Chemical Analysis Report

NW-DIST-2016-06-10-02

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

Event Description: **WBID 71 111 10D 10E**
Request ID: **RQ-2016-05-16-22**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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160 W Government St
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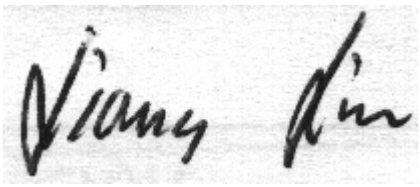
Certified by: Liang Lin, Environmental Administrator

Date Certified: 05-JUL-2016 14:29



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: ESCAMBIA RIVER HWY 184 BR **Collection Date/Time: 06/09/2016 11:10**

Field ID: G4NW0005 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1807447	EPA 180.1 Rev. 2.0	Turbidity	14		NTU	P306018	
	EPA 300.0 Rev. 2.1	Chloride	5.4		mg Cl/L	P306617	
		Sulfate	6.4		mg SO4/L	P306620	
	SM 2120 B	Color (true)	83		PCU	P305973	
	SM 2320 B-97	Total Alkalinity	28		mg CaCO3/L	P306171	
	SM 2540 C-97	TDS	70		mg/L	P306553	
	SM 2540 D-97	TSS	18		mg/L	P306465	
	SM 4500 F-C-97	Fluoride	0.038	I	mg F/L	P306175	
1807450	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P306426	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31		mg N/L	P306114	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.28		mg N/L	P306308	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P306315	
	SM 5310 B-00	Organic Carbon	5.0		mg C/L	P306390	
1807453	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.013		mg P/L	P306000	

Sample Location: ESCAMBIA R MOUTH WMS DITCH **Collection Date/Time: 06/09/2016 10:50**

Field ID: G4NW0006 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1807448	EPA 180.1 Rev. 2.0	Turbidity	15		NTU	P306018	
	EPA 300.0 Rev. 2.1	Chloride	5.4		mg Cl/L	P306617	
		Sulfate	6.3		mg SO4/L	P306620	
	SM 2120 B	Color (true)	80		PCU	P305973	
	SM 2320 B-97	Total Alkalinity	28		mg CaCO3/L	P306171	
	SM 2540 C-97	TDS	71		mg/L	P306553	
	SM 2540 D-97	TSS	18		mg/L	P306465	
	SM 4500 F-C-97	Fluoride	0.039	I	mg F/L	P306175	
1807451	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P306426	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25		mg N/L	P306114	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.28		mg N/L	P306309	
	EPA 365.1 Rev. 2.0	Total-P	0.049		mg P/L	P306315	
	SM 5310 B-00	Organic Carbon	4.7		mg C/L	P306390	
1807454	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.013		mg P/L	P306000	

Sample Location: UPPER ESCAMBIA RIVER @ POWER LINES **Collection Date/Time: 06/09/2016 12:05**

Field ID: G4NW0185 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1807449	EPA 180.1 Rev. 2.0	Turbidity	9.4		NTU	P306018	
	EPA 300.0 Rev. 2.1	Chloride	9.9	A	mg Cl/L	P306617	
		Sulfate	7.7	A	mg SO4/L	P306620	
	SM 2120 B	Color (true)	78		PCU	P305974	
	SM 2320 B-97	Total Alkalinity	28		mg CaCO3/L	P306171	

Field ID: G4NW0185 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1807449	SM 2540 C-97	TDS	88		mg/L	P306553	
	SM 2540 D-97	TSS	9	I	mg/L	P306465	
	SM 4500 F-C-97	Fluoride	0.038	I	mg F/L	P306175	
1807452	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P306426	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27		mg N/L	P306192	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.25		mg N/L	P306341	
	EPA 365.1 Rev. 2.0	Total-P	0.041		mg P/L	P306315	
	SM 5310 B-00	Organic Carbon	4.9		mg C/L	P306390	
1807455	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.009	I	mg P/L	P306000	

Ref. Method and Comment:
EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P306018

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306617

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306620

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P306426

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306114

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306192

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306308

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306309

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306341

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306315

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P306000

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

Reference Method: SM 2120 B
Batch ID: P305973

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P305974

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P306171

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

Reference Method: SM 2540 C-97
Batch ID: P306553

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P306465

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P306175

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P306390

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: P306617

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306620

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P306426

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306114

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306192

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306308

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306308

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306309

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306341

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306315

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P306000

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

Reference Method: SM 2320 B-97
Batch ID: P306171

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P306175

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P306390

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306617

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306617

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807449	Chloride	99.1		P	90 - 110
1807797	Chloride	99.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306620

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807449	Sulfate	97.7		P	90 - 110
1807797	Sulfate	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P306426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807647	Ammonia-N	100	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306114

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807419	Kjeldahl Nitrogen	96.2	95.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807390	NO2NO3-N	98.2	99.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306309

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807451	NO2NO3-N	98.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306341

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807452	NO2NO3-N	96.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306315

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807423	Total-P	99.8	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P306000

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807412	O-Phosphate-P	100	100	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P306175

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807383	Fluoride	97.6	97.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P306390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807440	Organic Carbon	98.5	100	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P306018

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807346	Turbidity	9.28	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306617

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807449	Chloride	0.0189	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807449	Sulfate	0.731	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P306426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807647	Ammonia-N	0.330	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306114

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807419	Kjeldahl Nitrogen	0.178	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306192

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306192

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807463	Kjeldahl Nitrogen	4.69	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807390	NO2NO3-N	0.772	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807451	NO2NO3-N	0.208	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306341

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807452	NO2NO3-N	1.11	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306315

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807423	Total-P	2.33	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P306000

