

Chemical Analysis Report

NW-DIST-2016-07-27-02

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

Event Description: **WBID 135 111 462C**

Request ID: **RQ-2016-07-25-10**

Customer: **NW-DIST**

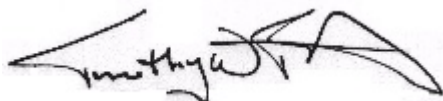
Project ID: **SMP**

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Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 17-AUG-2016 09:44

A handwritten signature in black ink, appearing to read 'Timothy W. Fitzpatrick', with a stylized flourish at the end.

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: SEVENMILE CREEK UPSTREAM OF
 QUINTETTE ROAD**

Collection Date/Time: 07/26/2016 10:25

Field ID: G4NW0344

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1819353	EPA 180.1 Rev. 2.0	Turbidity	1.3	A	NTU	P308763	
	EPA 300.0 Rev. 2.1	Chloride	6.8		mg Cl/L	P309265	
		Sulfate	0.77		mg SO4/L	P309268	
	SM 2120 B	Color (true)	6.7		PCU	P308710	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P308918	
	SM 2540 C-97	TDS	48		mg/L	P309413	
	SM 2540 D-97	TSS	4	I	mg/L	P309010	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P308921	
1819360	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P308938	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20		mg N/L	P309066	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.8		mg N/L	P309030	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P309179	
	SM 5310 B-00	Organic Carbon	1.1		mg C/L	P309047	
1819367	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P308732	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 353.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

**Sample Location: SEVENMILE CREEK UPSTREAM OF
 ALDERBROOK BLVD.**

Collection Date/Time: 07/26/2016 10:40

Field ID: G4NW0345

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1819354	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P308763	
	EPA 300.0 Rev. 2.1	Chloride	6.7		mg Cl/L	P309265	
		Sulfate	0.79		mg SO4/L	P309268	
	SM 2120 B	Color (true)	9.2		PCU	P308710	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P308918	
	SM 2540 C-97	TDS	41		mg/L	P309413	
	SM 2540 D-97	TSS	6	I	mg/L	P309010	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P308921	
1819361	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P308938	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P309066	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.6		mg N/L	P309030	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P309179	
	SM 5310 B-00	Organic Carbon	1.2		mg C/L	P309047	
1819368	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P308732	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 353.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

**Sample Location: SEVENMILE CREEK UPSTREAM OF
 ALDERBROOK BLVD**

Collection Date/Time: 07/26/2016 10:45

Field ID: G4NW0345DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1819355	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P308763	
	EPA 300.0 Rev. 2.1	Chloride	6.8		mg Cl/L	P309265	
		Sulfate	0.83		mg SO4/L	P309268	
	SM 2120 B	Color (true)	9.1		PCU	P308710	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P308918	
	SM 2540 C-97	TDS	45		mg/L	P309413	
	SM 2540 D-97	TSS	4	I	mg/L	P309010	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P308921	
1819362	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P308938	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24		mg N/L	P309066	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.6		mg N/L	P309478	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P309179	
	SM 5310 B-00	Organic Carbon	1.1		mg C/L	P309047	
1819369	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P308732	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: SEVENMILE CREEK UPSTREAM OF ALDERBROOK

Collection Date/Time: 07/26/2016 11:00

Field ID: FIELDBLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1819356	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P308765	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P309265	
		Sulfate	0.20	U	mg SO4/L	P309268	
	SM 2120 B	Color (true)	2.5	U	PCU	P308710	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P308918	
	SM 2540 C-97	TDS	15	U	mg/L	P309411	
	SM 2540 D-97	TSS	2	U	mg/L	P309008	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P308921	
1819363	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P308938	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P309067	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P309031	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P309254	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P309047	
1819370	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P308733	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: MOORE CREEK SR 197

Collection Date/Time: 07/26/2016 11:55

Field ID: G4NW0318

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1819357	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P308763	
	EPA 300.0 Rev. 2.1	Chloride	7.0		mg Cl/L	P309265	

