

Chemical Analysis Report

SW-DIST-2019-04-30-02

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

Event Description: **Joes Creek, PP Ditch#5**
Request ID: **RQ-2019-04-29-04**
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
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 16-MAY-2019 15:19

A handwritten signature in black ink, appearing to read "Liang Lin", is shown 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 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: Joe's Crk @ 62nd and 42nd (PC 35-10)

Collection Date/Time: 04/29/2019 10:23

Field ID: G5SW0137

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2081696	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P362987	
		2,4-D	0.0039	I	ug/L	P362847	MS, RPD
		AMPA**	0.93		ug/L	P362987	
		Sucralose**	0.19		ug/L	P362987	
		Endothall**	0.25	U	ug/L	P362987	
		Acetaminophen**	0.0080	U	ug/L	P362847	
		Glufosinate**	0.10	U	ug/L	P362987	
		Glyphosate**	1.1		ug/L	P362987	
		Bentazon	0.014		ug/L	P362847	MS
		Carbamazepine**	8.0E-04	U	ug/L	P362847	
		Diuron	0.0077	I	ug/L	P362847	
		Fenuron	0.016	U	ug/L	P362847	
		Fluridone**	0.011		ug/L	P362847	
		Imazapyr**	0.011	I	ug/L	P362847	MS
		Hydrocodone**	0.0020	U	ug/L	P362847	
		Ibuprofen**	0.020	U	ug/L	P362847	MS, RPD
		Imidacloprid	0.061		ug/L	P362847	
		Linuron	0.0040	U	ug/L	P362847	
		MCP	0.0031	I	ug/L	P362847	RPD
		Naproxen**	0.0080	U	ug/L	P362847	MS
		Primidone**	0.0040	U	ug/L	P362847	
		Pyraclostrobin**	0.0020	U	ug/L	P362847	MS, RPD
		Triclopyr**	0.0040	U	ug/L	P362847	MS, RPD

Ref. Method and Comment:

EPA 8321B: MS accuracy for glyphosate 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: P362847

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
MCPP	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: P362987

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: P362847

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	59.0		P	40 - 150
Acetaminophen	101		P	30 - 150
Bentazon	81.5		P	30 - 150
Carbamazepine	102		P	40 - 150
Diuron	94.1		P	40 - 150
Fenuron	107		P	40 - 150
Fluridone	130		P	40 - 150
Hydrocodone	105		P	40 - 150
Ibuprofen	56.6		P	40 - 150
Imazapyr	85.6		P	40 - 150
Imidacloprid	108		P	40 - 150
Linuron	72.1		P	40 - 150
MCPP	73.1		P	40 - 150
Naproxen	42.4		P	40 - 150
Primidone	96.4		P	40 - 150
Pyraclostrobin	59.0		P	40 - 150
Triclopyr	48.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P362987

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	96.9		P	40 - 150
AMPA	97.2		P	40 - 150
Endothall	72.9		P	40 - 150
Glufosinate	107		P	40 - 150
Glyphosate	131		P	40 - 140
Sucralose	94.3		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P362847

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081049	2,4-D	58.4	32.6	P/F	40 - 150
2081049	Acetaminophen	59.4	62.9	P/P	30 - 150
2081049	Bentazon	31.9	28.6	P/F	30 - 150
2081049	Carbamazepine	72.1	64.2	P/P	40 - 150
2081049	Diuron	60.4	53.8	P/P	40 - 150
2081049	Fenuron	96.6	125	P/P	40 - 150
2081049	Fluridone	132	111	P/P	40 - 150
2081049	Hydrocodone	72.1	81.3	P/P	40 - 150
2081049	Ibuprofen	52.2	35.2	P/F	40 - 150
2081049	Imazapyr	27.2	61.6	F/P	40 - 150
2081049	Imidacloprid	137	125	P/P	40 - 150
2081049	Linuron	46.3	42.3	P/P	40 - 150
2081049	MCPP	85.5	58.4	P/P	40 - 150
2081049	Naproxen	28.3	24.1	F/F	40 - 150
2081049	Primidone	44.7	52.7	P/P	40 - 150
2081049	Pyraclostrobin	51.5	16.6	P/F	40 - 150
2081049	Triclopyr	52.8	20.1	P/F	40 - 150

Reference Method: EPA 8321B
Batch ID: P362987

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081049	Acesulfame K	92.7	89.5	P/P	40 - 150
2081049	AMPA	71.6	69.4	P/P	40 - 150
2081049	Endothall	66.2	70.0	P/P	40 - 150
2081049	Glufosinate	85.4	93.3	P/P	40 - 150
2081049	Sucralose	85.8	80.2	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P362847

