

Chemical Analysis Report

NW-DIST-2016-12-13-03

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

Event Description: **ENR B WBID 778A 843 786 874A 754**

Request ID: **RQ-2016-11-21-09**

Customer: **NW-DIST**

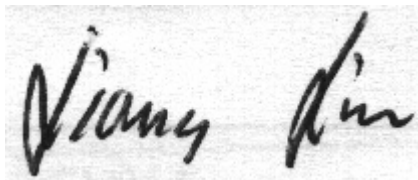
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
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, PhD, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 09-JAN-2017 10:38

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: Choctawhatchee River abv Smokehouse Lake **Collection Date/Time: 12/12/2016 11:30**

Field ID: G3NW0073

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1857358	EPA 180.1 Rev. 2.0	Turbidity	17	A	NTU	P316714	
	EPA 300.0 Rev. 2.1	Chloride	3.9		mg Cl/L	P317352	
		Sulfate	5.9		mg SO4/L	P317358	
	SM 2320 B-97	Total Alkalinity	8.4		mg CaCO3/L	P317055	
	SM 2540 C-97	TDS	50		mg/L	P317406	
	SM 2540 D-97	TSS	6	I	mg/L	P317284	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P317058	
1857367	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P317316	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P316913	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P317065	
	EPA 365.1 Rev. 2.0	Total-P	0.049		mg P/L	P316981	
	SM 5310 B-00	Organic Carbon	9.7		mg C/L	P316965	
1857376	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P316716	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high 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: Rocky Bayou 1/2 mile east of bridge

Collection Date/Time: 12/12/2016 12:50

Field ID: G3NW0033

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1857359	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P316714	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P317056	
	SM 2540 D-97	TSS	3	I	mg/L	P317290	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P317690	
1857368	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P317602	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P316851	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P317532	
	EPA 365.1 Rev. 2.0	Total-P	0.005	I	mg P/L	P316999	
	SM 5310 B-00	Organic Carbon	2.2		mg C/L	P316952	
1857377	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P316718	

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: Cinco Bayou West of Cinco Bridge

Collection Date/Time: 12/12/2016 14:00

Field ID: G3NW0088

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1857360	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P316714	
	SM 2320 B-97	Total Alkalinity	90		mg CaCO3/L	P317056	
	SM 2540 D-97	TSS	3	U	mg/L	P317290	
	SM 4500 F-C-97	Fluoride	0.82		mg F/L	P317059	
1857369	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P317602	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29	I	mg N/L	P316851	

Field ID: G3NW0088

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1857369	EPA 353.2 Rev. 2.0	NO2NO3-N	0.062		mg N/L	P317532	
	EPA 365.1 Rev. 2.0	Total-P	0.008	I	mg P/L	P317428	
	SM 5310 B-00	Organic Carbon	2.6		mg C/L	P316952	
1857378	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P316718	

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: Garnier Bayou Paradise Point

Collection Date/Time: 12/12/2016 14:15

Field ID: G3NW0087

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1857361	EPA 180.1 Rev. 2.0	Turbidity	0.45		NTU	P316714	
	SM 2320 B-97	Total Alkalinity	91		mg CaCO3/L	P317056	
	SM 2540 D-97	TSS	3	I	mg/L	P317290	
	SM 4500 F-C-97	Fluoride	0.85		mg F/L	P317059	
1857370	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P317602	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30	I	mg N/L	P316851	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P317532	
	EPA 365.1 Rev. 2.0	Total-P	0.007	I	mg P/L	P316999	
	SM 5310 B-00	Organic Carbon	2.1		mg C/L	P316952	
1857379	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P316719	

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: Garnier Bayou Paradise Point

Collection Date/Time: 12/12/2016 14:25

Field ID: G3NW0087DUPLICATE

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1857362	EPA 180.1 Rev. 2.0	Turbidity	0.45		NTU	P316714	
	SM 2320 B-97	Total Alkalinity	92		mg CaCO3/L	P317056	
	SM 2540 D-97	TSS	3	U	mg/L	P317290	
	SM 4500 F-C-97	Fluoride	0.86		mg F/L	P317059	
1857371	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P317320	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25	I	mg N/L	P316853	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P317532	
	EPA 365.1 Rev. 2.0	Total-P	0.004	U	mg P/L	P317428	
	SM 5310 B-00	Organic Carbon	2.1		mg C/L	P316952	
1857380	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P316719	

