

Chemical Analysis Report

SO-DIST-2016-01-14-01

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

Event Description: **SMP: Kissimmee, Arbuckle above Morgan, Arbuckle Branch**
Request ID: **RQ-2016-01-11-38**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901
Attn: Ben Paswater

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Certified by: Colin Wright, Environmental Administrator

Date Certified: 01-FEB-2016 11:51

A handwritten signature in black ink, appearing to read "Colin Wright", is written on a light-colored rectangular background.

Case Narrative

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

Results for the following analytical 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: ARBUCKLE BRANCH @ ARBUCKLE CREEK RD.

Collection Date/Time: 01/13/2016 12:15

Field ID: SD011316-1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1762856	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P297094	
	EPA 300.0 Rev. 2.1	Chloride	32		mg Cl/L	P297433	
		Sulfate	9.7		mg SO4/L	P297438	
	SM 2120 B	Color (true)	290		PCU	P297088	
	SM 2320 B-97	Total Alkalinity	15		mg CaCO3/L	P297212	
	SM 2540 C-97	TDS	162		mg/L	P297564	
	SM 2540 D-97	TSS	4	I	mg/L	P297504	
	SM 4500 F-C-97	Fluoride	0.052	I	mg F/L	P297206	
1762859	EPA 350.1 Rev. 2.0	Ammonia-N	0.038		mg N/L	P297605	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P297275	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P297293	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P297338	
	SM 5310 B-00	Organic Carbon	32		mg C/L	P297426	
1762862	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P297074	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: ARBUCKLE CR. ABOVE MORGAN HOLE BY RAMP

Collection Date/Time: 01/13/2016 13:00

Field ID: SD011316-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1762857	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P297094	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P297433	
		Sulfate	20		mg SO4/L	P297438	
	SM 2120 B	Color (true)	160		PCU	P297088	
	SM 2320 B-97	Total Alkalinity	15		mg CaCO3/L	P297212	
	SM 2540 C-97	TDS	106		mg/L	P297564	
	SM 2540 D-97	TSS	2	I	mg/L	P297504	
	SM 4500 F-C-97	Fluoride	0.070	I	mg F/L	P297206	
1762860	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P297605	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P297275	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P297293	
	EPA 365.1 Rev. 2.0	Total-P	0.043		mg P/L	P297339	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P297426	
1762863	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P297074	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: HARNEY POND CANAL @ SR SR70

Collection Date/Time: 01/13/2016 10:55

Field ID: SD011316-3

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1762858	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P297094	

Field ID: SD011316-3

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1762858	EPA 300.0 Rev. 2.1	Chloride	50		mg Cl/L	P297433	
		Sulfate	150		mg SO4/L	P297438	
	SM 2120 B	Color (true)	300		PCU	P297088	
	SM 2320 B-97	Total Alkalinity	40		mg CaCO3/L	P297212	
	SM 2540 C-97	TDS	446		mg/L	P297564	
	SM 2540 D-97	TSS	8	I	mg/L	P297504	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P297206	
1762861	EPA 350.1 Rev. 2.0	Ammonia-N	0.49		mg N/L	P297606	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.7		mg N/L	P297275	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.59		mg N/L	P297293	
	EPA 365.1 Rev. 2.0	Total-P	0.58		mg P/L	P297339	
	SM 5310 B-00	Organic Carbon	42		mg C/L	P297426	
1762864	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.46		mg P/L	P297074	

Ref. Method and Comment:
 SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P297094

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P297433

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P297438

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P297605

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P297606

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P297275

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297293

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P297338

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P297339

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P297074

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

Reference Method: SM 2120 B
Batch ID: P297088

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P297212

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

Reference Method: SM 2540 C-97
Batch ID: P297564

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P297504

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P297206

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P297426

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: P297433

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P297438

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P297605

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: P297606

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P297275

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297293

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	96.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P297338

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P297338

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: P297339

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P297074

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

Reference Method: SM 2320 B-97
Batch ID: P297212

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.1		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P297206

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	94 - 108

Reference Method: SM 5310 B-00
Batch ID: P297426

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P297433

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1762732	Chloride	106		P	90 - 110
1762819	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P297438

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1762686	Sulfate	97.0		P	90 - 110
1762687	Sulfate	96.8		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P297605

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1762859	Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P297606

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1762949	Ammonia-N	99.8	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P297275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1762846	Kjeldahl Nitrogen	105	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297293

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1762934	NO2NO3-N	93.9	95.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P297339

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1762860	Total-P	107	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P297074

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1762953	O-Phosphate-P	100	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P297206

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1762843	Fluoride	96.0	97.2	P/P	94 - 107

Reference Method: SM 5310 B-00
Batch ID: P297426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1762820	Organic Carbon	96.8	91.8	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P297094

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1762819	Turbidity	1.02	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P297433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1762732	Chloride	0.325	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P297438

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1762686	Sulfate	0.0804	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P297605

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1762859	Ammonia-N	0.626	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P297606

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1762949	Ammonia-N	0.633	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P297275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1762846	Kjeldahl Nitrogen	6.10	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297293

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1762934	NO2NO3-N	1.51	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P297338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1762734	Total-P	2.35	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P297339

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1762860	Total-P	0.878	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P297074

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1762953	O-Phosphate-P	1.49	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P297088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1762841	Color (true)	1.06	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P297212

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1762843	Total Alkalinity	0.873	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P297564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1762939	TDS	0.370	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P297206

