

Chemical Analysis Report

CEN-DIST-2020-09-24-01

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

Event Description: **Lake George**
Request ID: **RQ-2020-09-21-49**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 12-OCT-2020 11:06

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular 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 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: Lake George @ N of Center

Collection Date/Time: 09/23/2020 13:30

Field ID: G2CE0231

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2198007	EPA 8321B	2,4-D	0.024		ug/L	P387915	
		Acesulfame K**	0.10	U	ug/L	P387746	
		AMPA**	0.10	U	ug/L	P387746	
		Sucralose**	0.28		ug/L	P387746	
		Acetaminophen**	0.20		ug/L	P387915	
		Acetamiprid**	0.0020	U	ug/L	P387915	
		Endothall**	0.25	U	ug/L	P387746	
		Glufosinate**	0.10	U	ug/L	P387746	
		Glyphosate**	0.10	U	ug/L	P387746	
		Afidopyropen**	0.0020	U	ug/L	P387915	
		Bentazon	0.0080		ug/L	P387915	
		Benzovindiflupyr**	0.0020	U	ug/L	P387915	
		Carbamazepine**	8.0E-04	U	ug/L	P387915	
		Clothianidin**	0.0020	U	ug/L	P387915	
		Dinotefuran**	0.0020	U	ug/L	P387915	
		Diuron	0.0020	U	ug/L	P387915	
		Fenuron	0.016	U	ug/L	P387915	
		Fluridone**	0.0077		ug/L	P387915	
		Imazapyr**	0.068		ug/L	P387915	
		Hydrocodone**	0.0020	U	ug/L	P387915	
		Ibuprofen**	0.020	U	ug/L	P387915	
		Imidacloprid	0.0026	I	ug/L	P387915	
		Linuron	0.0040	U	ug/L	P387915	
		Mandestrobin**	0.0020	U	ug/L	P387915	
		MCPP	0.0020	U	ug/L	P387915	
		Naproxen**	0.0080	U	ug/L	P387915	
		Primidone**	0.0040	U	ug/L	P387915	
		Pyraclostrobin**	0.0020	U	ug/L	P387915	
		Thiamethoxam**	0.0020	U	ug/L	P387915	
		Tolfenpyrad**	0.0020	U	ug/L	P387915	
		Triclopyr**	0.0040	U	ug/L	P387915	

Ref. Method and Comment:

EPA 8321B: MS accuracy and precision for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P387746

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P387915

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P387746

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	98.1		P	40 - 150
AMPA	82.5		P	40 - 150
Endothall	94.7		P	40 - 150
Glufosinate	89.8		P	40 - 150
Glyphosate	101		P	40 - 140
Sucralose	95.8		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P387915

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	81.6		P	30 - 160
Acetaminophen	82.7		P	30 - 160
Acetamiprid	74.6		P	30 - 160
Afidopyropen	53.6		P	30 - 160
Bentazon	49.4		P	30 - 160
Benzovindiflupyr	69.2		P	30 - 160
Carbamazepine	47.4		P	30 - 160
Clothianidin	75.7		P	30 - 160
Dinotefuran	96.8		P	30 - 160
Diuron	45.3		P	30 - 160
Fenuron	91.0		P	30 - 160
Fluridone	71.0		P	30 - 160
Hydrocodone	78.1		P	30 - 160
Ibuprofen	71.2		P	30 - 160
Imazapyr	105		P	30 - 160
Imidacloprid	96.2		P	30 - 160
Linuron	64.0		P	30 - 160
Mandestrobin	76.9		P	30 - 160
MCPP	68.5		P	30 - 160
Naproxen	75.5		P	30 - 160
Primidone	77.6		P	30 - 160
Pyraclostrobin	73.8		P	30 - 160
Thiamethoxam	79.6		P	30 - 160
Tolfenpyrad	47.2		P	30 - 160
Triclopyr	61.9		P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P387746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197190	Acesulfame K	114	119	P/P	40 - 150
2197190	AMPA	114	117	P/P	40 - 150
2197190	Endothall	107	93.8	P/P	40 - 150
2197190	Glufosinate	83.8	94.5	P/P	40 - 150
2197190	Glyphosate	82.6	80.4	P/P	40 - 140
2197190	Sucralose	99.1	102	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P387915