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: Poquito Bayou Middle

Collection Date/Time: 12/12/2016 14:30

Field ID: G3NW0086

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1857363	EPA 180.1 Rev. 2.0	Turbidity	0.50		NTU	P316714	

Field ID: G3NW0086

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1857363	SM 2320 B-97	Total Alkalinity	88		mg CaCO3/L	P317056	
	SM 2540 D-97	TSS	3	U	mg/L	P317290	
	SM 4500 F-C-97	Fluoride	0.82		mg F/L	P317059	
1857372	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P317320	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.19	I	mg N/L	P316853	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P317532	
	EPA 365.1 Rev. 2.0	Total-P	0.004	U	mg P/L	P317428	
	SM 5310 B-00	Organic Carbon	2.2		mg C/L	P316952	
1857381	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P316719	

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: Poquito Bayou

Collection Date/Time: 12/12/2016 14:40

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1857364	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P316714	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P317355	
		Sulfate	0.20	U	mg SO4/L	P317364	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P317055	
	SM 2540 C-97	TDS	15	U	mg/L	P317405	
	SM 2540 D-97	TSS	2	U	mg/L	P317283	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P317058	
1857373	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P317316	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P317107	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P317065	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P317000	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P316965	
1857382	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P316719	

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: Choctawhatchee Bay Sec B Backgrn

Collection Date/Time: 12/12/2016 15:10

Field ID: G3NW0089

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1857365	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P316714	
	SM 2320 B-97	Total Alkalinity	90		mg CaCO3/L	P317056	
	SM 2540 D-97	TSS	3	I	mg/L	P317291	
	SM 4500 F-C-97	Fluoride	0.80		mg F/L	P317059	
1857374	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P317320	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28	I	mg N/L	P316853	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.028		mg N/L	P317532	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P317428	
	SM 5310 B-00	Organic Carbon	3.2		mg C/L	P316952	

Field ID: G3NW0089

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1857383	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P316719	

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 Earl Center

Collection Date/Time: 12/12/2016 15:30

Field ID: G3NW0090

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1857366	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P316714	
	SM 2320 B-97	Total Alkalinity	96		mg CaCO3/L	P317056	
	SM 2540 D-97	TSS	5	I	mg/L	P317291	
	SM 4500 F-C-97	Fluoride	0.84		mg F/L	P317059	
1857375	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P317320	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P316853	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.053		mg N/L	P317532	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P316999	
	SM 5310 B-00	Organic Carbon	4.0		mg C/L	P316952	
1857384	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P316719	

Ref. Method and Comment:

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

Non-Conformance Report

NCR ID: 6158

Event(s)

NW-DIST-2016-12-13-03

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Receiving

- Observation: Bottle Group B samples were missing (1857385, 1857386). Field sheet for samples field IDs G3NW0086 and FIELD BLANK were incorrect. Field parameters were included for the field blank and missing for the real sample. Email sent to the customer.
- Resolution: Email received that indicated that Bottle Group B samples were not sent on purpose and that those Group B tests should be applied to the Bottle Group A bottles (1-L bottle) from the same sites. There was sufficient sample volume to do this. Missing Group B samples cancelled. Corrected field sheet for the samples with exchanged field parameters was received and placed in the scanned sheets. Email regarding the missing Group B samples also placed in the scanned sheets.

Authorised by/Date: Ramsey K. White 12/19/2016

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P316714

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317352

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317355

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317358

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317364

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317316

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317320

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317602

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316851

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: P316853

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316913

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317107

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317065

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317532

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P316981

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P316999

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317000

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317428

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: P316716

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P316718

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P316719

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

Reference Method: SM 2320 B-97
Batch ID: P317055

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

Reference Method: SM 2320 B-97
Batch ID: P317056

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

Reference Method: SM 2540 C-97
Batch ID: P317405

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P317406

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P317283

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P317284

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P317290

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P317291

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P317058

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P317059

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P317690

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P316952

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

Reference Method: SM 5310 B-00
Batch ID: P316965

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: P317352

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317355

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: P317355

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317358

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317364

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317316

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: P317320

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: P317602

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: P316851

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316853

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316913

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317107

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317065

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317532

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: P316981

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P316999

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317000

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317428

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	93.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P316716

