

Chemical Analysis Report

CEN-DIST-2017-02-15-01

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

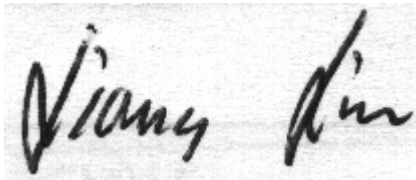
Event Description: **Lake Jessup_Haynes Creek BMAP**
Request ID: **RQ-2017-02-13-58**
Customer: **CEN-DIST**
Project ID: **LKJES-BMAP**

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, PhD, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 27-FEB-2017 16:14

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

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: SALT CREEK @ PACKARD AV

Collection Date/Time: 02/14/2017 14:12

Field ID: 2990_20010763

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1872932	EPA 350.1 Rev. 2.0	Ammonia-N	0.073		mg N/L	P320243	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P320169	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P320280	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P319966	
1872934	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P319913	
1872936	SM 2540 D-97	TSS	4	I	mg/L	P320388	

Sample Location: HAYNES CREEK @ 300M DS OF CR44

Collection Date/Time: 02/14/2017 11:34

Field ID: 2817A_20020642

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1872938	EPA 8321B	Sucralose**	0.095		ug/L	P319885	

Sample Location: SWEETWATER CREEK @ FLORIDA AVE

Collection Date/Time: 02/14/2017 14:41

Field ID: 2992_20010768

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1872933	EPA 350.1 Rev. 2.0	Ammonia-N	0.056		mg N/L	P320244	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P320169	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P320280	
	EPA 365.1 Rev. 2.0	Total-P	0.097		mg P/L	P319966	
1872935	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.080		mg P/L	P319913	
1872937	SM 2540 D-97	TSS	5	I	mg/L	P320388	

Ref. Method and Comment:

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: HAYNES CREEK @ JUST DS OF BURELL LOCK

Collection Date/Time: 02/14/2017 11:55

Field ID: 2817A_20020168

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1872939	EPA 8321B	Sucralose**	0.078		ug/L	P319885	

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P320243

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P320244

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320169

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320280

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319966

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319913

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

Reference Method: EPA 8321B
Batch ID: P319885

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2540 D-97
Batch ID: P320388

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: P320243

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320244

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: P320169

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320169

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320280

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319966

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319913

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

Reference Method: EPA 8321B
Batch ID: P319885

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	83.2		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320243

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1872819	Ammonia-N	97.3	95.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320169

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1872947	Kjeldahl Nitrogen	103	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320280

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1872876	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319966

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
 Batch ID: P319966

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1872946	Total-P	97.4	93.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P319913

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873007	O-Phosphate-P	98.6	97.9	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P319885

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1872975	Sucralose	92.7	119	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P320243

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1872819	Ammonia-N	1.50	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P320244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1872933	Ammonia-N	1.81	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P320169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1872947	Kjeldahl Nitrogen	0.438	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P320280

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1872876	NO2NO3-N	0.487	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P319966

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1872946	Total-P	3.90	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319913

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873007	O-Phosphate-P	0.587	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P319885

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1872975	Sucralose	19.3	Spike	P	0 - 30

Reference Method: SM 2540 D-97
Batch ID: P320388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873090	TSS	9.84	Sample	P	0 - 10

* 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: 1872938
Field Sample ID: 2817A_20020642

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	96.0	P	40 - 150

Lab Sample ID: 1872939
Field Sample ID: 2817A_20020168

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	92.0	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A74500
Included Lab Sample IDs: 1872934, 1872935

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

Reference Method: EPA 8321B
Run ID: A74502
Included Lab Sample IDs: 1872938, 1872939

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A74502

Included Lab Sample IDs: 1872938, 1872939

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	146	110	P/P	60 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74579

Included Lab Sample IDs: 1872932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.3	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74611

Included Lab Sample IDs: 1872933

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74627

Included Lab Sample IDs: 1872932, 1872933

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74641

Included Lab Sample IDs: 1872932, 1872933

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74663

Included Lab Sample IDs: 1872932, 1872933

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	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 SMP	MS
			LCS			
EPA 350.1 Rev. 2.0	Ammonia-N	98.5	97.3	95.5		1.50
	Ammonia-N	102				1.81
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	103	103		0.438

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 353.2 Rev. 2.0	NO2NO3-N	105	103	102			0.487
EPA 365.1 Rev. 2.0	Total-P	100	97.4	93.2			3.90
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.3	98.6	97.9			0.587
EPA 8321B	Sucralose	83.2	92.7	119			19.3
SM 2540 D-97	TSS					9.84	

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1872932, 1872933
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1872932, 1872933
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1872932, 1872933
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1872932, 1872933
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1872934, 1872935
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1872938, 1872939
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1872936, 1872937

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	02/15/2017			02/21/2017	Sofia Elnemr	1872932, 1872933
EPA 351.2 Rev. 2.0	02/15/2017	02/21/2017	Adrian Shelby	02/23/2017	Joseph Suarez	1872932, 1872933
EPA 353.2 Rev. 2.0	02/15/2017			02/22/2017	Beverly Y. Sanders	1872932, 1872933
EPA 365.1 Rev. 2.0	02/15/2017	02/16/2017	Adrian Shelby	02/17/2017	Lipi Saha	1872932
	02/15/2017	02/16/2017	Adrian Shelby	02/21/2017	Lipi Saha	1872933
EPA 365.1 Rev. 2.0 dissolved	02/15/2017			02/15/2017 14:58	Julia Storbeck	1872935
	02/15/2017			02/15/2017 15:10	Julia Storbeck	1872934
EPA 8321B	02/15/2017	02/15/2017	Mohammad Ghaffari	02/15/2017	Mohammad Ghaffari	1872938, 1872939
SM 2540 D-97	02/15/2017			02/17/2017	Yijie Li	1872936, 1872937