

Chemical Analysis Report

CEN-DIST-2018-06-01-02

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

Event Description: **Silver lake (Lake Co) 2825A**
Request ID: **RQ-2018-05-28-35**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 27-JUN-2018 11:46

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 group are included in this report: 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: Silver Lake @ Center

Collection Date/Time: 05/31/2018 10:58

Field ID: G1CE0007

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996864	EPA 8321B	2,4-D	0.016		ug/L	P346244	
		Bentazon	8.0E-04	U	ug/L	P346244	
		MCP	0.0020	U	ug/L	P346244	
		Triclopyr**	0.0040	U	ug/L	P346244	
		Imidacloprid	0.0020	U	ug/L	P346244	MS
		Diuron	0.0020	U	ug/L	P346244	
		Pyraclostrobin**	0.0020	U	ug/L	P346244	
		Primidone**	0.0040	U	ug/L	P346244	
		Linuron	0.0040	U	ug/L	P346244	
		Acetaminophen**	0.0080	U	ug/L	P346244	
		Fenuron	0.016	U	ug/L	P346244	
		Imazapyr**	0.0040	U	ug/L	P346244	
		Carbamazepine**	4.0E-04	U	ug/L	P346244	
		Fluridone**	4.0E-04	U	ug/L	P346244	
		Hydrocodone**	8.0E-04	U	ug/L	P346244	
		Sucralose**	0.25		ug/L	P346269	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P346244

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P346269

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P346244

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	65.9		P	40 - 150
Acetaminophen	117		P	30 - 150
Bentazon	77.3		P	30 - 150
Carbamazepine	105		P	40 - 150
Diuron	95.1		P	40 - 150
Fenuron	101		P	40 - 150
Fluridone	101		P	40 - 150
Hydrocodone	94.7		P	40 - 150
Imazapyr	86.4		P	40 - 150
Imidacloprid	125		P	40 - 160
Linuron	92.1		P	40 - 150
MCPP	117		P	40 - 150
Primidone	120		P	40 - 150
Pyraclostrobin	101		P	40 - 150
Triclopyr	109		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P346269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	91.1		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P346244

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996578	2,4-D	59.0	45.5	P/P	40 - 150
1996578	Acetaminophen	113	117	P/P	30 - 150
1996578	Bentazon	65.3	60.6	P/P	30 - 150
1996578	Carbamazepine	99.4	98.2	P/P	40 - 150
1996578	Diuron	70.0	70.9	P/P	40 - 150
1996578	Fenuron	84.3	83.8	P/P	40 - 150
1996578	Fluridone	80.7	82.0	P/P	40 - 150
1996578	Hydrocodone	73.0	82.1	P/P	40 - 150
1996578	Imazapyr	58.8	61.4	P/P	40 - 150
1996578	Imidacloprid	199	189	F/F	40 - 160
1996578	Linuron	73.5	79.9	P/P	40 - 150
1996578	MCPP	141	138	P/P	40 - 150
1996578	Primidone	102	98.4	P/P	40 - 150
1996578	Pyraclostrobin	94.2	90.2	P/P	40 - 150
1996578	Triclopyr	129	135	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P346269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996704	Sucralose	91.9	90.3	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P346244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996578	2,4-D	16.3	Spike	P	0 - 30
1996578	Acetaminophen	3.00	Spike	P	0 - 30
1996578	Bentazon	7.47	Spike	P	0 - 30
1996578	Carbamazepine	1.20	Spike	P	0 - 30
1996578	Diuron	0.523	Spike	P	0 - 30
1996578	Fenuron	0.572	Spike	P	0 - 30
1996578	Fluridone	1.66	Spike	P	0 - 30
1996578	Hydrocodone	11.8	Spike	P	0 - 30
1996578	Imazapyr	2.50	Spike	P	0 - 30
1996578	Imidacloprid	4.68	Spike	P	0 - 30
1996578	Linuron	8.33	Spike	P	0 - 30
1996578	MCP	2.29	Spike	P	0 - 30
1996578	Primidone	4.04	Spike	P	0 - 30
1996578	Pyraclostrobin	4.38	Spike	P	0 - 30
1996578	Triclopyr	4.50	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P346269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996704	Sucralose	1.66	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: 1996864
Field Sample ID: G1CE0007

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	87.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	63.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	90.2	P	30 - 160
EPA 8321B	Diuron-d6	56.2	P	30 - 160
EPA 8321B	Primidone-d5	72.6	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A84402
Included Lab Sample IDs: 1996864

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	83.4	87.7	P/P	60 - 150

Reference Method: EPA 8321B
Run ID: A84454
Included Lab Sample IDs: 1996864

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.3	87.1	P/P	50 - 150
Bentazon	109	109	P/P	50 - 150
MCP	102	90.2	P/P	50 - 150
Triclopyr	99.8	96.7	P/P	50 - 160

Reference Method: EPA 8321B
Run ID: A84488
Included Lab Sample IDs: 1996864

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	146	150	P/P	60 - 150
Carbamazepine	139	150	P/P	60 - 150
Diuron	136	123	P/P	60 - 150
Fenuron	102	108	P/P	60 - 150
Fluridone	134	133	P/P	60 - 160
Hydrocodone	109	114	P/P	60 - 150
Imazapyr	97.9	105	P/P	50 - 150
Imidacloprid	106	111	P/P	60 - 150
Linuron	147	140	P/P	60 - 150
Primidone	138	117	P/P	60 - 150
Pyraclostrobin	144	138	P/P	60 - 150

* 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 8321B	2,4-D	65.9	59.0	45.5		16.3
	Acetaminophen	117	113	117		3.00
	Bentazon	77.3	65.3	60.6		7.47
	Carbamazepine	105	99.4	98.2		1.20
	Diuron	95.1	70.0	70.9		0.523
	Fenuron	101	84.3	83.8		0.572
	Fluridone	101	80.7	82.0		1.66
	Hydrocodone	94.7	73.0	82.1		11.8
	Imazapyr	86.4	58.8	61.4		2.50
	Imidacloprid	125	199	189		4.68
	Linuron	92.1	73.5	79.9		8.33
	MCP	117	141	138		2.29
	Primidone	120	102	98.4		4.04
	Pyraclostrobin	101	94.2	90.2		4.38
	Sucralose	91.1	91.9	90.3		1.66
	Triclopyr	109	129	135		4.50

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1996864

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	06/01/2018	06/05/2018 12:00	Hoor Shaik	06/07/2018 10:47	Juyoung Kim	1996864
	06/01/2018	06/05/2018 12:00	Hoor Shaik	06/09/2018 11:43	Juyoung Kim	1996864
	06/01/2018	06/05/2018 14:00	Hoor Shaik	06/05/2018 18:46	Mohammad Ghaffari	1996864