Chemical Analysis Report

SO-DIST-2018-08-01-02

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

Event Description: **3240N : Owl Creek**
Request ID: **RQ-2018-07-09-52**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
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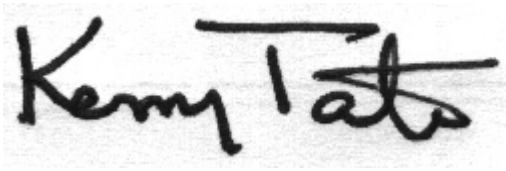
Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 27-AUG-2018 11:09



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: OWL CREEK @ SR78; UPSTREAM SIDE **Collection Date/Time: 07/31/2018 11:35**

Field ID: AD82025 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2012362	EPA 8321B	2,4-D	0.038		ug/L	P349520	
		Sucralose**	0.024	I	ug/L	P349535	
		Bentazon	8.0E-04	U	ug/L	P349520	
		MCPP	0.0020	U	ug/L	P349520	
		Triclopyr**	0.0040	U	ug/L	P349520	
		Imidacloprid	0.0020	U	ug/L	P349520	
		Diuron	0.0020	U	ug/L	P349520	
		Pyraclostrobin**	0.0020	U	ug/L	P349520	
		Primidone**	0.0040	U	ug/L	P349520	
		Linuron	0.0040	U	ug/L	P349520	
		Acetaminophen**	0.0080	U	ug/L	P349520	
		Fenuron	0.016	U	ug/L	P349520	
		Imazapyr**	0.0077	I	ug/L	P349520	
		Carbamazepine**	8.0E-04	U	ug/L	P349520	
		Fluridone**	5.1E-04	I	ug/L	P349520	
		Hydrocodone**	8.0E-04	U	ug/L	P349520	
		Naproxen**	0.0080	U	ug/L	P349520	
		Ibuprofen**	0.020	U	ug/L	P349520	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P349520

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	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

Reference Method: EPA 8321B
Batch ID: P349535

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P349520

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	85.0		P	40 - 150
Acetaminophen	99.0		P	30 - 150
Bentazon	54.5		P	30 - 150
Carbamazepine	102		P	40 - 150
Diuron	85.9		P	40 - 150
Fenuron	111		P	40 - 150
Fluridone	107		P	40 - 150
Hydrocodone	95.9		P	40 - 150
Ibuprofen	98.3		P	40 - 150
Imazapyr	91.0		P	40 - 150
Imidacloprid	108		P	40 - 160
Linuron	83.6		P	40 - 150
MCPP	97.7		P	40 - 150
Naproxen	94.4		P	40 - 150
Primidone	117		P	40 - 150
Pyraclostrobin	77.9		P	40 - 150
Triclopyr	104		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P349535

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	114		P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P349520

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2012676	2,4-D	132	105	P/P	40 - 150
2012676	Acetaminophen	85.3	91.7	P/P	30 - 150
2012676	Bentazon	70.1	63.0	P/P	30 - 150
2012676	Carbamazepine	85.0	87.7	P/P	40 - 150
2012676	Diuron	66.4	68.3	P/P	40 - 150
2012676	Fenuron	95.4	101	P/P	40 - 150
2012676	Fluridone	81.7	106	P/P	40 - 150
2012676	Hydrocodone	83.1	98.0	P/P	40 - 150
2012676	Ibuprofen	65.7	72.5	P/P	40 - 150
2012676	Imazapyr	98.6	97.8	P/P	40 - 150
2012676	Imidacloprid	135	134	P/P	40 - 160
2012676	Linuron	62.7	70.7	P/P	40 - 150
2012676	MCPP	136	131	P/P	40 - 150
2012676	Naproxen	66.6	55.4	P/P	40 - 150
2012676	Primidone	126	111	P/P	40 - 150
2012676	Pyraclostrobin	75.6	79.2	P/P	40 - 150
2012676	Triclopyr	138	140	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P349535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011995	Sucralose	111	109	P/P	40 - 150