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: P316718

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.7		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P316719

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

Reference Method: SM 2320 B-97
Batch ID: P317055

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

Reference Method: SM 2320 B-97
Batch ID: P317056

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

Reference Method: SM 4500 F-C-97
Batch ID: P317058

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

Reference Method: SM 4500 F-C-97
Batch ID: P317059

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.8		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P317690

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

Reference Method: SM 5310 B-00
Batch ID: P316952

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.7		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P316965

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317352

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317352

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857358	Chloride	98.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317355

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857490	Chloride	99.4		P	90 - 110
1857497	Chloride	99.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317358

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857004	Sulfate	95.0		P	90 - 110
1857358	Sulfate	93.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317364

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857490	Sulfate	94.3		P	90 - 110
1857497	Sulfate	93.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317316

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857342	Ammonia-N	95.8	97.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317320

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857302	Ammonia-N	109	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317602

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857368	Ammonia-N	94.9	96.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316851

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857370	Kjeldahl Nitrogen	101	96.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857375	Kjeldahl Nitrogen	108	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316913

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857683	Kjeldahl Nitrogen	102	98.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1859001	Kjeldahl Nitrogen	102	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857342	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317532

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857372	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P316981

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857142	Total-P	99.4	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P316999

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857370	Total-P	95.1	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317000

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857491	Total-P	96.3	94.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317428

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857369	Total-P	91.9	90.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P316716

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857376	O-Phosphate-P	96.4	98.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P316718

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857307	O-Phosphate-P	97.8	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P316719

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857384	O-Phosphate-P	97.3	99.0	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P317058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857125	Fluoride	101	102	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P317059

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1855103	Fluoride	101	101	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P317690

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1860768	Fluoride	98.2	99.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P316952

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857368	Organic Carbon	96.8	96.9	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P316965

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857478	Organic Carbon	95.1	99.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P316714

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857358	Turbidity	1.19	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857004	Chloride	0.0948	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317355

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857490	Chloride	0.175	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317358

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857004	Sulfate	0.144	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857490	Sulfate	0.106	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857342	Ammonia-N	1.20	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317320

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857302	Ammonia-N	3.58	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317602

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857368	Ammonia-N	0.930	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857370	Kjeldahl Nitrogen	3.90	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857375	Kjeldahl Nitrogen	3.10	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316913

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857683	Kjeldahl Nitrogen	2.67	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1859001	Kjeldahl Nitrogen	1.28	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857342	NO2NO3-N	0.637	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317532

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857372	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P316981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857142	Total-P	1.17	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P316999

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857370	Total-P	1.49	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317000

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857491	Total-P	2.32	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P317428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857369	Total-P	2.03	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P316716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857376	O-Phosphate-P	1.56	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P316718

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857307	O-Phosphate-P	0.543	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P316719

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857384	O-Phosphate-P	1.65	Spike	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P317055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857125	Total Alkalinity	0.337	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97

Batch ID: P317056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857057	Total Alkalinity	0.0209	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97

Batch ID: P317405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857006	TDS	4.03	Sample	P	0 - 10

Reference Method: SM 2540 C-97

Batch ID: P317406

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857088	TDS	6.00	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P317058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857125	Fluoride	0.470	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P317059

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1855103	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P317690

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860768	Fluoride	0.520	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P316952

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857368	Organic Carbon	0.146	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P316965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857478	Organic Carbon	2.49	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A73348
Included Lab Sample IDs: 1857358, 1857359, 1857360, 1857361, 1857362, 1857363, 1857364, 1857365, 1857366

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A73349
Included Lab Sample IDs: 1857376, 1857377, 1857378, 1857379, 1857380, 1857381, 1857382, 1857383, 1857384

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	99.4	P/P	90 - 110
O-Phosphate-P	99.3	98.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A73349

Included Lab Sample IDs: 1857376, 1857377, 1857378, 1857379, 1857380, 1857381, 1857382, 1857383, 1857384

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	99.3	P/P	90 - 110
O-Phosphate-P	99.4	99.6	P/P	90 - 110
O-Phosphate-P	99.6	98.2	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A73434

Included Lab Sample IDs: 1857368, 1857369, 1857370, 1857371, 1857372, 1857374, 1857375

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.2	97.4	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A73440

