

Chemical Analysis Report

SW-DIST-2019-03-21-01

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

Event Description: **Alligator Creek- PC Site#14-10**

Request ID: **RQ-2019-03-18-07**

Customer: **SW-DIST**

Project ID: **SMP**

Send Reports to:

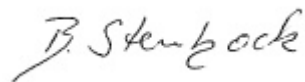
FL Dept. of Environmental Protection
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Attn: Judy Ashton

For additional information please contact

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

Date Certified: 09-APR-2019 18:35



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 @ GLEN OAK

Collection Date/Time: 03/20/2019 13:50

Field ID: G1SW0057

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2071737	EPA 8321B	2,4-D	0.018		ug/L	P360773	
		Acesulfame K**	0.11	I	ug/L	P360937	
		AMPA**	0.60		ug/L	P360937	
		Sucralose**	0.92		ug/L	P360937	
		Acetaminophen**	0.0080	U	ug/L	P360773	
		Endothall**	0.25	U	ug/L	P360937	
		Glufosinate**	0.10	U	ug/L	P360937	
		Bentazon	0.043		ug/L	P360773	
		Glyphosate**	1.0		ug/L	P360937	
		Carbamazepine**	0.0026	I	ug/L	P360773	
		Diuron	0.0043	I	ug/L	P360773	
		Fenuron	0.016	U	ug/L	P360773	
		Fluridone**	0.051		ug/L	P360773	
		Imazapyr**	0.050		ug/L	P360773	
		Hydrocodone**	0.0020	U	ug/L	P360773	
		Ibuprofen**	0.020	U	ug/L	P360773	
		Imidacloprid	0.025		ug/L	P360773	MS
		Linuron	0.0040	U	ug/L	P360773	
		MCPP	0.0043	I	ug/L	P360773	
		Naproxen**	0.0080	U	ug/L	P360773	
		Primidone**	0.0040	U	ug/L	P360773	
		Pyraclostrobin**	0.0020	U	ug/L	P360773	
		Triclopyr**	0.0040	U	ug/L	P360773	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P360773

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	8.0E-04	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
MCP	0.0020	U	ug/L
Naproxen	0.0080	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: P360937

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: P360773

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	84.1		P	40 - 150
Acetaminophen	106		P	30 - 150
Bentazon	113		P	30 - 150
Carbamazepine	87.3		P	40 - 150
Diuron	103		P	40 - 150
Fenuron	148		P	40 - 150
Fluridone	114		P	40 - 150
Hydrocodone	122		P	40 - 150
Ibuprofen	63.6		P	40 - 150
Imazapyr	104		P	40 - 150
Imidacloprid	134		P	40 - 150
Linuron	80.6		P	40 - 150
MCPP	112		P	40 - 150
Naproxen	71.0		P	40 - 150
Primidone	114		P	40 - 150
Pyraclostrobin	72.3		P	40 - 150
Triclopyr	62.3		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	85.4		P	40 - 150
AMPA	129		P	40 - 150
Endothall	63.2		P	40 - 150
Glufosinate	129		P	40 - 150
Glyphosate	134		P	40 - 140
Sucralose	97.4		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P360773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071546	2,4-D	68.7	89.6	P/P	40 - 150
2071546	Acetaminophen	137	128	P/P	30 - 150
2071546	Bentazon	100	94.2	P/P	30 - 150
2071546	Carbamazepine	114	103	P/P	40 - 150
2071546	Diuron	99.9	102	P/P	40 - 150
2071546	Fenuron	144	138	P/P	40 - 150
2071546	Fluridone	118	114	P/P	40 - 150
2071546	Hydrocodone	102	109	P/P	40 - 150
2071546	Ibuprofen	65.8	65.5	P/P	40 - 150
2071546	Imazapyr	113	98.6	P/P	40 - 150
2071546	Imidacloprid	184	174	F/F	40 - 150
2071546	Linuron	90.5	85.2	P/P	40 - 150
2071546	MCP	114	105	P/P	40 - 150
2071546	Naproxen	99.4	87.0	P/P	40 - 150
2071546	Primidone	122	94.3	P/P	40 - 150
2071546	Pyraclostrobin	107	108	P/P	40 - 150
2071546	Triclopyr	62.1	58.9	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P360937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071724	Acesulfame K	101	87.6	P/P	40 - 150
2071724	AMPA	105	111	P/P	40 - 150
2071724	Endothall	111	123	P/P	40 - 150
2071724	Glufosinate	132	122	P/P	40 - 150
2071724	Glyphosate	131	131	P/P	40 - 140
2071724	Sucralose	73.3	71.5	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P360773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071546	2,4-D	26.4	Spike	P	0 - 30
2071546	Acetaminophen	6.76	Spike	P	0 - 30
2071546	Bentazon	5.99	Spike	P	0 - 30
2071546	Carbamazepine	10.1	Spike	P	0 - 30
2071546	Diuron	1.87	Spike	P	0 - 30
2071546	Fenuron	3.97	Spike	P	0 - 30
2071546	Fluridone	2.86	Spike	P	0 - 30
2071546	Hydrocodone	5.95	Spike	P	0 - 30
2071546	Ibuprofen	0.352	Spike	P	0 - 30
2071546	Imazapyr	13.9	Spike	P	0 - 30
2071546	Imidacloprid	5.26	Spike	P	0 - 30
2071546	Linuron	5.94	Spike	P	0 - 30
2071546	MCP	7.83	Spike	P	0 - 30
2071546	Naproxen	13.3	Spike	P	0 - 30
2071546	Primidone	25.9	Spike	P	0 - 30
2071546	Pyraclostrobin	0.860	Spike	P	0 - 30
2071546	Triclopyr	5.22	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P360937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071724	Acesulfame K	14.1	Spike	P	0 - 30
2071724	AMPA	4.88	Spike	P	0 - 30
2071724	Endothall	10.7	Spike	P	0 - 30
2071724	Glufosinate	8.01	Spike	P	0 - 30
2071724	Glyphosate	0.183	Spike	P	0 - 30
2071724	Sucralose	2.38	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: 2071737

