

Chemical Analysis Report

SW-DIST-2019-06-14-02

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-2019-06-10-12**
Customer: **SW-DIST**
Project ID: **SMP**

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

Date Certified: 03-JUL-2019 11:34

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 & 42nd (PC 35-10)

Collection Date/Time: 06/13/2019 11:00

Field ID: G5SW0137

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2095831	EPA 8321B	2,4-D	0.39		ug/L	P365553	
		Acesulfame K**	0.10	U	ug/L	P365716	
		AMPA**	0.53		ug/L	P365716	
		Sucralose**	0.056		ug/L	P365716	
		Acetaminophen**	0.0080	U	ug/L	P365553	
		Endothall**	0.25	U	ug/L	P365716	
		Glufosinate**	0.10	U	ug/L	P365716	
		Glyphosate**	1.8		ug/L	P365716	
		Bentazon	0.014		ug/L	P365553	
		Carbamazepine**	8.0E-04	U	ug/L	P365553	
		Diuron	0.0099		ug/L	P365553	
		Fenuron	0.016	U	ug/L	P365553	
		Fluridone**	0.0057		ug/L	P365553	
		Imazapyr**	0.018		ug/L	P365553	
		Hydrocodone**	0.0020	U	ug/L	P365553	
		Ibuprofen**	0.020	U	ug/L	P365553	
		Imidacloprid	0.045		ug/L	P365553	MS
		Linuron	0.0040	U	ug/L	P365553	
		MCPP	0.0075	I	ug/L	P365553	
		Naproxen**	0.0080	U	ug/L	P365553	
		Primidone**	0.0040	U	ug/L	P365553	
		Pyraclostrobin**	0.0020	U	ug/L	P365553	
		Triclopyr**	0.0040	U	ug/L	P365553	RPD

Sample Location: Pinellas Ditch #5 (Bonn Creek)

Collection Date/Time: 06/13/2019 09:27

Field ID: G5SW0118

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2095832	EPA 8321B	2,4-D	0.0051	I	ug/L	P365553	
		Acesulfame K**	0.12	I	ug/L	P365716	
		AMPA**	0.82		ug/L	P365716	
		Sucralose**	1.2		ug/L	P365716	
		Acetaminophen**	0.0080	U	ug/L	P365553	
		Endothall**	0.25	U	ug/L	P365716	
		Glufosinate**	0.10	U	ug/L	P365716	
		Glyphosate**	3.1		ug/L	P365716	
		Bentazon	0.020		ug/L	P365553	
		Carbamazepine**	0.0017	I	ug/L	P365553	
		Diuron	0.0059	I	ug/L	P365553	
		Fenuron	0.016	U	ug/L	P365553	
		Fluridone**	0.021		ug/L	P365553	
		Imazapyr**	1.6		ug/L	P365553	
		Hydrocodone**	0.0020	U	ug/L	P365553	
		Ibuprofen**	0.020	U	ug/L	P365553	
		Imidacloprid	0.0086		ug/L	P365553	MS
		Linuron	0.0040	U	ug/L	P365553	
		MCPP	0.0023	I	ug/L	P365553	
		Naproxen**	0.0080	U	ug/L	P365553	
		Primidone**	0.011	I	ug/L	P365553	
		Pyraclostrobin**	0.0020	U	ug/L	P365553	
		Triclopyr**	0.0040	U	ug/L	P365553	RPD

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P365553

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: P365716

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: P365553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	115		P	40 - 150
Acetaminophen	108		P	30 - 150
Bentazon	79.7		P	30 - 150
Carbamazepine	106		P	40 - 150
Diuron	86.3		P	40 - 150
Fenuron	97.2		P	40 - 150
Fluridone	89.1		P	40 - 150
Hydrocodone	99.4		P	40 - 150
Ibuprofen	76.3		P	30 - 150
Imazapyr	92.1		P	40 - 150
Imidacloprid	103		P	40 - 150
Linuron	67.3		P	40 - 150
MCPP	137		P	40 - 150
Naproxen	80.9		P	40 - 150
Primidone	97.7		P	40 - 150
Pyraclostrobin	77.0		P	30 - 150
Triclopyr	95.8		P	30 - 150

