

Chemical Analysis Report

SO-DIST-2021-01-22-02

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

Event Description: **2021 SMP : Way Up There**
Request ID: **RQ-2021-01-18-36**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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: 11-FEB-2021 10:13

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: Arbuckle Branch

Collection Date/Time: 01/21/2021 13:20

Field ID: G4SD0172

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220879	EPA 8321B	2,4-D	0.0020	U	ug/L	P392788	
		Acesulfame K	0.10	U	ug/L	P392897	
		AMPA	0.10	U	ug/L	P392897	
		Sucralose	0.048		ug/L	P392897	
		Acetaminophen**	0.0086	I	ug/L	P392788	
		Acetamiprid**	0.0020	U	ug/L	P392788	
		Endothall	0.25	U	ug/L	P392897	
		Glufosinate	0.10	U	ug/L	P392897	
		Glyphosate	0.10	U	ug/L	P392897	
		Afidopyropen**	0.0020	U	ug/L	P392788	
		Bentazon	0.0027	I	ug/L	P392788	MS
		Benzovindiflupyr**	0.0020	U	ug/L	P392788	
		Carbamazepine**	8.0E-04	U	ug/L	P392788	
		Clothianidin**	0.0020	U	ug/L	P392788	
		Dinotefuran**	0.0020	U	ug/L	P392788	
		Diuron	0.0020	U	ug/L	P392788	
		Fenuron	0.016	U	ug/L	P392788	
		Fluridone**	8.0E-04	U	ug/L	P392788	
		Imazapyr**	0.0040	U	ug/L	P392788	
		Hydrocodone**	0.0020	U	ug/L	P392788	
		Ibuprofen**	0.020	U	ug/L	P392788	
		Imidacloprid	0.0020	U	ug/L	P392788	
		Linuron	0.0040	U	ug/L	P392788	
		Mandestrobin**	0.0020	U	ug/L	P392788	
		MCPP	0.0020	U	ug/L	P392788	
		Naproxen**	0.0080	U	ug/L	P392788	
		Primidone**	0.0040	U	ug/L	P392788	
		Pyraclostrobin**	0.0020	U	ug/L	P392788	
		Thiamethoxam**	0.0020	U	ug/L	P392788	
		Tolfenpyrad**	0.0020	U	ug/L	P392788	
		Triclopyr**	0.0040	U	ug/L	P392788	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P392788

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	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
Mandestrobin	0.0020	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
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B

Batch ID: P392897

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: P392788

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	117		P	30 - 160
Acetaminophen	73.6		P	30 - 160
Acetamiprid	95.3		P	30 - 160
Afidopyropen	75.8		P	30 - 160
Bentazon	75.1		P	30 - 160
Benzovindiflupyr	77.3		P	30 - 160
Carbamazepine	85.2		P	30 - 160
Clothianidin	95.4		P	30 - 160
Dinotefuran	84.6		P	30 - 160
Diuron	60.0		P	30 - 160
Fenuron	94.1		P	30 - 160
Fluridone	83.7		P	30 - 160
Hydrocodone	93.9		P	30 - 160
Ibuprofen	99.1		P	30 - 160
Imazapyr	120		P	30 - 160
Imidacloprid	107		P	30 - 160
Linuron	71.6		P	30 - 160
Mandestrobin	77.6		P	30 - 160
MCPPP	115		P	30 - 160
Naproxen	72.2		P	30 - 160
Primidone	102		P	30 - 160
Pyraclostrobin	74.9		P	30 - 160
Thiamethoxam	107		P	30 - 160
Tolfenpyrad	52.0		P	30 - 160
Triclopyr	108		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P392897

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	101		P	40 - 150
AMPA	104		P	40 - 150
Endothall	93.7		P	40 - 150
Glufosinate	102		P	40 - 150
Glyphosate	80.8		P	40 - 140
Sucralose	108		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P392788

