Chemical Analysis Report

SO-DIST-2016-10-25-01

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

Event Description: **SMP: Lil Charlie Bowlegs**
Request ID: **RQ-2016-10-17-60**
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
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 18-NOV-2016 17:26

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: LITTLE CHARLEY BOWLEGS CK. HHSP **Collection Date/Time: 10/24/2016 10:55**

Field ID: G4SD102416-2 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1843755	EPA 180.1 Rev. 2.0	Turbidity	0.65		NTU	P313876	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P314863	
		Sulfate	4.3		mg SO4/L	P314865	
	SM 2120 B	Color (true)	290		PCU	P314005	
	SM 2320 B-97	Total Alkalinity	15		mg CaCO3/L	P314081	
	SM 2540 C-97	TDS	114		mg/L	P314600	
	SM 2540 D-97	TSS	2	I	mg/L	P314498	
	SM 4500 F-C-97	Fluoride	0.090	I	mg F/L	P314259	
1843757	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P314840	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.94		mg N/L	P314914	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P314116	
	EPA 365.1 Rev. 2.0	Total-P	0.39		mg P/L	P314533	
	SM 5310 B-00	Organic Carbon	28		mg C/L	P313854	
1843759	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.34		mg P/L	P313830	

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

Sample Location: FIELD BLANK **Collection Date/Time: 10/24/2016 11:10**

Field ID: G4SD102416-1 blank Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1843756	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P313877	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P314863	
		Sulfate	0.20	U	mg SO4/L	P314865	
	SM 2120 B	Color (true)	2.5	U	PCU	P314005	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P314081	
	SM 2540 C-97	TDS	15	U	mg/L	P314600	
	SM 2540 D-97	TSS	2	U	mg/L	P314498	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P314259	
1843758	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P314734	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P314916	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P314115	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P314533	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P313965	
1843760	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P313830	

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P313876

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P313877

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314863

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314865

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314734

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314840

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314914

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314916

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314115

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314116

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P314533

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P313830

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

Reference Method: SM 2120 B
Batch ID: P314005

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P314081

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

Reference Method: SM 2540 C-97
Batch ID: P314600

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P314498

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P314259

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P313854

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

Reference Method: SM 5310 B-00
Batch ID: P313965

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: P314863

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314865

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314734

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: P314840

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314914

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314916

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314115

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: P314116

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: P314533

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P313830

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

Reference Method: SM 2320 B-97
Batch ID: P314081

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

Reference Method: SM 4500 F-C-97
Batch ID: P314259

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P313854

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

Reference Method: SM 5310 B-00
Batch ID: P313965

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: P314863

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1843293	Chloride	97.3		P	90 - 110
1847287	Chloride	99.7	97.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314865

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1843293	Sulfate	93.5		P	90 - 110
1847287	Sulfate	93.6	92.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314734

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1843836	Ammonia-N	96.4	99.6	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314840

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1843204	Ammonia-N	101	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314914

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1843324	Kjeldahl Nitrogen	100	96.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314916

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1843632	Kjeldahl Nitrogen	105	99.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314115

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1842079	NO2NO3-N	104	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314116

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1843757	NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P314533

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1843838	Total-P	101	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P313830

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1843893	O-Phosphate-P	97.4	99.0	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P314259

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1844033	Fluoride	99.2	99.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P313854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1843188	Organic Carbon	100		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P313965

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1843989	Organic Carbon	100	96.8	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P313876

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1843568	Turbidity	4.12	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P313877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1843816	Turbidity	0.381	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314863

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1847287	Chloride	1.65	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314865

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1847287	Sulfate	0.848	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314734

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1843836	Ammonia-N	3.04	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314840

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1843204	Ammonia-N	1.58	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1843324	Kjeldahl Nitrogen	3.47	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314916

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1843632	Kjeldahl Nitrogen	5.02	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1842079	NO2NO3-N	1.39	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1843757	NO2NO3-N	0.425	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P314533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1843838	Total-P	1.64	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P313830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1843893	O-Phosphate-P	1.53	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P314005

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1843832	Color (true)	0.251	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P314081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844033	Total Alkalinity	0.466	Sample	P	0 - 4.8

Quality Assurance Report
Precision

Reference Method: SM 2540 C-97
Batch ID: P314600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844033	TDS	5.87	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P314259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844033	Fluoride	0.473	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P313854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1843188	Organic Carbon	0.553	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P313965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1843989	Organic Carbon	1.70	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 365.1 Rev. 2.0 dissolved
Run ID: A72418
Included Lab Sample IDs: 1843759, 1843760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	102	101	P/P	90 - 110
O-Phosphate-P	99.9	97.8	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A72424
Included Lab Sample IDs: 1843757

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A72431
Included Lab Sample IDs: 1843755, 1843756