Reference Method: EPA 8321B

Batch ID: P365716

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	106		P	40 - 150
AMPA	103		P	40 - 150
Endothall	95.4		P	40 - 150
Glufosinate	107		P	40 - 150
Glyphosate	107		P	40 - 140
Sucralose	108		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P365553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095117	2,4-D	102	111	P/P	40 - 150
2095117	Acetaminophen	98.7	89.9	P/P	30 - 150
2095117	Bentazon	67.4	55.3	P/P	30 - 150
2095117	Carbamazepine	101	90.9	P/P	40 - 150
2095117	Diuron	79.2	74.5	P/P	40 - 150
2095117	Fenuron	95.5	91.9	P/P	40 - 150
2095117	Fluridone	88.3	88.0	P/P	40 - 150
2095117	Hydrocodone	120	104	P/P	40 - 150
2095117	Ibuprofen	72.6	64.3	P/P	30 - 150
2095117	Imazapyr	117	115	P/P	40 - 150
2095117	Imidacloprid	178	167	F/F	40 - 150
2095117	Linuron	66.4	61.2	P/P	40 - 150
2095117	MCPP	127	126	P/P	40 - 150
2095117	Naproxen	78.1	76.4	P/P	40 - 150
2095117	Primidone	80.0	79.6	P/P	40 - 150
2095117	Pyraclostrobin	83.3	78.0	P/P	30 - 150
2095117	Triclopyr	64.3	92.1	P/P	30 - 150

Reference Method: EPA 8321B
Batch ID: P365716

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095117	Acesulfame K	108	112	P/P	40 - 150
2095117	AMPA	72.3	74.4	P/P	40 - 150
2095117	Endothall	60.8	60.2	P/P	40 - 150
2095117	Glufosinate	95.4	94.9	P/P	40 - 150
2095117	Glyphosate	98.1	98.3	P/P	40 - 140
2095117	Sucralose	101	114	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P365553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095117	2,4-D	7.94	Spike	P	0 - 30
2095117	Acetaminophen	9.39	Spike	P	0 - 30
2095117	Bentazon	18.5	Spike	P	0 - 30
2095117	Carbamazepine	10.3	Spike	P	0 - 30
2095117	Diuron	6.11	Spike	P	0 - 30
2095117	Fenuron	3.85	Spike	P	0 - 30
2095117	Fluridone	0.372	Spike	P	0 - 30
2095117	Hydrocodone	14.3	Spike	P	0 - 30
2095117	Ibuprofen	12.0	Spike	P	0 - 30
2095117	Imazapyr	1.67	Spike	P	0 - 30
2095117	Imidacloprid	6.00	Spike	P	0 - 30
2095117	Linuron	8.10	Spike	P	0 - 30
2095117	MCP	0.876	Spike	P	0 - 30
2095117	Naproxen	2.12	Spike	P	0 - 30
2095117	Primidone	0.591	Spike	P	0 - 30
2095117	Pyraclostrobin	6.51	Spike	P	0 - 30
2095117	Triclopyr	35.5	Spike	F	0 - 30

Reference Method: EPA 8321B
Batch ID: P365716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095117	Acesulfame K	3.84	Spike	P	0 - 30
2095117	AMPA	2.80	Spike	P	0 - 30
2095117	Endothall	0.915	Spike	P	0 - 30
2095117	Glufosinate	0.444	Spike	P	0 - 30
2095117	Glyphosate	0.229	Spike	P	0 - 30
2095117	Sucralose	12.7	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: 2095831
Field Sample ID: G5SW0137

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	89.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	79.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	54.9	P	30 - 160
EPA 8321B	Diuron-d6	54.3	P	30 - 160
EPA 8321B	Endothall-d6	93.1	P	30 - 160
EPA 8321B	Endothall-d6	93.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	66.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	66.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	57.2	P	30 - 160
EPA 8321B	Primidone-d5	72.0	P	30 - 160
EPA 8321B	Sucralose-d6	70.3	P	30 - 160
EPA 8321B	Sucralose-d6	70.3	P	30 - 160

