Chemical Analysis Report

SO-DIST-2018-07-13-01

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

Event Description: **3240M : Stroud Creek**
Request ID: **RQ-2018-07-09-51**
Customer: **SO-DIST**
Project ID: **SMP**

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FLDEP South District Office
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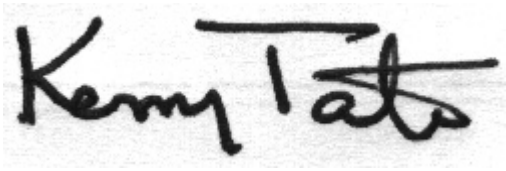
Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 06-AUG-2018 13:55



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 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: Stroud Creek @ SR78 Up Side **Collection Date/Time: 07/12/2018 09:21**

Field ID: AD80308 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2007202	EPA 8321B	2,4-D	0.015		ug/L	P348391	
		Bentazon	8.0E-04	U	ug/L	P348391	
		MCPP	0.0020	U	ug/L	P348391	MS
		Triclopyr**	0.0040	U	ug/L	P348391	MS
		Imidacloprid	0.0020	U	ug/L	P348391	
		Diuron	0.0020	U	ug/L	P348391	
		Pyraclostrobin**	0.0020	U	ug/L	P348391	
		Primidone**	0.0040	U	ug/L	P348391	
		Linuron	0.0040	U	ug/L	P348391	
		Acetaminophen**	0.0080	U	ug/L	P348391	
		Fenuron	0.016	U	ug/L	P348391	
		Imazapyr**	0.013	I	ug/L	P348391	
		Carbamazepine**	4.0E-04	U	ug/L	P348391	
		Fluridone**	0.0011	I	ug/L	P348391	
		Hydrocodone**	8.0E-04	U	ug/L	P348391	
		Naproxen**	0.0080	U	ug/L	P348391	
		Ibuprofen**	0.020	U	ug/L	P348391	
		Sucralose**	0.089		ug/L	P348298	MS, RPD

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P348298

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P348391

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	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P348298

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	116		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P348391

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	65.0		P	40 - 150
Acetaminophen	100		P	30 - 150
Bentazon	76.4		P	30 - 150
Carbamazepine	79.8		P	40 - 150
Diuron	75.6		P	40 - 150
Fenuron	107		P	40 - 150
Fluridone	92.9		P	40 - 150
Hydrocodone	101		P	40 - 150
Ibuprofen	59.9		P	40 - 150
Imazapyr	94.7		P	40 - 150
Imidacloprid	110		P	40 - 160
Linuron	93.2		P	40 - 150
MCPP	97.9		P	40 - 150
Naproxen	75.3		P	40 - 150
Primidone	114		P	40 - 150
Pyraclostrobin	90.1		P	40 - 150
Triclopyr	86.9		P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P348298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2006741	Sucralose	162	107	F/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P348391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2007965	2,4-D	119	121	P/P	40 - 150
2007965	Acetaminophen	96.2	90.0	P/P	30 - 150
2007965	Bentazon	65.5	62.6	P/P	30 - 150
2007965	Carbamazepine	61.5	59.0	P/P	40 - 150
2007965	Diuron	51.8	51.4	P/P	40 - 150
2007965	Fenuron	71.2	65.1	P/P	40 - 150
2007965	Fluridone	83.5	79.3	P/P	40 - 150
2007965	Hydrocodone	69.6	64.1	P/P	40 - 150
2007965	Ibuprofen	107	100	P/P	40 - 150
2007965	Imazapyr	73.3	75.6	P/P	40 - 150
2007965	Imidacloprid	112	104	P/P	40 - 160
2007965	Linuron	78.8	76.4	P/P	40 - 150
2007965	MCPP	150	160	F/F	40 - 150
2007965	Naproxen	128	123	P/P	40 - 150
2007965	Primidone	86.4	78.7	P/P	40 - 150
2007965	Pyraclostrobin	86.4	89.4	P/P	40 - 150
2007965	Triclopyr	174	193	F/F	40 - 150

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P348298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2006741	Sucralose	34.5	Spike	F	0 - 30