Included Lab Sample IDs: 1857367, 1857373

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A73454

Included Lab Sample IDs: 1857368, 1857369, 1857370, 1857371, 1857372, 1857374, 1857375

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	96.7	P/P	90 - 110
Kjeldahl Nitrogen	100	100	P/P	90 - 110
Kjeldahl Nitrogen	97.2	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A73481

Included Lab Sample IDs: 1857367

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

Reference Method: SM 2320 B-97

Run ID: A73482

Included Lab Sample IDs: 1857358, 1857359, 1857360, 1857361, 1857362, 1857363, 1857364, 1857365, 1857366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.5	P/P	90 - 110
Total Alkalinity	97.7	99.1	P/P	90 - 110
Total Alkalinity	97.8	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A73482

Included Lab Sample IDs: 1857358, 1857360, 1857361, 1857362, 1857363, 1857364, 1857365, 1857366

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A73485

Included Lab Sample IDs: 1857367, 1857373

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A73507

Included Lab Sample IDs: 1857367, 1857368, 1857370, 1857373, 1857375

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	97.2	P/P	90 - 110
Total-P	98.5	98.5	P/P	90 - 110
Total-P	98.8	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A73541

Included Lab Sample IDs: 1857373

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A73560

Included Lab Sample IDs: 1857367, 1857371, 1857372, 1857373, 1857374, 1857375

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	99.9	P/P	90 - 110
Ammonia-N	97.1	97.3	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A73576

Included Lab Sample IDs: 1857358, 1857364

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	103	P/P	90 - 110
Chloride	103	101	P/P	90 - 110
Sulfate	92.9	95.3	P/P	90 - 110
Sulfate	97.6	99.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A73633

Included Lab Sample IDs: 1857368, 1857369, 1857370, 1857371, 1857372, 1857374, 1857375

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A73671

Included Lab Sample IDs: 1857368, 1857369, 1857370

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A73674

Included Lab Sample IDs: 1857369, 1857371, 1857372, 1857374

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.8	96.0	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A73717

Included Lab Sample IDs: 1857359

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.5	100	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				1.19	
EPA 300.0 Rev. 2.1	Chloride	103	98.3		0.0948	
	Chloride	101	99.4	99.6	0.175	
	Sulfate	96.8	95.0	93.8	0.144	
	Sulfate	94.4	94.3	93.6	0.106	
EPA 350.1 Rev. 2.0	Ammonia-N	102	95.8	97.9		1.20
	Ammonia-N	102	109	104		3.58
	Ammonia-N	103	94.9	96.1		0.930
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	101	96.2		3.90
	Kjeldahl Nitrogen	103	108	104		3.10
	Kjeldahl Nitrogen	101	102	98.3		2.67
	Kjeldahl Nitrogen	102	102	100		1.28
EPA 353.2 Rev. 2.0	NO2NO3-N	103	102	102		0.637
	NO2NO3-N	105	103	103		0.0
EPA 365.1 Rev. 2.0	Total-P	98.8	99.4	97.6		1.17
	Total-P	95.8	95.1	96.5		1.49
	Total-P	96.1	96.3	94.0		2.32
	Total-P	93.4	91.9	90.0		2.03
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	96.4	98.1		1.56
	O-Phosphate-P	99.7	97.8	98.5		0.543
	O-Phosphate-P	102	97.3	99.0		1.65
SM 2320 B-97	Total Alkalinity	99.2			0.337	
	Total Alkalinity	98.6			0.0209	
SM 2540 C-97	TDS				4.03	
	TDS				6.00	
SM 4500 F-C-97	Fluoride	100	101	102		0.470
	Fluoride	99.8	101	101		0.0
	Fluoride	97.0	98.2	99.0		0.520
SM 5310 B-00	Organic Carbon	99.7	96.8	96.9		0.146
	Organic Carbon	101	95.1	99.6		2.49