Field ID: G4NW0318

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1819357	EPA 300.0 Rev. 2.1	Sulfate	0.27	I	mg SO4/L	P309268	
	SM 2120 B	Color (true)	11		PCU	P308710	
	SM 2320 B-97	Total Alkalinity	5.8		mg CaCO3/L	P308918	
	SM 2540 C-97	TDS	54		mg/L	P309413	
	SM 2540 D-97	TSS	6	I	mg/L	P309010	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P308921	
1819364	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P308938	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27		mg N/L	P309067	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.4		mg N/L	P309478	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P309254	
	SM 5310 B-00	Organic Carbon	1.1		mg C/L	P309047	
1819371	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P308733	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: MOORE CREEK ABOVE MINERAL SPRINGS RD. **Collection Date/Time: 07/26/2016 12:20**

Field ID: G4NW0355

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1819358	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P308763	
	EPA 300.0 Rev. 2.1	Chloride	6.2		mg Cl/L	P309265	
		Sulfate	0.56		mg SO4/L	P309268	
	SM 2120 B	Color (true)	17		PCU	P308710	
	SM 2320 B-97	Total Alkalinity	3.0		mg CaCO3/L	P308918	
	SM 2540 C-97	TDS	41		mg/L	P309413	
	SM 2540 D-97	TSS	7	I	mg/L	P309010	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P308921	
1819365	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P308938	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P309067	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.2		mg N/L	P309478	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P309254	
	SM 5310 B-00	Organic Carbon	1.3		mg C/L	P309047	
1819372	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P308733	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: BOGGY CREEK AT SR 97A **Collection Date/Time: 07/26/2016 13:20**

Field ID: G5NW0009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1819359	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P308763	
	EPA 300.0 Rev. 2.1	Chloride	5.8		mg Cl/L	P309265	
		Sulfate	0.52		mg SO4/L	P309268	
	SM 2120 B	Color (true)	27	A	PCU	P308710	

Field ID: G5NW0009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1819359	SM 2320 B-97	Total Alkalinity	2.4	I	mg CaCO3/L	P308918	
	SM 2540 C-97	TDS	30		mg/L	P309413	
	SM 2540 D-97	TSS	4	I	mg/L	P309010	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P308921	
1819366	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P308938	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.15	I	mg N/L	P309067	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.97		mg N/L	P309478	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P309254	
	SM 5310 B-00	Organic Carbon	1.9		mg C/L	P309047	
1819373	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P308733	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P308763

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P308765

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P309265

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P309268

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P308938

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P309066

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: P309067

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P309030

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P309031

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P309478

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P309179

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P309254

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308732

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308733

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

Reference Method: SM 2120 B
Batch ID: P308710

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P308918

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

Reference Method: SM 2540 C-97
Batch ID: P309411

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P309413

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P309008

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P309010

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P308921

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P309047

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: P309265

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P309268

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: P309268

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308938

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P309066

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: P309067

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P309030

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: P309031

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P309478

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P309179

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P309254

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308732

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308733

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

Reference Method: SM 2320 B-97
Batch ID: P308918

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

Reference Method: SM 4500 F-C-97
Batch ID: P308921

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P309047

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	104		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P309265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1819342	Chloride	99.3		P	90 - 110
1819387	Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P309268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1819342	Sulfate	99.0		P	90 - 110
1819387	Sulfate	97.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1819273	Ammonia-N	101	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P309066

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1819290	Kjeldahl Nitrogen	109	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P309067

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1819364	Kjeldahl Nitrogen	95.7	94.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P309031

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1819363	NO2NO3-N	106	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P309478

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1820517	NO2NO3-N	99.4	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P309179

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1819290	Total-P	99.2	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P309254

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1819364	Total-P	96.4	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308732

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1819127	O-Phosphate-P	98.5	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308733

