

Chemical Analysis Report

SW-DIST-2016-10-13-01

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

Event Description: **Mason Crk**
Request ID: **RQ-2016-10-10-25**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 08-NOV-2016 13:20



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: MASON CREEK @ MOUTH

Collection Date/Time: 10/12/2016 12:20

Field ID: G5SW0005

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1840427	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P313128	
	SM 2320 B-97	Total Alkalinity	162	A	mg CaCO3/L	P313517	
	SM 2540 D-97	TSS	10	I	mg/L	P313782	
	SM 4500 F-C-97	Fluoride	0.36		mg F/L	P313520	
1840428	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P314072	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P314283	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.021		mg N/L	P313899	
	EPA 365.1 Rev. 2.0	Total-P	0.004	U	mg P/L	P314059	
	SM 5310 B-00	Organic Carbon	5.5		mg C/L	P313265	
1840429	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P313146	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P313128

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P314072

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P314283

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P313899

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P314059

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P313146

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P313517

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

Reference Method: SM 2540 D-97
Batch ID: P313782

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P313520

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P313265

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314072

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314283

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P313899

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P314059

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P313146

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 dissolved
Batch ID: P313146

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

Reference Method: SM 2320 B-97
Batch ID: P313517

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

Reference Method: SM 4500 F-C-97
Batch ID: P313520

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.7		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P313265

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314072

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1840315	Ammonia-N	104	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1841581	Kjeldahl Nitrogen	98.9	97.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P313899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1840428	NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P314059

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1840343	Total-P	92.3	93.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P313146

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P313146

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1840429	O-Phosphate-P	98.3	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P313520

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1840427	Fluoride	97.1	99.1	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P313265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1840234	Organic Carbon	91.6	93.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P313128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1840266	Turbidity	1.10	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1840315	Ammonia-N	1.42	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1841581	Kjeldahl Nitrogen	1.24	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P313899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1840428	NO2NO3-N	1.32	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P314059

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1840343	Total-P	1.41	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P313146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1840429	O-Phosphate-P	1.82	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P313517

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1840427	Total Alkalinity	0.169	Sample	P	0 - 4.8

Reference Method: SM 2540 D-97
Batch ID: P313782

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1840533	TSS	2.47	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P313520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1840427	Fluoride	1.40	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P313265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1840234	Organic Carbon	1.92	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A72211
Included Lab Sample IDs: 1840427

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A72213
Included Lab Sample IDs: 1840429

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A72250
Included Lab Sample IDs: 1840428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	97.4	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A72322
Included Lab Sample IDs: 1840427

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A72322
Included Lab Sample IDs: 1840427

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A72436
Included Lab Sample IDs: 1840428

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A72480
Included Lab Sample IDs: 1840428

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A72525
Included Lab Sample IDs: 1840428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A72577
Included Lab Sample IDs: 1840428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	97.6	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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					1.10	
EPA 350.1 Rev. 2.0	Ammonia-N	102	103	104			1.42
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	98.9	97.5			1.24
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	104	103			1.32
EPA 365.1 Rev. 2.0	Total-P	101	92.3	93.6			1.41
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	98.3	100			1.82
SM 2320 B-97	Total Alkalinity	103				0.169	
SM 2540 D-97	TSS					2.47	
SM 4500 F-C-97	Fluoride	98.7	97.1	99.1			1.40
SM 5310 B-00	Organic Carbon	96.3	91.6	93.8			1.92

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1840427
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1840428
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1840428
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1840428
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1840428
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1840429
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1840427
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1840427
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1840427
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1840428

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	10/13/2016			10/13/2016 15:12	Sima Feizi	1840427
EPA 350.1 Rev. 2.0	10/13/2016			10/27/2016	Sofia Elnemr	1840428
EPA 351.2 Rev. 2.0	10/13/2016	11/01/2016	Adrian Shelby	11/02/2016	Joseph Suarez	1840428
EPA 353.2 Rev. 2.0	10/13/2016			10/26/2016	Beverly Y. Sanders	1840428
EPA 365.1 Rev. 2.0	10/13/2016	10/27/2016	Vijayalakshmi Reddy	10/31/2016	Lipi Saha	1840428
EPA 365.1 Rev. 2.0 dissolved	10/13/2016			10/13/2016 15:37	Julia Storbeck	1840429
SM 2320 B-97	10/13/2016			10/19/2016	Dale L. Simmons	1840427
SM 2540 D-97	10/13/2016			10/17/2016	Sima Feizi	1840427
SM 4500 F-C-97	10/13/2016			10/19/2016	Dale L. Simmons	1840427
SM 5310 B-00	10/13/2016			10/15/2016	Julie Michelle Frank	1840428