Chemical Analysis Report

CEN-DIST-2017-07-18-02

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

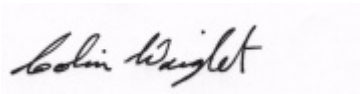
Event Description: **Lake Jessup_Haynes Creek BMAP**
Request ID: **RQ-2017-07-17-41**
Customer: **CEN-DIST**
Project ID: **LKJES-BMAP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 03-AUG-2017 12:09



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 groups are included in this report: Nutrients and Pesticides.

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: Haynes Creek @ 300m DS of CR44 **Collection Date/Time: 07/17/2017 11:00**

Field ID: G1CE0023 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1913879	EPA 8321B	Sucralose**	0.15		ug/L	P328677	

Sample Location: Haynes Creek @ just DS of Burell Lock **Collection Date/Time: 07/17/2017 11:20**

Field ID: G1CE0063 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1913880	EPA 8321B	Sucralose**	0.14		ug/L	P328677	

Sample Location: Sweetwater Creek @ FL Ave. **Collection Date/Time: 07/17/2017 12:55**

Field ID: G2CE0123 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1913881	EPA 350.1 Rev. 2.0	Ammonia-N	0.092		mg N/L	P328723	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P328715	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P328768	MS
	EPA 365.1 Rev. 2.0	Total-P	0.26		mg P/L	P328832	
1913883	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.22		mg P/L	P328691	
1913885	SM 2540 D-97	TSS	2	I	mg/L	P329299	

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: Salt Creek @ Packard Ave **Collection Date/Time: 07/17/2017 13:15**

Field ID: G2CE0088 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1913882	EPA 350.1 Rev. 2.0	Ammonia-N	0.075		mg N/L	P328723	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P328715	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P328768	MS
	EPA 365.1 Rev. 2.0	Total-P	0.34		mg P/L	P328753	
1913884	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.30		mg P/L	P328691	
1913886	SM 2540 D-97	TSS	3	I	mg/L	P329299	

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 350.1 Rev. 2.0
Batch ID: P328723

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328715

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: P328768

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328753

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328832

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328691

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

Reference Method: EPA 8321B
Batch ID: P328677

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2540 D-97
Batch ID: P329299

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328723

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328715

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328768

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: P328768

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328753

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328832

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328691

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.9		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P328677

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	96.2		P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328723

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913869	Ammonia-N	97.2	97.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913517	Kjeldahl Nitrogen	95.9	96.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328768

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913514	NO2NO3-N	93.0	88.5	P/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328753

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328753

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913516	Total-P	97.0	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328832

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913124	Total-P	99.8	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913870	O-Phosphate-P	97.2	99.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P328677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913607	Sucralose	96.7	101	P/P	40 - 150

Quality Assurance Report
Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328723

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913869	Ammonia-N	0.144	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913517	Kjeldahl Nitrogen	0.562	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328768

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913514	NO2NO3-N	4.96	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328753

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913516	Total-P	1.98	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328832

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913124	Total-P	0.339	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913870	O-Phosphate-P	1.94	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P328677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913607	Sucralose	4.75	Spike	P	0 - 30

* 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
Surrogates

Lab Sample ID: 1913879
Field Sample ID: G1CE0023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	112	P	40 - 160

Lab Sample ID: 1913880
Field Sample ID: G1CE0063

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	111	P	40 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A77784
Included Lab Sample IDs: 1913883, 1913884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	101	P/P	90 - 110
O-Phosphate-P	98.6	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A77794
Included Lab Sample IDs: 1913881, 1913882

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A77794
Included Lab Sample IDs: 1913881, 1913882

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.3	98.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A77806
Included Lab Sample IDs: 1913881, 1913882

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A77828
Included Lab Sample IDs: 1913882

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.4	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A77834
Included Lab Sample IDs: 1913881, 1913882

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.5	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A77863
Included Lab Sample IDs: 1913881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.6	99.0	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A78008
Included Lab Sample IDs: 1913879, 1913880

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	85.9	97.0	P/P	60 - 160

* 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 350.1 Rev. 2.0	Ammonia-N	98.8	97.2	97.3			0.144
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	95.9	96.9			0.562
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	93.0	88.5			4.96
EPA 365.1 Rev. 2.0	Total-P	97.6	97.0	99.1			1.98

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 365.1 Rev. 2.0	Total-P	95.6	99.8	99.3			0.339
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9	97.2	99.1			1.94
EPA 8321B	Sucralose	96.2	96.7	101			4.75

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1913881, 1913882
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1913881, 1913882
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1913881, 1913882
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1913881, 1913882
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1913883, 1913884
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1913879, 1913880
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1913885, 1913886

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 350.1 Rev. 2.0	07/18/2017			07/18/2017	Sofia Elnemr	1913881, 1913882
EPA 351.2 Rev. 2.0	07/18/2017	07/19/2017	Adrian Shelby	07/20/2017	Joseph Suarez	1913881, 1913882
EPA 353.2 Rev. 2.0	07/18/2017			07/19/2017	Beverly Y. Sanders	1913881, 1913882
EPA 365.1 Rev. 2.0	07/18/2017	07/19/2017	Adrian Shelby	07/20/2017	Lipi Saha	1913882
	07/18/2017	07/20/2017	Adrian Shelby	07/21/2017	Lipi Saha	1913881
EPA 365.1 Rev. 2.0 dissolved	07/18/2017			07/18/2017 14:18	Ping Hua	1913884
	07/18/2017			07/18/2017 14:32	Ping Hua	1913883
EPA 8321B	07/18/2017	07/26/2017	Julie Michelle Frank	07/26/2017	Mohammad Ghaffari	1913879, 1913880
SM 2540 D-97	07/18/2017			07/21/2017	Yijie Li	1913885, 1913886