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P349520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2012676	2,4-D	21.3	Spike	P	0 - 30
2012676	Acetaminophen	7.28	Spike	P	0 - 30
2012676	Bentazon	9.64	Spike	P	0 - 30
2012676	Carbamazepine	3.15	Spike	P	0 - 30
2012676	Diuron	2.82	Spike	P	0 - 30
2012676	Fenuron	5.33	Spike	P	0 - 30
2012676	Fluridone	18.6	Spike	P	0 - 30
2012676	Hydrocodone	16.5	Spike	P	0 - 30
2012676	Ibuprofen	9.83	Spike	P	0 - 30
2012676	Imazapyr	0.485	Spike	P	0 - 30
2012676	Imidacloprid	0.420	Spike	P	0 - 30
2012676	Linuron	12.1	Spike	P	0 - 30
2012676	MCPP	3.74	Spike	P	0 - 30
2012676	Naproxen	18.4	Spike	P	0 - 30
2012676	Primidone	13.2	Spike	P	0 - 30
2012676	Pyraclostrobin	4.70	Spike	P	0 - 30
2012676	Triclopyr	1.47	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P349535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011995	Sucralose	1.55	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: 2012362
Field Sample ID: AD82025

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	95.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	96.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	70.5	P	30 - 160
EPA 8321B	Diuron-d6	59.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	55.5	P	30 - 160
EPA 8321B	Primidone-d5	74.4	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	40 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A85787
Included Lab Sample IDs: 2012362

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	104	106	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A85823
Included Lab Sample IDs: 2012362

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	104	109	P/P	50 - 150
Acetaminophen	124	97.9	P/P	60 - 160
Bentazon	81.9	78.5	P/P	50 - 160
Carbamazepine	122	120	P/P	60 - 160
Diuron	109	107	P/P	60 - 150
Fenuron	85.3	82.4	P/P	60 - 150
Fluridone	117	106	P/P	60 - 160
Hydrocodone	110	93.6	P/P	60 - 150
Ibuprofen	108	105	P/P	50 - 160
Imazapyr	82.7	79.4	P/P	50 - 150
Imidacloprid	111	93.1	P/P	60 - 150
Linuron	110	118	P/P	60 - 150
MCPP	85.5	80.0	P/P	50 - 150
Naproxen	77.0	86.7	P/P	50 - 160
Primidone	104	96.1	P/P	60 - 150
Pyraclostrobin	101	96.1	P/P	60 - 150
Triclopyr	105	70.5	P/P	50 - 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	85.0	132	105			21.3
	Acetaminophen	99.0	85.3	91.7			7.28
	Bentazon	54.5	70.1	63.0			9.64
	Carbamazepine	102	85.0	87.7			3.15
	Diuron	85.9	66.4	68.3			2.82
	Fenuron	111	95.4	101			5.33
	Fluridone	107	81.7	106			18.6
	Hydrocodone	95.9	83.1	98.0			16.5
	Ibuprofen	98.3	65.7	72.5			9.83
	Imazapyr	91.0	98.6	97.8			0.485
	Imidacloprid	108	135	134			0.420
	Linuron	83.6	62.7	70.7			12.1
	MCPP	97.7	136	131			3.74
	Naproxen	94.4	66.6	55.4			18.4
	Primidone	117	126	111			13.2
	Pyraclostrobin	77.9	75.6	79.2			4.70
	Sucralose	114	111	109			1.55
	Triclopyr	104	138	140			1.47

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2012362
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2012362

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	08/01/2018	08/03/2018 09:00	Mohammad Ghaffari	08/09/2018 08:07	Mohammad Ghaffari	2012362
	08/01/2018	08/06/2018 10:00	Hoor Shaik	08/11/2018 12:03	Juyoung Kim	2012362
	08/01/2018	08/06/2018 10:00	Hoor Shaik	08/12/2018 23:14	Juyoung Kim	2012362