: P335626

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P335849

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

Reference Method: SM 2320 B-97
Batch ID: P335851

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P335630

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P335852

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

Reference Method: SM 4500 F-C-97
Batch ID: P335854

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P335860

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P335861

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

Reference Method: SM 5310 B-00
Batch ID: P335968

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.0		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P335969

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335409

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946320	Chloride	98.9		P	90 - 110
1946491	Chloride	96.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335411

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946320	Sulfate	102		P	90 - 110
1946491	Sulfate	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335506

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946673	Chloride	97.6		P	90 - 110
1946675	Chloride	95.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335509

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946673	Sulfate	98.2		P	90 - 110
1946675	Sulfate	97.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336207

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946326	Ammonia-N	97.9	97.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336208

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946241	Ammonia-N	102	97.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946807	Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335946

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946280	Kjeldahl Nitrogen	93.8	97.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336009

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946838	Kjeldahl Nitrogen	96.0	92.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336047

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946898	Kjeldahl Nitrogen	94.5	98.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335791

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946240	NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335813

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946321	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335898

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946795	NO2NO3-N	106	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336116

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946812	NO2NO3-N	102	103	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946278	Total-P	98.5	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335673

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946680	Total-P	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335878

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946811	Total-P	97.7	95.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946186	O-Phosphate-P	94.0	94.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335393

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946328	O-Phosphate-P	90.9	92.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335407

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946160	O-Phosphate-P	89.6	93.5	F/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335475

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946686	O-Phosphate-P	100	97.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335482

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946813	O-Phosphate-P	93.9	95.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P335630

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946193	Fluoride	102	103	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
 Batch ID: P335852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947514	Fluoride	98.2	98.2	P/P	91 - 105

Reference Method: SM 4500 F-C-97
 Batch ID: P335854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946323	Fluoride	97.0	97.0	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P335860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946277	Organic Carbon	101	99.8	P/P	85 - 115

Reference Method: SM 5310 B-00
 Batch ID: P335861

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946150	Organic Carbon	95.2	95.4	P/P	85 - 115

Reference Method: SM 5310 B-00
 Batch ID: P335968

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946807	Organic Carbon	95.3	96.1	P/P	85 - 115

Reference Method: SM 5310 B-00
 Batch ID: P335969

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946879	Organic Carbon	97.3	99.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P335359

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946261	Turbidity	2.11	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P335459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946671	Turbidity	2.71	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946491	Chloride	1.40	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946491	Sulfate	1.18	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946675	Chloride	0.388	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335509

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946675	Sulfate	0.527	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336207

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946326	Ammonia-N	0.0449	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946241	Ammonia-N	2.52	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946807	Ammonia-N	0.259	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946280	Kjeldahl Nitrogen	3.36	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946838	Kjeldahl Nitrogen	3.33	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946898	Kjeldahl Nitrogen	2.65	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335791

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946240	NO2NO3-N	0.492	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335813

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946321	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335898

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946795	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946812	NO2NO3-N	0.950	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946278	Total-P	3.85	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335673

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946680	Total-P	0.475	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P335878

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946811	Total-P	2.30	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P335389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946186	O-Phosphate-P	0.145	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P335393

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946328	O-Phosphate-P	1.31	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P335407

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946160	O-Phosphate-P	3.96	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P335475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946686	O-Phosphate-P	1.63	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P335482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946813	O-Phosphate-P	1.71	Spike	P	0 - 20

Reference Method: SM 2120 B

Batch ID: P335392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946261	Color (true)	1.54	Sample	P	0 - 20

Reference Method: SM 2120 B

Batch ID: P335421

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946809	Color (true)	2.02	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P335626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946193	Total Alkalinity	0.0904	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P335849

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947514	Total Alkalinity	0.0879	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P335851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946323	Total Alkalinity	1.02	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P335712

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946261	TDS	6.38	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P335954

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946793	TDS	3.05	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P335630

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946193	Fluoride	0.463	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P335852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947514	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P335854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946323	Fluoride	0.0	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P335860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946277	Organic Carbon	0.932	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P335861

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946150	Organic Carbon	0.197	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P335968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946807	Organic Carbon	0.504	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P335969

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946879	Organic Carbon	1.65	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: A80230
Included Lab Sample IDs: 1946320, 1946806

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	99.2	P/P	90 - 110
Chloride	101	100	P/P	90 - 110
Sulfate	100	99.4	P/P	90 - 110
Sulfate	100	99.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A80289
Included Lab Sample IDs: 1946320, 1946323, 1946324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A80298

Included Lab Sample IDs: 1946322, 1946327, 1946328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	102	98.3	P/P	90 - 110
O-Phosphate-P	98.6	98.5	P/P	90 - 110
O-Phosphate-P	99.5	100	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A80299