Field Sample ID: G1SW0057

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	65.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	85.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.8	P	30 - 160
EPA 8321B	Diuron-d6	63.3	P	30 - 160
EPA 8321B	Endothall-d6	73.0	P	30 - 160
EPA 8321B	Endothall-d6	73.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	113	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	113	P	30 - 160
EPA 8321B	Ibuprofen-d3	64.1	P	30 - 160
EPA 8321B	Primidone-d5	71.3	P	30 - 160
EPA 8321B	Sucralose-d6	115	P	30 - 160
EPA 8321B	Sucralose-d6	115	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A90220
 Included Lab Sample IDs: 2071737

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	135	117	P/P	60 - 160
Glufosinate	134	122	P/P	60 - 160
Glyphosate	133	148	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A90265
 Included Lab Sample IDs: 2071737

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	94.9	60.9	P/P	60 - 160
Endothall	69.7	79.8	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A90274
 Included Lab Sample IDs: 2071737

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.9	92.9	P/P	50 - 150
Acetaminophen	92.7	123	P/P	60 - 160
Bentazon	91.8	80.6	P/P	50 - 160
Carbamazepine	91.9	110	P/P	60 - 150
Diuron	108	109	P/P	60 - 150
Fenuron	109	106	P/P	60 - 150
Fluridone	93.4	69.9	P/P	60 - 160
Hydrocodone	99.1	114	P/P	60 - 150
Ibuprofen	108	86.4	P/P	50 - 160
Imazapyr	83.8	85.8	P/P	50 - 150
Imidacloprid	106	95.3	P/P	60 - 150
Linuron	104	85.8	P/P	60 - 150
MCPP	96.6	92.9	P/P	50 - 150
Naproxen	125	84.5	P/P	50 - 160
Primidone	135	112	P/P	60 - 150
Pyraclostrobin	87.3	89.2	P/P	60 - 150
Triclopyr	101	98.2	P/P	50 - 150

Reference Method: EPA 8321B
 Run ID: A90433
 Included Lab Sample IDs: 2071737

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	126	95.0	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		Precision LCS	SMP	MS
EPA 8321B	2,4-D	84.1	68.7	89.6			26.4
	Acesulfame K	85.4	101	87.6			14.1
	Acetaminophen	106	137	128			6.76
	AMPA	129	105	111			4.88
	Bentazon	113	100	94.2			5.99
	Carbamazepine	87.3	114	103			10.1
	Diuron	103	99.9	102			1.87
	Endothall	63.2	111	123			10.7
	Fenuron	148	144	138			3.97
	Fluridone	114	118	114			2.86
	Glufosinate	129	132	122			8.01
	Glyphosate	134	131	131			0.183
	Hydrocodone	122	102	109			5.95
	Ibuprofen	63.6	65.8	65.5			0.352
	Imazapyr	104	113	98.6			13.9
	Imidacloprid	134	184	174			5.26
	Linuron	80.6	90.5	85.2			5.94
	MCPP	112	114	105			7.83
	Naproxen	71.0	99.4	87.0			13.3
	Primidone	114	122	94.3			25.9
	Pyraclostrobin	72.3	107	108			0.860
	Sucralose	97.4	73.3	71.5			2.38
	Triclopyr	62.3	62.1	58.9			5.22

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2071737
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2071737

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	03/21/2019	03/25/2019 09:45	Rebecca Ware	03/25/2019 12:33	Rebecca Ware	2071737
	03/21/2019	03/25/2019 09:45	Rebecca Ware	03/26/2019 13:46	Rebecca Ware	2071737
	03/21/2019	03/25/2019 09:45	Rebecca Ware	04/02/2019 10:54	Rebecca Ware	2071737
	03/21/2019	03/26/2019 12:30	Hoor Shaik	03/28/2019 00:14	Juyoung Kim	2071737