Reference Method: EPA 8321B
Batch ID: P348391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2007965	2,4-D	1.56	Spike	P	0 - 30
2007965	Acetaminophen	6.71	Spike	P	0 - 30
2007965	Bentazon	2.71	Spike	P	0 - 30
2007965	Carbamazepine	4.17	Spike	P	0 - 30
2007965	Diuron	0.777	Spike	P	0 - 30
2007965	Fenuron	8.95	Spike	P	0 - 30
2007965	Fluridone	5.04	Spike	P	0 - 30
2007965	Hydrocodone	8.17	Spike	P	0 - 30
2007965	Ibuprofen	6.40	Spike	P	0 - 30
2007965	Imazapyr	0.964	Spike	P	0 - 30
2007965	Imidacloprid	5.92	Spike	P	0 - 30
2007965	Linuron	3.04	Spike	P	0 - 30
2007965	MCPP	6.23	Spike	P	0 - 30
2007965	Naproxen	4.18	Spike	P	0 - 30
2007965	Primidone	9.34	Spike	P	0 - 30
2007965	Pyraclostrobin	3.42	Spike	P	0 - 30
2007965	Triclopyr	9.96	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: 2007202
Field Sample ID: AD80308

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	116	P	30 - 160
EPA 8321B	Acetaminophen-d4	75.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	42.4	P	30 - 160
EPA 8321B	Diuron-d6	36.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	112	P	40 - 160
EPA 8321B	Primidone-d5	58.0	P	30 - 160
EPA 8321B	Sucralose-d6	126	P	40 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A85319
Included Lab Sample IDs: 2007202

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	130	149	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A85612
Included Lab Sample IDs: 2007202

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	102	107	P/P	50 - 150
Bentazon	111	127	P/P	50 - 150
Ibuprofen	105	123	P/P	50 - 150
MCPP	108	120	P/P	50 - 150
Naproxen	115	111	P/P	60 - 150
Triclopyr	98.7	118	P/P	50 - 160

Reference Method: EPA 8321B
Run ID: A85626
Included Lab Sample IDs: 2007202

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	111	109	P/P	60 - 150
Carbamazepine	112	108	P/P	60 - 150
Diuron	91.5	95.7	P/P	60 - 150
Fenuron	107	106	P/P	60 - 150
Fluridone	110	109	P/P	60 - 160
Hydrocodone	109	109	P/P	60 - 150
Imazapyr	91.7	92.4	P/P	50 - 150
Imidacloprid	110	104	P/P	60 - 150
Linuron	108	104	P/P	60 - 150
Primidone	92.1	105	P/P	60 - 150
Pyraclostrobin	105	114	P/P	60 - 150

* 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	65.0	119	121			1.56
	Acetaminophen	100	96.2	90.0			6.71
	Bentazon	76.4	65.5	62.6			2.71
	Carbamazepine	79.8	61.5	59.0			4.17
	Diuron	75.6	51.8	51.4			0.777
	Fenuron	107	71.2	65.1			8.95
	Fluridone	92.9	83.5	79.3			5.04
	Hydrocodone	101	69.6	64.1			8.17
	Ibuprofen	59.9	107	100			6.40
	Imazapyr	94.7	73.3	75.6			0.964
	Imidacloprid	110	112	104			5.92
	Linuron	93.2	78.8	76.4			3.04
	MCPP	97.9	150	160			6.23
	Naproxen	75.3	128	123			4.18
	Primidone	114	86.4	78.7			9.34
	Pyraclostrobin	90.1	86.4	89.4			3.42
	Sucralose	116	162	107			34.5
	Triclopyr	86.9	174	193			9.96

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2007202

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	07/13/2018	07/16/2018 11:30	Juyoung Kim	07/17/2018 08:52	Mohammad Ghaffari	2007202
	07/13/2018	07/18/2018 10:30	Hoor Shaik	07/24/2018 03:25	Juyoung Kim	2007202
	07/13/2018	07/18/2018 10:30	Hoor Shaik	07/26/2018 08:02	Juyoung Kim	2007202