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198224	2,4-D	52.0	62.9	P/P	30 - 160
2198224	Acetaminophen	56.9	64.1	P/P	30 - 160
2198224	Acetamiprid	62.6	71.6	P/P	30 - 160
2198224	Afidopyropen	48.9	53.4	P/P	30 - 160
2198224	Benzovindiflupyr	55.6	65.2	P/P	30 - 160
2198224	Carbamazepine	38.7	42.5	P/P	30 - 160
2198224	Clothianidin	51.8	53.1	P/P	30 - 160
2198224	Dinotefuran	81.6	88.3	P/P	30 - 160
2198224	Diuron	38.0	42.1	P/P	30 - 160
2198224	Fenuron	71.3	79.0	P/P	30 - 160
2198224	Fluridone	63.0	72.3	P/P	30 - 160
2198224	Hydrocodone	62.8	72.2	P/P	30 - 160
2198224	Ibuprofen	54.5	65.5	P/P	30 - 160
2198224	Imazapyr	81.2	86.3	P/P	30 - 160
2198224	Imidacloprid	98.3	110	P/P	30 - 160
2198224	Linuron	62.0	63.4	P/P	30 - 160
2198224	Mandestrobin	66.7	78.8	P/P	30 - 160
2198224	MCPP	52.1	58.6	P/P	30 - 160
2198224	Naproxen	43.5	44.7	P/P	30 - 160
2198224	Primidone	69.0	70.1	P/P	30 - 160
2198224	Pyraclostrobin	62.8	72.0	P/P	30 - 160
2198224	Thiamethoxam	64.8	71.0	P/P	30 - 160
2198224	Tolfenpyrad	44.3	43.7	P/P	30 - 160
2198224	Triclopyr	47.6	57.5	P/P	30 - 160

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P387746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197190	Acesulfame K	4.24	Spike	P	0 - 30
2197190	AMPA	1.86	Spike	P	0 - 30
2197190	Endothall	13.0	Spike	P	0 - 30
2197190	Glufosinate	12.0	Spike	P	0 - 30
2197190	Glyphosate	2.62	Spike	P	0 - 30
2197190	Sucralose	2.90	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P387915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198224	2,4-D	12.9	Spike	P	0 - 30
2198224	Acetaminophen	11.9	Spike	P	0 - 30
2198224	Acetamiprid	13.4	Spike	P	0 - 30
2198224	Afidopyropen	8.83	Spike	P	0 - 30
2198224	Benzovindiflupyr	15.9	Spike	P	0 - 30
2198224	Carbamazepine	7.27	Spike	P	0 - 30
2198224	Clothianidin	2.32	Spike	P	0 - 30
2198224	Dinotefuran	7.55	Spike	P	0 - 30
2198224	Diuron	9.38	Spike	P	0 - 30
2198224	Fenuron	10.3	Spike	P	0 - 30
2198224	Fluridone	8.22	Spike	P	0 - 30
2198224	Hydrocodone	14.0	Spike	P	0 - 30
2198224	Ibuprofen	18.4	Spike	P	0 - 30
2198224	Imazapyr	2.91	Spike	P	0 - 30
2198224	Imidacloprid	8.01	Spike	P	0 - 30
2198224	Linuron	2.24	Spike	P	0 - 30
2198224	Mandestrobin	16.6	Spike	P	0 - 30
2198224	MCP	11.7	Spike	P	0 - 30
2198224	Naproxen	2.73	Spike	P	0 - 30
2198224	Primidone	1.27	Spike	P	0 - 30
2198224	Pyraclostrobin	13.7	Spike	P	0 - 30
2198224	Thiamethoxam	6.68	Spike	P	0 - 30
2198224	Tolfenpyrad	1.36	Spike	P	0 - 30
2198224	Triclopyr	18.8	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2198007
Field Sample ID: G2CE0231

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	60.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	55.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	49.0	P	30 - 160
EPA 8321B	Diuron-d6	49.7	P	30 - 160
EPA 8321B	Endothall-d6	117	P	30 - 160
EPA 8321B	Endothall-d6	117	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	69.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	69.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	84.5	P	30 - 160
EPA 8321B	Primidone-d5	57.0	P	30 - 160
EPA 8321B	Sucralose-d6	34.2	P	30 - 160
EPA 8321B	Sucralose-d6	34.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A101191
Included Lab Sample IDs: 2198007

