

Chemical Analysis Report

SW-DIST-2019-10-29-04

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

Event Description: **Alligator Creek**
Request ID: **RQ-2019-10-28-04**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 19-NOV-2019 18:51



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: Alligator Crk @ GlenOak

Collection Date/Time: 10/28/2019 09:41

Field ID: G1SW0057

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2132217	EPA 8321B	2,4-D	0.088		ug/L	P373332	
		Acesulfame K**	0.10	U	ug/L	P373428	
		AMPA**	1.3		ug/L	P373428	
		Sucralose**	1.4		ug/L	P373428	MS
		Acetaminophen**	0.0080	U	ug/L	P373332	
		Acetamiprid**	0.0020	U	ug/L	P373332	
		Endothall**	0.25	U	ug/L	P373428	
		Glufosinate**	0.10	U	ug/L	P373428	
		Glyphosate**	3.7		ug/L	P373428	
		Afidopyropen**	0.0020	UJ	ug/L	P373332	
		Bentazon	0.023		ug/L	P373332	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P373332	
		Carbamazepine**	0.0025	I	ug/L	P373332	
		Clothianidin**	0.0043	I	ug/L	P373332	
		Dinotefuran**	0.0020	U	ug/L	P373332	
		Diuron	0.0056	I	ug/L	P373332	
		Fenuron	0.016	U	ug/L	P373332	
		Fluridone**	0.030		ug/L	P373332	
		Imazapyr**	0.20		ug/L	P373332	
		Hydrocodone**	0.0020	U	ug/L	P373332	
		Ibuprofen**	0.020	U	ug/L	P373332	
		Imidacloprid	0.045		ug/L	P373332	MS
		Linuron	0.0040	U	ug/L	P373332	
		Mandestrobin**	0.0020	UJ	ug/L	P373332	
		MCPP	0.0053	I	ug/L	P373332	
		Naproxen**	0.0080	U	ug/L	P373332	
		Primidone**	0.0043	I	ug/L	P373332	
		Pyraclostrobin**	0.0020	U	ug/L	P373332	
		Thiamethoxam**	0.0020	U	ug/L	P373332	
		Tolfenpyrad**	0.0020	U	ug/L	P373332	
		Triclopyr**	0.0040	U	ug/L	P373332	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for some analytes 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: P373332

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

Reference Method: EPA 8321B

Batch ID: P373428

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P373332

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	94.2		P	40 - 160
Acetaminophen	85.3		P	30 - 160
Acetamiprid	99.4		P	40 - 160
Afidopyropen	87.8		P	40 - 160
Bentazon	77.6		P	30 - 160
Benzovindiflupyr	99.1		P	40 - 160
Carbamazepine	108		P	40 - 160
Clothianidin	87.3		P	40 - 160
Dinotefuran	85.8		P	40 - 160
Diuron	102		P	40 - 160
Fenuron	104		P	40 - 160
Fluridone	92.1		P	40 - 160
Hydrocodone	95.5		P	40 - 160
Ibuprofen	74.2		P	30 - 160
Imazapyr	57.1		P	40 - 160
Imidacloprid	108		P	40 - 160
Linuron	81.6		P	40 - 160
Mandestrobin	97.9		P	40 - 160
MCPP	99.8		P	40 - 160
Naproxen	74.4		P	40 - 160
Primidone	91.9		P	40 - 160
Pyraclostrobin	86.6		P	30 - 160
Thiamethoxam	104		P	40 - 160
Tolfenpyrad	56.3		P	40 - 160
Triclopyr	82.4		P	30 - 160

Reference Method: EPA 8321B
 Batch ID: P373428

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	108		P	40 - 150
AMPA	104		P	40 - 150
Endothall	79.5		P	40 - 150
Glufosinate	85.8		P	40 - 150
Glyphosate	88.9		P	40 - 140
Sucralose	111		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P373332