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807412	O-Phosphate-P	0.167	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P305973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807410	Color (true)	0.403	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P305974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807461	Color (true)	0.663	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2320 B-97
Batch ID: P306171

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807383	Total Alkalinity	0.227	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P306553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807346	TDS	6.90	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P306465

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807346	TSS	5.41	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P306175

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807383	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P306390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807440	Organic Carbon	1.53	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: A69967
Included Lab Sample IDs: 1807447, 1807448, 1807449

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.2	P/P	90 - 115
Color (true)	99.2	99.5	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A69977
Included Lab Sample IDs: 1807453, 1807454, 1807455

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A69982
Included Lab Sample IDs: 1807447, 1807448, 1807449

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.5	P/P	95 - 105

Reference Method: SM 2320 B-97
Run ID: A70028
Included Lab Sample IDs: 1807447, 1807448, 1807449

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

Reference Method: SM 4500 F-C-97
Run ID: A70028
Included Lab Sample IDs: 1807447, 1807448, 1807449

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A70045
Included Lab Sample IDs: 1807447, 1807448, 1807449

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	99.8	P/P	90 - 110
Chloride	99.8	100	P/P	90 - 110
Sulfate	98.0	98.4	P/P	90 - 110
Sulfate	98.4	96.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A70076
Included Lab Sample IDs: 1807450, 1807451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.1	95.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A70077
Included Lab Sample IDs: 1807450, 1807451

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A70085
Included Lab Sample IDs: 1807452

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A70094
Included Lab Sample IDs: 1807452

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.4	93.1	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A70101
Included Lab Sample IDs: 1807450, 1807451, 1807452

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	97.6	P/P	90 - 110
Organic Carbon	99.2	98.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A70105
Included Lab Sample IDs: 1807450, 1807451, 1807452

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A70120
Included Lab Sample IDs: 1807450, 1807451, 1807452

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	102	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					9.28	
EPA 300.0 Rev. 2.1	Chloride	99.5	99.1	99.4		0.0189	
	Sulfate	97.5	97.7	98.3		0.731	
EPA 350.1 Rev. 2.0	Ammonia-N	100	100	100			0.330
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.8	96.2	95.9			0.178
	Kjeldahl Nitrogen	95.5					4.69
EPA 353.2 Rev. 2.0	NO2NO3-N	101	98.2	99.2			0.772
	NO2NO3-N	102	98.2				0.208
	NO2NO3-N	98.0	96.8				1.11
EPA 365.1 Rev. 2.0	Total-P	99.3	99.8	102			2.33
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	106	100	100			0.167
SM 2120 B	Color (true)					0.403	
	Color (true)					0.663	
SM 2320 B-97	Total Alkalinity	104				0.227	
SM 2540 C-97	TDS					6.90	
SM 2540 D-97	TSS					5.41	
SM 4500 F-C-97	Fluoride	97.9	97.6	97.6			0.0

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
SM 5310 B-00	Organic Carbon	98.8	98.5	100			1.53

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1807447, 1807448, 1807449
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1807447, 1807448, 1807449
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1807447, 1807448, 1807449
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1807450, 1807451, 1807452
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1807450, 1807451, 1807452
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1807450, 1807451, 1807452
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1807450, 1807451, 1807452
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1807453, 1807454, 1807455
SM 2120 B / E31780	True Color measured at 450 nm	1807447, 1807448, 1807449
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1807447, 1807448, 1807449
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1807447, 1807448, 1807449
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1807447, 1807448, 1807449
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1807447, 1807448, 1807449
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1807450, 1807451, 1807452

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	06/10/2016			06/10/2016 15:18	Rochelle Y Jackson	1807447, 1807448, 1807449
EPA 300.0 Rev. 2.1	06/10/2016			06/16/2016	Elisa J Lutz	1807447, 1807448, 1807449
EPA 350.1 Rev. 2.0	06/10/2016			06/17/2016	Diana M. Turner	1807450, 1807451, 1807452
EPA 351.2 Rev. 2.0	06/10/2016	06/14/2016	Sofia Elnemr	06/16/2016	Christopher Armour	1807450, 1807451
	06/10/2016	06/15/2016	Sofia Elnemr	06/16/2016	Christopher Armour	1807452
EPA 353.2 Rev. 2.0	06/10/2016			06/15/2016	Beverly Y. Sanders	1807450, 1807451
	06/10/2016			06/16/2016	Beverly Y. Sanders	1807452
EPA 365.1 Rev. 2.0	06/10/2016	06/16/2016	Vijayalakshmi Reddy	06/17/2016	Lipi Saha	1807450, 1807451, 1807452
EPA 365.1 Rev. 2.0 dissolved	06/10/2016			06/10/2016 15:18	Julia Storbeck	1807453
	06/10/2016			06/10/2016 15:19	Julia Storbeck	1807454
	06/10/2016			06/10/2016 15:20	Julia Storbeck	1807455
SM 2120 B	06/10/2016			06/10/2016 12:07	Rochelle Y Jackson	1807447
	06/10/2016			06/10/2016 12:08	Rochelle Y Jackson	1807448
	06/10/2016			06/10/2016 12:12	Rochelle Y Jackson	1807449
SM 2320 B-97	06/10/2016			06/14/2016	Dale L. Simmons	1807447, 1807448, 1807449
SM 2540 C-97	06/10/2016			06/14/2016	Yijie Li	1807447, 1807448, 1807449
SM 2540 D-97	06/10/2016			06/14/2016	Yijie Li	1807447, 1807448, 1807449
SM 4500 F-C-97	06/10/2016			06/14/2016	Dale L. Simmons	1807447, 1807448, 1807449
SM 5310 B-00	06/10/2016			06/17/2016	Diana M. Turner	1807450, 1807451, 1807452