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	90.8	93.8	P/P	60 - 160
Endothall	112	109	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A101224
Included Lab Sample IDs: 2198007

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	71.8	74.8	P/P	60 - 160
Glufosinate	94.0	99.4	P/P	60 - 160
Glyphosate	97.5	98.9	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A101350
Included Lab Sample IDs: 2198007

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	101	98.7	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A101379
Included Lab Sample IDs: 2198007

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	114	104	P/P	50 - 150
Acetaminophen	105	100	P/P	60 - 160
Acetamiprid	110	119	P/P	50 - 150
Afidopyropen	90.1	94.6	P/P	50 - 150
Bentazon	101	95.3	P/P	50 - 160
Benzovindiflupyr	114	111	P/P	50 - 150
Carbamazepine	99.6	104	P/P	60 - 150
Clothianidin	95.4	96.3	P/P	60 - 150
Dinotefuran	96.3	99.0	P/P	50 - 150
Diuron	103	116	P/P	60 - 160
Fenuron	102	109	P/P	60 - 150
Fluridone	96.2	100	P/P	60 - 160
Hydrocodone	98.8	108	P/P	60 - 150
Ibuprofen	120	116	P/P	50 - 160
Imazapyr	113	115	P/P	50 - 160
Imidacloprid	89.5	107	P/P	60 - 150
Linuron	96.7	97.8	P/P	60 - 150
Mandestrobin	116	104	P/P	50 - 150
MCPP	109	105	P/P	50 - 150
Naproxen	65.6	65.0	P/P	50 - 160
Primidone	95.7	100	P/P	60 - 150
Pyraclostrobin	100	101	P/P	60 - 150
Thiamethoxam	97.2	104	P/P	50 - 150
Tolfenpyrad	101	104	P/P	60 - 150
Triclopyr	102	124	P/P	50 - 150

Quality Assurance Report

Calibration Verification

* 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	81.6	52.0	62.9		12.9
	Acesulfame K	98.1	114	119		4.24
	Acetaminophen	82.7	56.9	64.1		11.9
	Acetamiprid	74.6	62.6	71.6		13.4
	Afidopyropen	53.6	48.9	53.4		8.83
	AMPA	82.5	114	117		1.86
	Bentazon	49.4				
	Benzovindiflupyr	69.2	55.6	65.2		15.9
	Carbamazepine	47.4	38.7	42.5		7.27
	Clothianidin	75.7	51.8	53.1		2.32
	Dinotefuran	96.8	81.6	88.3		7.55
	Diuron	45.3	38.0	42.1		9.38
	Endothall	94.7	107	93.8		13.0
	Fenuron	91.0	71.3	79.0		10.3
	Fluridone	71.0	63.0	72.3		8.22
	Glufosinate	89.8	83.8	94.5		12.0
	Glyphosate	101	82.6	80.4		2.62
	Hydrocodone	78.1	62.8	72.2		14.0
	Ibuprofen	71.2	54.5	65.5		18.4
	Imazapyr	105	81.2	86.3		2.91
	Imidacloprid	96.2	98.3	110		8.01
	Linuron	64.0	62.0	63.4		2.24
	Mandestrobin	76.9	66.7	78.8		16.6
	MCPP	68.5	52.1	58.6		11.7
	Naproxen	75.5	43.5	44.7		2.73
	Primidone	77.6	69.0	70.1		1.27
	Pyraclostrobin	73.8	62.8	72.0		13.7
	Sucralose	95.8	99.1	102		2.90
	Thiamethoxam	79.6	64.8	71.0		6.68
	Tolfenpyrad	47.2	44.3	43.7		1.36
	Triclopyr	61.9	47.6	57.5		18.8

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2198007
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2198007

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	09/24/2020	09/24/2020 13:40	Rebecca Ware	09/24/2020 18:33	Rebecca Ware	2198007
	09/24/2020	09/24/2020 13:40	Rebecca Ware	09/25/2020 15:30	Rebecca Ware	2198007
	09/24/2020	09/24/2020 13:40	Rebecca Ware	09/30/2020 15:00	Rebecca Ware	2198007
	09/24/2020	09/30/2020 11:00	Hoor Shaik	10/02/2020 00:58	Juyoung Kim	2198007