Included Lab Sample IDs: 1946320

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	104	103	P/P	85 - 115

Reference Method: SM 2120 B

Run ID: A80310

Included Lab Sample IDs: 1946806

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	98.5	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A80322

Included Lab Sample IDs: 1946806, 1946809, 1946810

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A80325

Included Lab Sample IDs: 1946808, 1946813, 1946814

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

Reference Method: SM 2320 B-97

Run ID: A80383

Included Lab Sample IDs: 1946320, 1946324

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

Reference Method: SM 4500 F-C-97

Run ID: A80383

Included Lab Sample IDs: 1946320, 1946324

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80413

Included Lab Sample IDs: 1946321, 1946326

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A80460

Included Lab Sample IDs: 1946325

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A80468

Included Lab Sample IDs: 1946321, 1946326

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80474

Included Lab Sample IDs: 1946807

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

Reference Method: SM 2320 B-97

Run ID: A80493

Included Lab Sample IDs: 1946323, 1946806, 1946809, 1946810

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110
Total Alkalinity	103	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A80493

Included Lab Sample IDs: 1946323, 1946806, 1946809, 1946810

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	101	P/P	90 - 110
Fluoride	99.0	101	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A80498

Included Lab Sample IDs: 1946321, 1946325, 1946326

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	99.6	P/P	90 - 110
Organic Carbon	99.7	99.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A80516

Included Lab Sample IDs: 1946807

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

Reference Method: SM 5310 B-00

Run ID: A80544

Included Lab Sample IDs: 1946807, 1946811, 1946812

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	94.4	P/P	90 - 110
Organic Carbon	98.2	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80548

Included Lab Sample IDs: 1946325, 1946811, 1946812

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80599

Included Lab Sample IDs: 1946325, 1946811, 1946812

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.5	95.2	P/P	90 - 110
Kjeldahl Nitrogen	99.0	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A80607

Included Lab Sample IDs: 1946811, 1946812

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80614

Included Lab Sample IDs: 1946807

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.7	95.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A80627

Included Lab Sample IDs: 1946321, 1946325, 1946326, 1946811, 1946812

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A80655

Included Lab Sample IDs: 1946807

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80668

Included Lab Sample IDs: 1946321, 1946326

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	99.7	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					2.11	
	Turbidity					2.71	
EPA 300.0 Rev. 2.1	Chloride	101	96.2	98.9		1.40	
	Chloride	97.8	95.8	97.6		0.388	
	Sulfate	101	100	102		1.18	
	Sulfate	98.7	97.0	98.2		0.527	
EPA 350.1 Rev. 2.0	Ammonia-N	102	97.9	97.8			0.0449
	Ammonia-N	101	102	97.7			2.52
	Ammonia-N	103	103	103			0.259
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	93.8	97.9			3.36
	Kjeldahl Nitrogen	102	96.0	92.5			3.33
	Kjeldahl Nitrogen	91.8	94.5	98.9			2.65
EPA 353.2 Rev. 2.0	NO2NO3-N	103	102	101			0.492
	NO2NO3-N	106	103	103			0.0
	NO2NO3-N	104	106	106			0.0
	NO2NO3-N	105	102	103			0.950
EPA 365.1 Rev. 2.0	Total-P	102	98.5	102			3.85
	Total-P	96.4	100	101			0.475
	Total-P	103	97.7	95.5			2.30
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.5	94.0	94.2			0.145
	O-Phosphate-P	100	90.9	92.1			1.31
	O-Phosphate-P	101	89.6	93.5			3.96
	O-Phosphate-P	99.2	100	97.9			1.63
	O-Phosphate-P	103	93.9	95.6			1.71
SM 2120 B	Color (true)					1.54	
	Color (true)					2.02	
SM 2320 B-97	Total Alkalinity	103				0.0904	
	Total Alkalinity	102				0.0879	
	Total Alkalinity	103				1.02	
SM 2540 C-97	TDS					6.38	
	TDS					3.05	
SM 4500 F-C-97	Fluoride	102	102	103			0.463

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
SM 4500 F-C-97	Fluoride	97.0	98.2	98.2			0.0
	Fluoride	98.0	97.0	97.0			0.0
SM 5310 B-00	Organic Carbon	101	101	99.8			0.932
	Organic Carbon	100	95.2	95.4			0.197
	Organic Carbon	97.0	95.3	96.1			0.504
	Organic Carbon	97.5	97.3	99.0			1.65