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A72431
Included Lab Sample IDs: 1843755, 1843756

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

Reference Method: SM 5310 B-00
Run ID: A72451
Included Lab Sample IDs: 1843758

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

Reference Method: SM 2120 B
Run ID: A72466
Included Lab Sample IDs: 1843755, 1843756

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	104	105	P/P	85 - 115
Color (true)	105	107	P/P	85 - 115

Reference Method: SM 2320 B-97
Run ID: A72483
Included Lab Sample IDs: 1843755, 1843756

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A72497
Included Lab Sample IDs: 1843757, 1843758

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.0	P/P	90 - 110
NO2NO3-N	102	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A72536
Included Lab Sample IDs: 1843755, 1843756

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A72631
Included Lab Sample IDs: 1843757

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A72656
Included Lab Sample IDs: 1843758

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A72666
Included Lab Sample IDs: 1843758

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A72705
Included Lab Sample IDs: 1843757

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A72715
Included Lab Sample IDs: 1843755, 1843756

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	100	P/P	90 - 110
Sulfate	97.6	96.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A72786
Included Lab Sample IDs: 1843757, 1843758

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	104	P/P	90 - 110
Kjeldahl Nitrogen	106	99.0	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			Precision		
						LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						4.12	
	Turbidity						0.381	
EPA 300.0 Rev. 2.1	Chloride	97.8	99.7	97.9	97.3			1.65
	Sulfate	94.1	93.6	92.7	93.5			0.848
EPA 350.1 Rev. 2.0	Ammonia-N	102	96.4	99.6				3.04
	Ammonia-N	101	101	99.0				1.58
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	93.0	100	96.6				3.47
	Kjeldahl Nitrogen	101	105	99.1				5.02
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	102				1.39

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 353.2 Rev. 2.0	NO2NO3-N	104	102	101			0.425
EPA 365.1 Rev. 2.0	Total-P	98.1	101	103			1.64
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	97.4	99.0			1.53
SM 2120 B	Color (true)					0.251	
SM 2320 B-97	Total Alkalinity	103				0.466	
SM 2540 C-97	TDS					5.87	
SM 4500 F-C-97	Fluoride	98.4	99.2	99.8			0.473
SM 5310 B-00	Organic Carbon	101	100				0.553
	Organic Carbon	101	100	96.8			1.70

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1843755, 1843756
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1843755, 1843756
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1843755, 1843756
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1843757, 1843758
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1843757, 1843758
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1843757, 1843758
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1843757, 1843758
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1843759, 1843760
SM 2120 B / E31780	True Color measured at 450 nm	1843755, 1843756
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1843755, 1843756
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1843755, 1843756
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1843755, 1843756
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1843755, 1843756
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1843757, 1843758

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	10/25/2016			10/25/2016 16:42	Sima Feizi	1843755, 1843756
EPA 300.0 Rev. 2.1	10/25/2016			11/09/2016	Ping Hua	1843755, 1843756
EPA 350.1 Rev. 2.0	10/25/2016			11/07/2016	Sofia Elnemr	1843758
	10/25/2016			11/08/2016	Sofia Elnemr	1843757
EPA 351.2 Rev. 2.0	10/25/2016	11/10/2016	Adrian Shelby	11/14/2016	Joseph Suarez	1843757
	10/25/2016	11/10/2016	Martin Acosta	11/14/2016	Joseph Suarez	1843758
EPA 353.2 Rev. 2.0	10/25/2016			10/28/2016	Beverly Y. Sanders	1843757, 1843758
EPA 365.1 Rev. 2.0	10/25/2016	11/03/2016	Vijayalakshmi Reddy	11/04/2016	Lipi Saha	1843757
	10/25/2016	11/03/2016	Vijayalakshmi Reddy	11/07/2016	Lipi Saha	1843758
EPA 365.1 Rev. 2.0 dissolved	10/25/2016			10/25/2016 16:46	Julia Storbeck	1843760
	10/25/2016			10/25/2016 17:26	Julia Storbeck	1843759
SM 2120 B	10/25/2016			10/25/2016 15:36	Blanca Fach	1843756
	10/25/2016			10/25/2016 15:58	Blanca Fach	1843755
SM 2320 B-97	10/25/2016			10/28/2016	Dale L. Simmons	1843755, 1843756
SM 2540 C-97	10/25/2016			10/28/2016	Yijie Li	1843755, 1843756
SM 2540 D-97	10/25/2016			10/28/2016	Yijie Li	1843755, 1843756
SM 4500 F-C-97	10/25/2016			11/01/2016	Dale L. Simmons	1843755, 1843756
SM 5310 B-00	10/25/2016			10/25/2016	Julie Michelle Frank	1843757
	10/25/2016			10/26/2016	Julie Michelle Frank	1843758