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1762843	Fluoride	1.02	Spike	P	0 - 3.7

Reference Method: SM 5310 B-00
Batch ID: P297426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1762820	Organic Carbon	4.69	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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A67089

Included Lab Sample IDs: 1762862, 1762863, 1762864

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.0	98.2	P/P	90 - 110
O-Phosphate-P	99.0	98.3	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A67093

Included Lab Sample IDs: 1762856, 1762857, 1762858

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

Reference Method: SM 2120 B

Run ID: A67094

Included Lab Sample IDs: 1762856, 1762857, 1762858

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	85 - 115

Reference Method: SM 4500 F-C-97

Run ID: A67139

Included Lab Sample IDs: 1762856, 1762857, 1762858

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	99.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A67141

Included Lab Sample IDs: 1762856, 1762857, 1762858

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.1	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A67180

Included Lab Sample IDs: 1762859, 1762860, 1762861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	93.5	94.0	P/P	90 - 110
NO2NO3-N	95.0	94.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A67198

Included Lab Sample IDs: 1762859, 1762860, 1762861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	101	P/P	90 - 110
Kjeldahl Nitrogen	103	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A67206

Included Lab Sample IDs: 1762859, 1762861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	105	106	P/P	90 - 110
Total-P	106	105	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A67212

Included Lab Sample IDs: 1762859, 1762860, 1762861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.0	95.4	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A67217

Included Lab Sample IDs: 1762856, 1762857, 1762858

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	104	P/P	90 - 110
Chloride	104	104	P/P	90 - 110
Sulfate	101	99.7	P/P	90 - 110
Sulfate	99.7	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A67227

Included Lab Sample IDs: 1762860

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A67289

Included Lab Sample IDs: 1762859, 1762860, 1762861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	103	P/P	90 - 110
Ammonia-N	103	103	P/P	90 - 110
Ammonia-N	105	105	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				1.02	
EPA 300.0 Rev. 2.1	Chloride	105	106	105	0.325	
	Sulfate	99.3	97.0	96.8	0.0804	
EPA 350.1 Rev. 2.0	Ammonia-N	101	100	102		0.626
	Ammonia-N	99.9	99.8	101		0.633

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	105	98.5		6.10
EPA 353.2 Rev. 2.0	NO2NO3-N	96.5	93.9	95.4		1.51
EPA 365.1 Rev. 2.0	Total-P	101				2.35
	Total-P	104	107	106		0.878
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	100	102		1.49
SM 2120 B	Color (true)				1.06	
SM 2320 B-97	Total Alkalinity	99.1			0.873	
SM 2540 C-97	TDS				0.370	
SM 4500 F-C-97	Fluoride	97.0	96.0	97.2		1.02
SM 5310 B-00	Organic Carbon	95.0	96.8	91.8		4.69

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1762856, 1762857, 1762858
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1762856, 1762857, 1762858
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1762856, 1762857, 1762858
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1762859, 1762860, 1762861
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1762859, 1762860, 1762861
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1762859, 1762860, 1762861
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1762859, 1762860, 1762861
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1762862, 1762863, 1762864
SM 2120 B / E31780	True Color measured at 450 nm	1762856, 1762857, 1762858
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1762856, 1762857, 1762858
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1762856, 1762857, 1762858
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1762856, 1762857, 1762858
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1762856, 1762857, 1762858
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1762859, 1762860, 1762861

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	01/14/2016			01/14/2016 15:21	Sima Feizi	1762856, 1762857, 1762858
EPA 300.0 Rev. 2.1	01/14/2016			01/21/2016	Ping Hua	1762856, 1762857, 1762858
	01/14/2016			01/22/2016	Ping Hua	1762856, 1762857, 1762858
EPA 350.1 Rev. 2.0	01/14/2016			01/26/2016	Diana M. Turner	1762859, 1762860, 1762861
EPA 351.2 Rev. 2.0	01/14/2016	01/20/2016	Christopher Armour	01/21/2016	Bryan A. Werth	1762859, 1762860, 1762861
EPA 353.2 Rev. 2.0	01/14/2016			01/20/2016	Peter D. Kaus	1762859, 1762860, 1762861
EPA 365.1 Rev. 2.0	01/14/2016	01/20/2016	Christopher Armour	01/21/2016	Lipi Saha	1762859, 1762861
	01/14/2016	01/20/2016	Christopher Armour	01/22/2016	Lipi Saha	1762860
EPA 365.1 Rev. 2.0 dissolved	01/14/2016			01/14/2016 13:08	Julia Storbeck	1762862
	01/14/2016			01/14/2016 13:09	Julia Storbeck	1762863
	01/14/2016			01/14/2016 13:31	Julia Storbeck	1762864
SM 2120 B	01/14/2016			01/14/2016 14:59	Blanca Fach	1762856
	01/14/2016			01/14/2016 15:00	Blanca Fach	1762857, 1762858
SM 2320 B-97	01/14/2016			01/15/2016	Dale L. Simmons	1762856, 1762857, 1762858
SM 2540 C-97	01/14/2016			01/19/2016	Sima Feizi	1762856, 1762857, 1762858
SM 2540 D-97	01/14/2016			01/19/2016	Sima Feizi	1762856, 1762857, 1762858
SM 4500 F-C-97	01/14/2016			01/15/2016	Dale L. Simmons	1762856, 1762857, 1762858
SM 5310 B-00	01/14/2016			01/20/2016	Sofia Elnemr	1762859, 1762860, 1762861