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1819371	O-Phosphate-P	102	103	P/P	90 - 110

Reference Method: SM 5310 B-00
Batch ID: P309047

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1819343	Organic Carbon	95.6	97.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P308763

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819353	Turbidity	12.2	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P308765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819442	Turbidity	3.73	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P309265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819387	Chloride	0.0189	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P309268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819387	Sulfate	1.63	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819273	Ammonia-N	0.850	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P309066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819290	Kjeldahl Nitrogen	0.800	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P309067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819364	Kjeldahl Nitrogen	1.50	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P309030

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819289	NO2NO3-N	0.154	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P309031

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819363	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P309478

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1820517	NO2NO3-N	0.456	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P309179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819290	Total-P	1.38	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P309254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819364	Total-P	1.84	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308732

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819127	O-Phosphate-P	0.578	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308733

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819371	O-Phosphate-P	0.781	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P308710

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819359	Color (true)	5.18	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P308918

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819279	Total Alkalinity	0.107	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P309411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819115	TDS	6.12	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P309413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819467	TDS	2.67	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P308921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819279	Fluoride	0.470	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P309047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1819343	Organic Carbon	1.21	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: SM 2120 B
Run ID: A70788
Included Lab Sample IDs: 1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A70793
Included Lab Sample IDs: 1819367, 1819368, 1819369, 1819370, 1819371, 1819372, 1819373

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.5	99.8	P/P	90 - 110
O-Phosphate-P	99.7	99.7	P/P	90 - 110
O-Phosphate-P	99.7	99.9	P/P	90 - 110
O-Phosphate-P	99.8	99.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A70799

Included Lab Sample IDs: 1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	99.5	99.0	P/P	95 - 105

Reference Method: SM 2320 B-97

Run ID: A70856

Included Lab Sample IDs: 1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	101	P/P	90 - 110
Total Alkalinity	99.9	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A70856

Included Lab Sample IDs: 1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A70861

Included Lab Sample IDs: 1819360, 1819361, 1819362, 1819363, 1819364, 1819365, 1819366

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A70885

Included Lab Sample IDs: 1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	102	P/P	90 - 110
Chloride	102	101	P/P	90 - 110
Sulfate	97.2	98.2	P/P	90 - 110
Sulfate	98.2	96.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A70894

Included Lab Sample IDs: 1819360, 1819361, 1819363

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A70902

Included Lab Sample IDs: 1819360, 1819361, 1819362, 1819363, 1819364, 1819365, 1819366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.1	98.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70972

Included Lab Sample IDs: 1819360, 1819361, 1819362

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A71009

Included Lab Sample IDs: 1819363, 1819364, 1819365, 1819366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.8	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A71015

Included Lab Sample IDs: 1819362, 1819364, 1819365, 1819366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A71036

Included Lab Sample IDs: 1819360, 1819361, 1819362, 1819363, 1819364, 1819365, 1819366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.5	95.8	P/P	90 - 110
Kjeldahl Nitrogen	93.1	93.9	P/P	90 - 110
Kjeldahl Nitrogen	93.9	92.5	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				12.2	
	Turbidity				3.73	
EPA 300.0 Rev. 2.1	Chloride	101	99.3 99.3		0.0189	
	Sulfate	97.1	97.6 99.0		1.63	
EPA 350.1 Rev. 2.0	Ammonia-N	104	101 100			0.850
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	109 108			0.800
	Kjeldahl Nitrogen	105	95.7 94.0			1.50
EPA 353.2 Rev. 2.0	NO2NO3-N	104				0.154
	NO2NO3-N	105	106 106			0.0
	NO2NO3-N	104	99.4 98.8			0.456
EPA 365.1 Rev. 2.0	Total-P	101	99.2 97.8			1.38
	Total-P	99.6	96.4 98.2			1.84
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	98.5 99.3			0.578
	O-Phosphate-P	103	102 103			0.781
SM 2120 B	Color (true)				5.18	
SM 2320 B-97	Total Alkalinity	103			0.107	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision		
				LCS	SMP	MS
SM 2540 C-97	TDS				6.12	
	TDS				2.67	
SM 4500 F-C-97	Fluoride	100				0.470
SM 5310 B-00	Organic Carbon	104	95.6 97.8			1.21