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132079	2,4-D	91.0	72.9	P/P	40 - 160
2132079	Acetaminophen	81.9	72.0	P/P	30 - 160
2132079	Acetamiprid	104	91.2	P/P	40 - 160
2132079	Afidopyropen	96.2	80.9	P/P	40 - 160
2132079	Benzovindiflupyr	103	90.1	P/P	40 - 160
2132079	Carbamazepine	91.9	83.4	P/P	40 - 160
2132079	Clothianidin	89.1	75.8	P/P	40 - 160
2132079	Dinotefuran	102	98.1	P/P	40 - 160
2132079	Diuron	87.4	76.8	P/P	40 - 160
2132079	Fenuron	84.1	74.5	P/P	40 - 160
2132079	Hydrocodone	93.1	78.6	P/P	40 - 160
2132079	Ibuprofen	72.0	59.1	P/P	30 - 160
2132079	Imidacloprid	165	148	F/P	40 - 160
2132079	Linuron	72.0	63.3	P/P	40 - 160
2132079	Mandestrobin	101	85.2	P/P	40 - 160
2132079	MCCP	101	84.1	P/P	40 - 160
2132079	Naproxen	71.8	67.9	P/P	40 - 160
2132079	Primidone	104	94.4	P/P	40 - 160
2132079	Pyraclostrobin	90.4	76.4	P/P	30 - 160
2132079	Thiamethoxam	139	126	P/P	40 - 160
2132079	Tolfenpyrad	59.7	51.3	P/P	40 - 160
2132079	Triclopyr	96.8	74.9	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P373428

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132076	Acesulfame K	47.8	49.1	P/P	40 - 150
2132076	AMPA	74.2	70.7	P/P	40 - 150
2132076	Endothall	89.8	100	P/P	40 - 150
2132076	Glufosinate	90.5	78.0	P/P	40 - 150
2132076	Glyphosate	89.6	103	P/P	40 - 140
2132076	Sucralose	50.3	37.3	P/F	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P373332

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132079	2,4-D	14.2	Spike	P	0 - 30
2132079	Acetaminophen	12.9	Spike	P	0 - 30
2132079	Acetamiprid	13.3	Spike	P	0 - 30
2132079	Afidopyropen	17.3	Spike	P	0 - 30
2132079	Bentazon	11.5	Spike	P	0 - 30
2132079	Benzovindiflupyr	13.7	Spike	P	0 - 30
2132079	Carbamazepine	9.65	Spike	P	0 - 30
2132079	Clothianidin	14.8	Spike	P	0 - 30
2132079	Dinotefuran	3.10	Spike	P	0 - 30
2132079	Diuron	11.5	Spike	P	0 - 30
2132079	Fenuron	12.1	Spike	P	0 - 30
2132079	Fluridone	12.9	Spike	P	0 - 30
2132079	Hydrocodone	16.8	Spike	P	0 - 30
2132079	Ibuprofen	19.6	Spike	P	0 - 30
2132079	Imazapyr	5.55	Spike	P	0 - 30
2132079	Imidacloprid	7.21	Spike	P	0 - 30
2132079	Linuron	12.9	Spike	P	0 - 30
2132079	Mandestrobin	16.4	Spike	P	0 - 30
2132079	MCPP	18.2	Spike	P	0 - 30
2132079	Naproxen	5.59	Spike	P	0 - 30
2132079	Primidone	10.2	Spike	P	0 - 30
2132079	Pyraclostrobin	16.7	Spike	P	0 - 30
2132079	Thiamethoxam	9.47	Spike	P	0 - 30
2132079	Tolfenpyrad	15.1	Spike	P	0 - 30
2132079	Triclopyr	25.5	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P373428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132076	Acesulfame K	2.66	Spike	P	0 - 30
2132076	AMPA	0.927	Spike	P	0 - 30
2132076	Endothall	10.8	Spike	P	0 - 30
2132076	Glufosinate	14.8	Spike	P	0 - 30
2132076	Glyphosate	3.11	Spike	P	0 - 30
2132076	Sucralose	26.4	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2132217
Field Sample ID: G1SW0057

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	88.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	73.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	78.2	P	30 - 160
EPA 8321B	Diuron-d6	61.0	P	30 - 160
EPA 8321B	Endothall-d6	116	P	30 - 160
EPA 8321B	Endothall-d6	116	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	129	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	129	P	30 - 160
EPA 8321B	Ibuprofen-d3	76.4	P	30 - 160
EPA 8321B	Primidone-d5	87.2	P	30 - 160
EPA 8321B	Sucralose-d6	118	P	30 - 160
EPA 8321B	Sucralose-d6	118	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A95470
Included Lab Sample IDs: 2132217

