

Chemical Analysis Report

CEN-DIST-2019-09-11-02

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-2019-09-09-41**
Customer: **CEN-DIST**
Project ID: **LKJES-BMAP**

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

Date Certified: 02-OCT-2019 10:45

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 by the Florida Department of Health Environmental Laboratory Certification Program 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 @ JUST DS OF BURELL
LOCK**

Collection Date/Time: 09/10/2019 11:50

Field ID: G1CE0063

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2118230	EPA 8321B	Sucralose**	0.26		ug/L	P371037	

Sample Location: HAYNES CREEK @ 300M DS OF CR 44

Collection Date/Time: 09/10/2019 11:59

Field ID: G1CE0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2118231	EPA 8321B	Sucralose**	0.22		ug/L	P371037	

Sample Location: SWEETWATER CREEK @ FLORIDA AVE

Collection Date/Time: 09/10/2019 14:11

Field ID: G2CE0123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2118232	EPA 350.1 Rev. 2.0	Ammonia-N	0.078		mg N/L	P370765	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P370714	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P370633	
	EPA 365.1 Rev. 2.0	Total-P	0.28		mg P/L	P370645	
2118234	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.22		mg P/L	P370501	
2118236	SM 2540 D-97	TSS	4	I	mg/L	P371159	

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: 09/10/2019 14:25

Field ID: G2CE0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2118233	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P370765	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P370714	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P370633	
	EPA 365.1 Rev. 2.0	Total-P	0.28		mg P/L	P370645	
2118235	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.22		mg P/L	P370501	
2118237	SM 2540 D-97	TSS	3	I	mg/L	P371159	

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: P370765

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370714

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370633

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370645

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370501

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

Reference Method: EPA 8321B
Batch ID: P371037

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2540 D-97
Batch ID: P371159

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: P370765

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: P370714

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370633

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370645

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370501

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

Reference Method: EPA 8321B
Batch ID: P371037

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	123		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2118269	Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370714

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2118232	Kjeldahl Nitrogen	99.6	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370633

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2118232	NO2NO3-N	98.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370645

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2118202	Total-P	98.3	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370501

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2117965	O-Phosphate-P	96.4	96.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P371037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2117399	Sucralose	111	81.3	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2118269	Ammonia-N	0.463	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370714

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2118232	Kjeldahl Nitrogen	1.41	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2118232	NO2NO3-N	0.234	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370645

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2118202	Total-P	2.16	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370501

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117965	O-Phosphate-P	0.489	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P371037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117399	Sucralose	25.2	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: 2118230
Field Sample ID: G1CE0063

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	147	P	30 - 160

Lab Sample ID: 2118231
Field Sample ID: G1CE0023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	135	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A94137

Included Lab Sample IDs: 2118234, 2118235

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.9	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A94193

Included Lab Sample IDs: 2118232, 2118233

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94245

Included Lab Sample IDs: 2118232, 2118233

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94258

Included Lab Sample IDs: 2118232, 2118233

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94277

Included Lab Sample IDs: 2118232, 2118233

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	103	P/P	90 - 110
Kjeldahl Nitrogen	103	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94548

Included Lab Sample IDs: 2118230, 2118231

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	100	105	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	102	101	100			0.463
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.1	99.6	102			1.41
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	98.2				0.234
EPA 365.1 Rev. 2.0	Total-P	99.6	98.3	101			2.16
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	96.4	96.9			0.489
EPA 8321B	Sucralose	123	111	81.3			25.2

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2118232, 2118233
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2118232, 2118233
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2118232, 2118233
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2118232, 2118233
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2118234, 2118235
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2118230, 2118231
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2118236, 2118237

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	09/11/2019			09/16/2019 13:02	Ping Hua	2118232
	09/11/2019			09/16/2019 13:04	Ping Hua	2118233
EPA 351.2 Rev. 2.0	09/11/2019	09/16/2019 14:05	Sima Feizi	09/17/2019 13:11	Julia Storbeck	2118232
	09/11/2019	09/16/2019 14:05	Sima Feizi	09/17/2019 13:31	Julia Storbeck	2118233
EPA 353.2 Rev. 2.0	09/11/2019			09/13/2019 09:06	Beverly Y. Sanders	2118232
	09/11/2019			09/13/2019 09:11	Beverly Y. Sanders	2118233
EPA 365.1 Rev. 2.0	09/11/2019	09/13/2019 13:45	Lipi Saha	09/16/2019 13:00	Rosalyn Ballman	2118232
	09/11/2019	09/13/2019 13:45	Lipi Saha	09/16/2019 13:01	Rosalyn Ballman	2118233
EPA 365.1 Rev. 2.0 dissolved	09/11/2019			09/11/2019 16:22	Jhamieka S. Greenwood	2118234
	09/11/2019			09/11/2019 16:23	Jhamieka S. Greenwood	2118235
EPA 8321B	09/11/2019	09/25/2019 11:30	Rebecca Ware	09/27/2019 12:27	Rebecca Ware	2118230
	09/11/2019	09/25/2019 11:30	Rebecca Ware	09/27/2019 12:39	Rebecca Ware	2118231
SM 2540 D-97	09/11/2019			09/17/2019 14:10	Yijie Li	2118236, 2118237