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081049	2,4-D	37.0	Spike	F	0 - 30
2081049	Acetaminophen	5.71	Spike	P	0 - 30
2081049	Bentazon	6.13	Spike	P	0 - 30
2081049	Carbamazepine	6.88	Spike	P	0 - 30
2081049	Diuron	11.4	Spike	P	0 - 30
2081049	Fenuron	25.7	Spike	P	0 - 30
2081049	Fluridone	12.2	Spike	P	0 - 30
2081049	Hydrocodone	11.9	Spike	P	0 - 30
2081049	Ibuprofen	38.9	Spike	F	0 - 30
2081049	Imazapyr	13.6	Spike	P	0 - 30
2081049	Imidacloprid	7.99	Spike	P	0 - 30
2081049	Linuron	9.00	Spike	P	0 - 30
2081049	MCPP	37.7	Spike	F	0 - 30
2081049	Naproxen	16.1	Spike	P	0 - 30
2081049	Primidone	11.7	Spike	P	0 - 30
2081049	Pyraclostrobin	103	Spike	F	0 - 30
2081049	Triclopyr	89.8	Spike	F	0 - 30

Reference Method: EPA 8321B
Batch ID: P362987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081049	Acesulfame K	3.51	Spike	P	0 - 30
2081049	AMPA	0.694	Spike	P	0 - 30
2081049	Endothall	5.52	Spike	P	0 - 30
2081049	Glufosinate	8.91	Spike	P	0 - 30
2081049	Glyphosate	1.38	Spike	P	0 - 30
2081049	Sucralose	2.58	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: 2081696
Field Sample ID: G5SW0137

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	58.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	96.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	92.7	P	30 - 160
EPA 8321B	Diuron-d6	65.6	P	30 - 160
EPA 8321B	Endothall-d6	77.3	P	30 - 160
EPA 8321B	Endothall-d6	77.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	53.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	53.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.4	P	30 - 160
EPA 8321B	Primidone-d5	78.2	P	30 - 160
EPA 8321B	Sucralose-d6	121	P	30 - 160
EPA 8321B	Sucralose-d6	121	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A91120
Included Lab Sample IDs: 2081696

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	96.1	73.8	P/P	60 - 160
Endothall	77.3	74.7	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A91126
Included Lab Sample IDs: 2081696

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	60.8	61.4	P/P	60 - 160
Glufosinate	95.5	81.5	P/P	60 - 160
Glyphosate	97.6	99.0	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A91231
Included Lab Sample IDs: 2081696

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.5	79.2	P/P	50 - 150
Acetaminophen	111	137	P/P	60 - 160
Bentazon	89.5	88.4	P/P	50 - 160
Carbamazepine	119	120	P/P	60 - 150
Diuron	119	114	P/P	60 - 150
Fenuron	108	116	P/P	60 - 150
Fluridone	129	110	P/P	60 - 160
Hydrocodone	109	115	P/P	60 - 150
Ibuprofen	72.3	62.3	P/P	50 - 160
Imazapyr	108	98.7	P/P	50 - 150
Imidacloprid	107	118	P/P	60 - 150
Linuron	73.0	88.7	P/P	60 - 150
MCPP	77.0	80.5	P/P	50 - 150
Naproxen	85.4	90.3	P/P	50 - 160
Primidone	118	110	P/P	60 - 150
Pyraclostrobin	106	105	P/P	60 - 150
Triclopyr	86.0	82.7	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A91344
Included Lab Sample IDs: 2081696

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	102	94.2	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	59.0	58.4	32.6			37.0
	Acesulfame K	96.9	92.7	89.5			3.51
	Acetaminophen	101	59.4	62.9			5.71
	AMPA	97.2	71.6	69.4			0.694
	Bentazon	81.5	31.9	28.6			6.13
	Carbamazepine	102	72.1	64.2			6.88
	Diuron	94.1	60.4	53.8			11.4
	Endothall	72.9	66.2	70.0			5.52
	Fenuron	107	96.6	125			25.7
	Fluridone	130	132	111			12.2
	Glufosinate	107	85.4	93.3			8.91
	Glyphosate	131					1.38
	Hydrocodone	105	72.1	81.3			11.9
	Ibuprofen	56.6	35.2	52.2			38.9
	Imazapyr	85.6	27.2	61.6			13.6
	Imidacloprid	108	137	125			7.99
	Linuron	72.1	46.3	42.3			9.00
	MCPP	73.1	58.4	85.5			37.7
	Naproxen	42.4	28.3	24.1			16.1
	Primidone	96.4	44.7	52.7			11.7
	Pyraclostrobin	59.0	51.5	16.6			103
	Sucralose	94.3	85.8	80.2			2.58
	Triclopyr	48.8	52.8	20.1			89.8

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2081696
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2081696

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	04/30/2019	04/30/2019 12:45	Rebecca Ware	04/30/2019 12:58	Rebecca Ware	2081696
	04/30/2019	04/30/2019 12:45	Rebecca Ware	04/30/2019 19:18	Rebecca Ware	2081696
	04/30/2019	04/30/2019 12:45	Rebecca Ware	05/08/2019 17:52	Rebecca Ware	2081696
	04/30/2019	04/30/2019 14:00	Hoor Shaik	05/03/2019 03:43	Juyoung Kim	2081696