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1946320, 1946323, 1946324, 1946806, 1946809, 1946810
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1946320, 1946806
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1946320, 1946806
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1946321, 1946325, 1946326, 1946807, 1946811, 1946812
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1946321, 1946325, 1946326, 1946807, 1946811, 1946812
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1946321, 1946325, 1946326, 1946807, 1946811, 1946812
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1946321, 1946325, 1946326, 1946807, 1946811, 1946812
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1946322, 1946327, 1946328, 1946808, 1946813, 1946814
SM 2120 B / E31780	True Color measured at 450 nm	1946320, 1946806
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1946320, 1946323, 1946324, 1946806, 1946809, 1946810
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1946320, 1946806
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1946320, 1946323, 1946324, 1946806, 1946809, 1946810
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1946320, 1946323, 1946324, 1946806, 1946809, 1946810
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1946321, 1946325, 1946326, 1946807, 1946811, 1946812

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	11/15/2017			11/15/2017 16:32	DeAsia Armster	1946320, 1946323, 1946324
	11/16/2017			11/16/2017 10:51	DeAsia Armster	1946809
	11/16/2017			11/16/2017 10:52	DeAsia Armster	1946806
	11/16/2017			11/16/2017 10:54	DeAsia Armster	1946810
EPA 300.0 Rev. 2.1	11/15/2017			11/15/2017	Julia Storbeck	1946320
	11/16/2017			11/17/2017	Julia Storbeck	1946806
EPA 350.1 Rev. 2.0	11/15/2017			11/30/2017	Sofia Elnemr	1946321, 1946325, 1946326
	11/16/2017			11/30/2017	Sofia Elnemr	1946811, 1946812
	11/16/2017			12/01/2017	Sofia Elnemr	1946807
EPA 351.2 Rev. 2.0	11/15/2017	11/28/2017	Adrian Shelby	12/01/2017	Tanya Welborn	1946321, 1946326
	11/15/2017	11/29/2017	Adrian Shelby	11/29/2017	Joseph Suarez	1946325
	11/16/2017	11/29/2017	Adrian Shelby	11/29/2017	Joseph Suarez	1946811, 1946812
	11/16/2017	11/29/2017	Adrian Shelby	11/30/2017	Joseph Suarez	1946807
EPA 353.2 Rev. 2.0	11/15/2017			11/22/2017	Beverly Y. Sanders	1946325
	11/15/2017			11/22/2017	Lauren Bottorf	1946321, 1946326
	11/16/2017			11/27/2017	Beverly Y. Sanders	1946807
	11/16/2017			11/30/2017	Beverly Y. Sanders	1946811, 1946812
EPA 365.1 Rev. 2.0	11/15/2017	11/17/2017	Sima Feizi	11/20/2017	Lipi Saha	1946321, 1946326
	11/15/2017	11/27/2017	Sima Feizi	11/28/2017	Lipi Saha	1946325
	11/16/2017	11/21/2017	Adrian Shelby	11/22/2017	Lipi Saha	1946807
	11/16/2017	11/27/2017	Sima Feizi	11/28/2017	Lipi Saha	1946811, 1946812
EPA 365.1 Rev. 2.0 dissolved	11/15/2017			11/15/2017 14:41	Megan Treadwell	1946322
	11/15/2017			11/15/2017 15:04	Megan Treadwell	1946328
	11/15/2017			11/15/2017 15:31	Megan Treadwell	1946327
	11/16/2017			11/16/2017 14:08	Megan Treadwell	1946813
	11/16/2017			11/16/2017 14:20	Megan Treadwell	1946808
	11/16/2017			11/16/2017 14:21	Megan Treadwell	1946814
SM 2120 B	11/15/2017			11/15/2017 16:33	Tanya Welborn	1946320
	11/16/2017			11/16/2017 10:56	Tanya Welborn	1946806
SM 2320 B-97	11/15/2017			11/18/2017	Dale L. Simmons	1946320, 1946324
	11/15/2017			11/23/2017	Dale L. Simmons	1946323
	11/16/2017			11/22/2017	Dale L. Simmons	1946806
	11/16/2017			11/23/2017	Dale L. Simmons	1946809, 1946810
SM 2540 C-97	11/15/2017			11/17/2017	Yijie Li	1946320
	11/16/2017			11/17/2017	DeAsia Armster	1946806
SM 2540 D-97	11/15/2017			11/17/2017	Yijie Li	1946320
	11/15/2017			11/20/2017	Yijie Li	1946323, 1946324
	11/16/2017			11/17/2017	DeAsia Armster	1946806, 1946809, 1946810
SM 4500 F-C-97	11/15/2017			11/18/2017	Dale L. Simmons	1946320, 1946324
	11/15/2017			11/23/2017	Dale L. Simmons	1946323

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-97	11/16/2017			11/22/2017	Dale L. Simmons	1946806
	11/16/2017			11/23/2017	Dale L. Simmons	1946809, 1946810
SM 5310 B-00	11/15/2017			11/21/2017	Ping Hua	1946321, 1946326
	11/15/2017			11/22/2017	Ping Hua	1946325
	11/16/2017			11/27/2017	Ping Hua	1946807
	11/16/2017			11/28/2017	Ping Hua	1946811, 1946812