

Chemical Analysis Report

CEN-DIST-2018-07-31-03

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

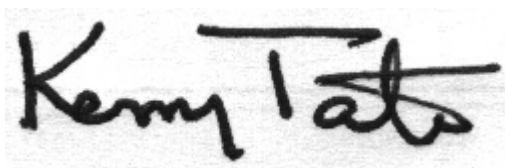
Event Description: **Lake Jessup_Haynes Creek BMAP**
Request ID: **RQ-2018-07-23-39**
Customer: **CEN-DIST**
Project ID: **LKJES-BMAP**

Send Reports to:
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 15-AUG-2018 10:21

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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 CR 44

Collection Date/Time: 07/30/2018 10:00

Field ID: G1CE0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2011995	EPA 8321B	Sucralose**	0.21		ug/L	P349535	

Sample Location: Haynes Creek @ just DS of Burell Lock

Collection Date/Time: 07/30/2018 10:15

Field ID: G1CE0063

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2011996	EPA 8321B	Sucralose**	0.20		ug/L	P349535	

Sample Location: Sweetwater Creek @ Florida Avenue

Collection Date/Time: 07/30/2018 11:53

Field ID: G2CE0123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2011997	EPA 350.1 Rev. 2.0	Ammonia-N	0.091		mg N/L	P349574	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P349471	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P349492	
	EPA 365.1 Rev. 2.0	Total-P	0.37		mg P/L	P349561	
2011999	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.38		mg P/L	P349455	
2012001	SM 2540 D-97	TSS	6	I	mg/L	P349954	

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 Avenue

Collection Date/Time: 07/30/2018 12:13

Field ID: G2CE0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2011998	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P349574	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.7		mg N/L	P349537	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.091		mg N/L	P349493	
	EPA 365.1 Rev. 2.0	Total-P	0.29		mg P/L	P349561	
2012000	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.19		mg P/L	P349455	
2012002	SM 2540 D-97	TSS	10		mg/L	P349954	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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: P349574

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349471

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349537

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349492

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349493

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349561

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349455

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

Reference Method: EPA 8321B
Batch ID: P349535

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2540 D-97
Batch ID: P349954

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: P349574

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: P349471

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349537

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: P349492

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	102		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349493

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349561

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349455

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

Reference Method: EPA 8321B
Batch ID: P349535

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	114		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349574

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011881	Ammonia-N	95.2	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349471

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011977	Kjeldahl Nitrogen	97.1	97.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349492

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011880	NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349493

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2012005	NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011976	Total-P	99.2	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349455

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011979	O-Phosphate-P	92.9	94.2	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P349535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011995	Sucralose	111	109	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349574

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011881	Ammonia-N	3.74	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349471

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011977	Kjeldahl Nitrogen	0.438	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011998	Kjeldahl Nitrogen	0.242	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011880	NO2NO3-N	0.487	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349493

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2012005	NO2NO3-N	1.45	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011976	Total-P	2.54	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011979	O-Phosphate-P	1.39	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P349535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011995	Sucralose	1.55	Spike	P	0 - 30

Quality Assurance Report

Precision

* 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: 2011995
Field Sample ID: G1CE0023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	90.2	P	40 - 160

Lab Sample ID: 2011996
Field Sample ID: G1CE0063

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	85.4	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A85586

Included Lab Sample IDs: 2011999, 2012000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.2	97.8	P/P	90 - 110
O-Phosphate-P	98.6	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A85611

Included Lab Sample IDs: 2011997, 2011998

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A85631

Included Lab Sample IDs: 2011997

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A85648

Included Lab Sample IDs: 2011997, 2011998

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.2	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A85666

Included Lab Sample IDs: 2011997, 2011998

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A85667

Included Lab Sample IDs: 2011998

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.4	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A85787

Included Lab Sample IDs: 2011995, 2011996

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.0	106	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	LCS	Precision SMP	MS
EPA 350.1 Rev. 2.0	Ammonia-N	101	95.2 99.2			3.74
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	97.1 97.7			0.438
	Kjeldahl Nitrogen	101				0.242
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102 103			0.487
	NO2NO3-N	102	102 104			1.45
EPA 365.1 Rev. 2.0	Total-P	103	99.2 102			2.54
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	92.9 94.2			1.39
EPA 8321B	Sucralose	114	111 109			1.55

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2011997, 2011998
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2011997, 2011998
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2011997, 2011998
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2011997, 2011998
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2011999, 2012000
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2011995, 2011996
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2012001, 2012002

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	07/31/2018			08/02/2018 13:04	Ping Hua	2011997
	07/31/2018			08/02/2018 13:05	Ping Hua	2011998
EPA 351.2 Rev. 2.0	07/31/2018	08/01/2018 10:30	Adrian Shelby	08/02/2018 10:07	Joseph Suarez	2011997
	07/31/2018	08/02/2018 11:00	Adrian Shelby	08/03/2018 09:12	Joseph Suarez	2011998
EPA 353.2 Rev. 2.0	07/31/2018			08/01/2018 12:13	Lauren Bottorf	2011997
	07/31/2018			08/01/2018 12:26	Lauren Bottorf	2011998
EPA 365.1 Rev. 2.0	07/31/2018	08/02/2018 11:50	Sima Feizi	08/03/2018 09:17	Beverly Y. Sanders	2011997
	07/31/2018	08/02/2018 11:50	Sima Feizi	08/03/2018 09:18	Beverly Y. Sanders	2011998
EPA 365.1 Rev. 2.0 dissolved	07/31/2018			07/31/2018 15:01	Julia Storbeck	2012000
	07/31/2018			07/31/2018 15:15	Julia Storbeck	2011999
EPA 8321B	07/31/2018	08/03/2018 09:00	Mohammad Ghaffari	08/09/2018 03:14	Mohammad Ghaffari	2011995
	07/31/2018	08/03/2018 09:00	Mohammad Ghaffari	08/09/2018 03:58	Mohammad Ghaffari	2011996
SM 2540 D-97	07/31/2018			08/03/2018 16:45	Yijie Li	2012001, 2012002