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	91.3	83.6	P/P	60 - 160
Glufosinate	94.0	104	P/P	60 - 160
Glyphosate	115	111	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A95474
Included Lab Sample IDs: 2132217

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	105	73.3	P/P	60 - 160
Endothall	94.9	96.3	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A95576
Included Lab Sample IDs: 2132217

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	79.1	78.3	P/P	50 - 150
Acetaminophen	104	103	P/P	60 - 160
Acetamiprid	109	109	P/P	50 - 150
Afidopyropen	83.1	86.3	P/P	50 - 150
Bentazon	69.4	71.8	P/P	50 - 160
Benzovindiflupyr	115	116	P/P	50 - 150
Carbamazepine	111	111	P/P	60 - 150
Clothianidin	103	93.1	P/P	60 - 150
Dinotefuran	91.7	87.9	P/P	50 - 150
Diuron	114	114	P/P	60 - 150
Fenuron	110	112	P/P	60 - 150
Fluridone	108	104	P/P	60 - 160
Hydrocodone	103	103	P/P	60 - 150
Ibuprofen	86.6	81.5	P/P	50 - 160
Imazapyr	83.1	80.7	P/P	50 - 150
Imidacloprid	102	97.7	P/P	60 - 150
Linuron	102	99.5	P/P	60 - 150
Mandestrobin	110	109	P/P	50 - 150
MCPP	77.6	78.2	P/P	50 - 150
Naproxen	62.6	80.9	P/P	50 - 160
Primidone	101	108	P/P	60 - 150
Pyraclostrobin	102	101	P/P	60 - 150
Thiamethoxam	104	105	P/P	50 - 150
Tolfenpyrad	101	101	P/P	60 - 150
Triclopyr	74.3	72.9	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A95766
Included Lab Sample IDs: 2132217

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	96.8	111	P/P	60 - 160

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		LCS	Precision	MS
						SMP	
EPA 8321B	2,4-D	94.2	91.0	72.9			14.2
	Acesulfame K	108	47.8	49.1			2.66
	Acetaminophen	85.3	81.9	72.0			12.9
	Acetamiprid	99.4	104	91.2			13.3
	Afidopyropen	87.8	96.2	80.9			17.3
	AMPA	104	74.2	70.7			0.927
	Bentazon	77.6					11.5
	Benzovindiflupyr	99.1	103	90.1			13.7
	Carbamazepine	108	91.9	83.4			9.65
	Clothianidin	87.3	89.1	75.8			14.8
	Dinotefuran	85.8	102	98.1			3.10
	Diuron	102	87.4	76.8			11.5
	Endothall	79.5	89.8	100			10.8
	Fenuron	104	84.1	74.5			12.1
	Fluridone	92.1					12.9
	Glufosinate	85.8	90.5	78.0			14.8
	Glyphosate	88.9	89.6	103			3.11
	Hydrocodone	95.5	93.1	78.6			16.8
	Ibuprofen	74.2	72.0	59.1			19.6
	Imazapyr	57.1					5.55
	Imidacloprid	108	165	148			7.21
	Linuron	81.6	72.0	63.3			12.9
	Mandestrobin	97.9	101	85.2			16.4
	MCPP	99.8	101	84.1			18.2
	Naproxen	74.4	71.8	67.9			5.59
	Primidone	91.9	104	94.4			10.2
	Pyraclostrobin	86.6	90.4	76.4			16.7
	Sucralose	111	50.3	37.3			26.4
	Thiamethoxam	104	139	126			9.47
	Tolfenpyrad	56.3	59.7	51.3			15.1
	Triclopyr	82.4	96.8	74.9			25.5

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2132217
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2132217

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	10/29/2019	10/31/2019 09:00	Hoor Shaik	11/08/2019 05:32	Juyoung Kim	2132217
	10/29/2019	10/31/2019 11:30	Rebecca Ware	10/31/2019 17:51	Rebecca Ware	2132217
	10/29/2019	10/31/2019 11:30	Rebecca Ware	11/01/2019 20:29	Rebecca Ware	2132217
	10/29/2019	10/31/2019 11:30	Rebecca Ware	11/13/2019 15:00	Rebecca Ware	2132217