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1857358, 1857359, 1857360, 1857361, 1857362, 1857363, 1857364, 1857365, 1857366
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1857358, 1857364
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1857358, 1857364
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1857367, 1857368, 1857369, 1857370, 1857371, 1857372, 1857373, 1857374, 1857375
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1857367, 1857368, 1857369, 1857370, 1857371, 1857372, 1857373, 1857374, 1857375
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1857367, 1857368, 1857369, 1857370, 1857371, 1857372, 1857373, 1857374, 1857375
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1857367, 1857368, 1857369, 1857370, 1857371, 1857372, 1857373, 1857374, 1857375
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1857376, 1857377, 1857378, 1857379, 1857380, 1857381, 1857382, 1857383, 1857384
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1857358, 1857359, 1857360, 1857361, 1857362, 1857363, 1857364, 1857365, 1857366
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1857358, 1857364
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1857358, 1857359, 1857360, 1857361, 1857362, 1857363, 1857364, 1857365, 1857366
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1857358, 1857359, 1857360, 1857361, 1857362, 1857363, 1857364, 1857365, 1857366
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1857367, 1857368, 1857369, 1857370, 1857371, 1857372, 1857373, 1857374, 1857375

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	12/13/2016			12/13/2016 19:27	Julie Michelle Frank	1857358, 1857359, 1857360, 1857361, 1857362, 1857363, 1857364, 1857365, 1857366
EPA 300.0 Rev. 2.1	12/13/2016			12/21/2016	Ping Hua	1857358
	12/13/2016			12/22/2016	Ping Hua	1857364
	12/13/2016			12/23/2016	Ping Hua	1857364
EPA 350.1 Rev. 2.0	12/13/2016			12/22/2016	Sofia Elnemr	1857367, 1857371, 1857372, 1857373, 1857374, 1857375
	12/13/2016			12/29/2016	Sofia Elnemr	1857368, 1857369, 1857370
EPA 351.2 Rev. 2.0	12/13/2016	12/15/2016	Adrian Shelby	12/19/2016	Joseph Suarez	1857368, 1857369, 1857370, 1857371, 1857372, 1857374, 1857375
	12/13/2016	12/16/2016	Adrian Shelby	12/20/2016	Joseph Suarez	1857367
	12/13/2016	12/21/2016	Adrian Shelby	12/22/2016	Joseph Suarez	1857373
EPA 353.2 Rev. 2.0	12/13/2016			12/20/2016	Beverly Y. Sanders	1857367, 1857373
	12/13/2016			12/28/2016	Beverly Y. Sanders	1857368, 1857369, 1857370, 1857371, 1857372, 1857374, 1857375
EPA 365.1 Rev. 2.0	12/13/2016	12/19/2016	Vijayalakshmi Reddy	12/20/2016	Lipi Saha	1857367, 1857368, 1857370, 1857373, 1857375
	12/13/2016	12/27/2016	Vijayalakshmi Reddy	12/30/2016	Lipi Saha	1857369, 1857371, 1857372, 1857374
EPA 365.1 Rev. 2.0 dissolved	12/13/2016			12/13/2016 18:42	Julia Storbeck	1857376
	12/13/2016			12/13/2016 18:59	Julia Storbeck	1857384
	12/13/2016			12/13/2016 19:07	Julia Storbeck	1857382
	12/13/2016			12/13/2016 19:19	Julia Storbeck	1857379
	12/13/2016			12/13/2016 19:20	Julia Storbeck	1857380
	12/13/2016			12/13/2016 19:35	Julia Storbeck	1857377
	12/13/2016			12/13/2016 19:36	Julia Storbeck	1857378
	12/13/2016			12/13/2016 19:37	Julia Storbeck	1857381
	12/13/2016			12/13/2016 19:38	Julia Storbeck	1857383
SM 2320 B-97	12/13/2016			12/16/2016	Dale L. Simmons	1857358, 1857359, 1857360, 1857361, 1857362, 1857363, 1857364, 1857365, 1857366
SM 2540 C-97	12/13/2016			12/15/2016	Yijie Li	1857358, 1857364
SM 2540 D-97	12/13/2016			12/15/2016	Yijie Li	1857358, 1857359, 1857360, 1857361, 1857362, 1857363, 1857364, 1857365, 1857366
SM 4500 F-C-97	12/13/2016			01/03/2017	Dale L. Simmons	1857359
	12/13/2016			12/16/2016	Dale L. Simmons	1857358, 1857360, 1857361, 1857362, 1857363, 1857364, 1857365, 1857366
SM 5310 B-00	12/13/2016			12/16/2016	Julie Michelle Frank	1857367, 1857368, 1857369, 1857370, 1857371, 1857372, 1857373, 1857374, 1857375