Lab Sample ID: 2095832
Field Sample ID: G5SW0118

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	65.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	81.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	58.5	P	30 - 160
EPA 8321B	Diuron-d6	53.0	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	41.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	41.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	60.6	P	30 - 160
EPA 8321B	Primidone-d5	74.2	P	30 - 160
EPA 8321B	Sucralose-d6	65.3	P	30 - 160
EPA 8321B	Sucralose-d6	65.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A92160

Included Lab Sample IDs: 2095831, 2095832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	92.7	103	P/P	60 - 160
Endothall	106	109	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A92181

Included Lab Sample IDs: 2095831, 2095832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	72.1	78.7	P/P	60 - 160
Glufosinate	85.4	89.4	P/P	60 - 160
Glyphosate	84.3	92.8	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A92342

Included Lab Sample IDs: 2095831, 2095832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	77.7	67.2	P/P	50 - 150
Acetaminophen	85.5	72.9	P/P	60 - 160
Bentazon	68.1	97.3	P/P	50 - 160
Carbamazepine	107	104	P/P	60 - 150
Diuron	98.3	103	P/P	60 - 150
Fenuron	95.0	94.4	P/P	60 - 150
Fluridone	89.0	89.8	P/P	60 - 160
Hydrocodone	112	113	P/P	60 - 150
Ibuprofen	65.1	68.3	P/P	50 - 160
Imazapyr	69.0	79.7	P/P	50 - 150
Imidacloprid	86.5	105	P/P	60 - 150
Linuron	83.9	73.6	P/P	60 - 150
MCPP	77.2	69.1	P/P	50 - 150
Naproxen	91.8	73.0	P/P	50 - 160
Primidone	74.0	93.8	P/P	60 - 150
Pyraclostrobin	94.1	80.9	P/P	60 - 150
Triclopyr	81.7	72.6	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A92427

Included Lab Sample IDs: 2095831, 2095832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	108	103	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A92482

Included Lab Sample IDs: 2095832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazapyr	108	101	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 LCS	SMP	MS
EPA 8321B	2,4-D	115	102	111			7.94
	Acesulfame K	106	108	112			3.84
	Acetaminophen	108	98.7	89.9			9.39
	AMPA	103	72.3	74.4			2.80
	Bentazon	79.7	67.4	55.3			18.5
	Carbamazepine	106	101	90.9			10.3
	Diuron	86.3	79.2	74.5			6.11
	Endothall	95.4	60.8	60.2			0.915
	Fenuron	97.2	95.5	91.9			3.85
	Fluridone	89.1	88.3	88.0			0.372
	Glufosinate	107	95.4	94.9			0.444
	Glyphosate	107	98.1	98.3			0.229
	Hydrocodone	99.4	120	104			14.3
	Ibuprofen	76.3	72.6	64.3			12.0
	Imazapyr	92.1	117	115			1.67
	Imidacloprid	103	178	167			6.00
	Linuron	67.3	66.4	61.2			8.10
	MCPP	137	127	126			0.876
	Naproxen	80.9	78.1	76.4			2.12
	Primidone	97.7	80.0	79.6			0.591
	Pyraclostrobin	77.0	83.3	78.0			6.51
	Sucralose	108	101	114			12.7
	Triclopyr	95.8	64.3	92.1			35.5

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2095831, 2095832
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2095831, 2095832

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/17/2019 21:59	Rebecca Ware	2095831
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/17/2019 22:12	Rebecca Ware	2095832
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/18/2019 13:51	Rebecca Ware	2095831
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/18/2019 14:02	Rebecca Ware	2095832
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/26/2019 21:07	Rebecca Ware	2095831
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/26/2019 21:19	Rebecca Ware	2095832
	06/14/2019	06/19/2019 09:00	Hoor Shaik	06/20/2019 11:16	Juyoung Kim	2095831
	06/14/2019	06/19/2019 09:00	Hoor Shaik	06/20/2019 11:51	Juyoung Kim	2095832
	06/14/2019	06/19/2019 09:00	Hoor Shaik	06/30/2019 07:11	Juyoung Kim	2095832