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1819360, 1819361, 1819362, 1819363, 1819364, 1819365, 1819366
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1819360, 1819361, 1819362, 1819363, 1819364, 1819365, 1819366
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1819360, 1819361, 1819362, 1819363, 1819364, 1819365, 1819366
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1819360, 1819361, 1819362, 1819363, 1819364, 1819365, 1819366
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1819367, 1819368, 1819369, 1819370, 1819371, 1819372, 1819373
SM 2120 B / E31780	True Color measured at 450 nm	1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1819360, 1819361, 1819362, 1819363, 1819364, 1819365, 1819366

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	07/27/2016			07/27/2016 16:42	Sima Feizi	1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359
EPA 300.0 Rev. 2.1	07/27/2016			08/05/2016	Ping Hua	1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359
EPA 350.1 Rev. 2.0	07/27/2016			07/29/2016	Julie Michelle Frank	1819360, 1819361, 1819362, 1819363, 1819364, 1819365, 1819366
EPA 351.2 Rev. 2.0	07/27/2016	08/03/2016	Sofia Elnemr	08/04/2016	Christopher Armour	1819360, 1819361, 1819362, 1819363, 1819364, 1819365, 1819366
EPA 353.2 Rev. 2.0	07/27/2016			08/02/2016	Peter D. Kaus	1819360, 1819361, 1819363
	07/27/2016			08/09/2016	Beverly Y. Sanders	1819362, 1819364, 1819365, 1819366
EPA 365.1 Rev. 2.0	07/27/2016	08/04/2016	Vijayalakshmi Reddy	08/05/2016	Virginia P. Brown	1819360, 1819361, 1819362
	07/27/2016	08/05/2016	Vijayalakshmi Reddy	08/09/2016	Lipi Saha	1819363, 1819364, 1819365, 1819366
EPA 365.1 Rev. 2.0 dissolved	07/27/2016			07/27/2016 15:29	Julia Storbeck	1819371
	07/27/2016			07/27/2016 15:40	Julia Storbeck	1819368
	07/27/2016			07/27/2016 15:41	Julia Storbeck	1819369
	07/27/2016			07/27/2016 15:42	Julia Storbeck	1819370
	07/27/2016			07/27/2016 15:55	Julia Storbeck	1819367
	07/27/2016			07/27/2016 15:56	Julia Storbeck	1819372
	07/27/2016			07/27/2016 16:01	Julia Storbeck	1819373
SM 2120 B	07/27/2016			07/27/2016 14:19	Rochelle Y Jackson	1819353
	07/27/2016			07/27/2016 14:20	Rochelle Y Jackson	1819354
	07/27/2016			07/27/2016 14:21	Rochelle Y Jackson	1819355
	07/27/2016			07/27/2016 14:22	Rochelle Y Jackson	1819356, 1819357
	07/27/2016			07/27/2016 14:23	Rochelle Y Jackson	1819358
	07/27/2016			07/27/2016 14:25	Rochelle Y Jackson	1819359
SM 2320 B-97	07/27/2016			07/30/2016	Dale L. Simmons	1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359
SM 2540 C-97	07/27/2016			07/29/2016	Yijie Li	1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359
SM 2540 D-97	07/27/2016			07/29/2016	Yijie Li	1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359
SM 4500 F-C-97	07/27/2016			07/30/2016	Dale L. Simmons	1819353, 1819354, 1819355, 1819356, 1819357, 1819358, 1819359
SM 5310 B-00	07/27/2016			08/02/2016	Sofia Elnemr	1819360, 1819361, 1819362, 1819363, 1819364, 1819365, 1819366