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220844	2,4-D	78.3	84.5	P/P	30 - 160
2220844	Acetaminophen	87.5	84.3	P/P	30 - 160
2220844	Acetamiprid	57.5	61.1	P/P	30 - 160
2220844	Afidopyropen	59.1	62.8	P/P	30 - 160
2220844	Bentazon	20.0	19.1	F/F	30 - 160
2220844	Benzovindiflupyr	64.8	62.4	P/P	30 - 160
2220844	Carbamazepine	50.7	47.8	P/P	30 - 160
2220844	Clothianidin	60.3	62.3	P/P	30 - 160
2220844	Dinotefuran	84.8	79.0	P/P	30 - 160
2220844	Diuron	34.6	34.2	P/P	30 - 160
2220844	Fenuron	48.0	50.9	P/P	30 - 160
2220844	Fluridone	65.3	63.8	P/P	30 - 160
2220844	Hydrocodone	71.1	57.9	P/P	30 - 160
2220844	Ibuprofen	82.7	79.4	P/P	30 - 160
2220844	Imazapyr	102	96.4	P/P	30 - 160
2220844	Imidacloprid	102	97.0	P/P	30 - 160
2220844	Linuron	54.4	51.5	P/P	30 - 160
2220844	Mandestrobin	71.6	67.8	P/P	30 - 160
2220844	MCCP	82.4	80.6	P/P	30 - 160
2220844	Naproxen	85.2	98.3	P/P	30 - 160
2220844	Primidone	62.9	52.5	P/P	30 - 160
2220844	Pyraclostrobin	70.5	66.9	P/P	30 - 160
2220844	Thiamethoxam	93.3	91.9	P/P	30 - 160
2220844	Tolfenpyrad	50.5	51.0	P/P	30 - 160
2220844	Triclopyr	88.2	90.4	P/P	30 - 160

Reference Method: EPA 8321B

Batch ID: P392897

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220641	Acesulfame K	107	106	P/P	40 - 150
2220641	AMPA	126	126	P/P	40 - 150
2220641	Endothall	103	106	P/P	40 - 150
2220641	Glufosinate	95.4	113	P/P	40 - 150
2220641	Glyphosate	94.1	87.8	P/P	40 - 140
2220641	Sucralose	105	106	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P392788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220844	2,4-D	6.77	Spike	P	0 - 30
2220844	Acetaminophen	3.72	Spike	P	0 - 30
2220844	Acetamiprid	6.14	Spike	P	0 - 30
2220844	Afidopyropen	6.13	Spike	P	0 - 30
2220844	Bentazon	2.64	Spike	P	0 - 30
2220844	Benzovindiflupyr	3.86	Spike	P	0 - 30
2220844	Carbamazepine	5.85	Spike	P	0 - 30
2220844	Clothianidin	3.22	Spike	P	0 - 30
2220844	Dinotefuran	7.04	Spike	P	0 - 30
2220844	Diuron	0.971	Spike	P	0 - 30
2220844	Fenuron	5.95	Spike	P	0 - 30
2220844	Fluridone	2.35	Spike	P	0 - 30
2220844	Hydrocodone	20.5	Spike	P	0 - 30
2220844	Ibuprofen	4.03	Spike	P	0 - 30
2220844	Imazapyr	4.81	Spike	P	0 - 30
2220844	Imidacloprid	5.22	Spike	P	0 - 30
2220844	Linuron	5.34	Spike	P	0 - 30
2220844	Mandestrobin	5.39	Spike	P	0 - 30
2220844	MCPP	2.23	Spike	P	0 - 30
2220844	Naproxen	14.3	Spike	P	0 - 30
2220844	Primidone	18.1	Spike	P	0 - 30
2220844	Pyraclostrobin	5.22	Spike	P	0 - 30
2220844	Thiamethoxam	1.60	Spike	P	0 - 30
2220844	Tolfenpyrad	0.995	Spike	P	0 - 30
2220844	Triclopyr	2.48	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P392897

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220641	Acesulfame K	0.905	Spike	P	0 - 30
2220641	AMPA	0.326	Spike	P	0 - 30
2220641	Endothall	2.53	Spike	P	0 - 30
2220641	Glufosinate	17.1	Spike	P	0 - 30
2220641	Glyphosate	7.01	Spike	P	0 - 30
2220641	Sucralose	0.971	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2220879

Field Sample ID: G4SD0172

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	85.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	76.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	43.7	P	30 - 160
EPA 8321B	Diuron-d6	36.7	P	30 - 160
EPA 8321B	Endothall-d6	98.9	P	40 - 160
EPA 8321B	Endothall-d6	98.9	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	65.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	65.5	P	40 - 160
EPA 8321B	Ibuprofen-d3	84.6	P	30 - 160
EPA 8321B	Primidone-d5	59.0	P	30 - 160
EPA 8321B	Sucralose-d6	81.9	P	30 - 160
EPA 8321B	Sucralose-d6	81.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A103282
Included Lab Sample IDs: 2220879

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	103	97.1	P/P	60 - 160
AMPA	108	115	P/P	60 - 160
Endothall	98.9	104	P/P	60 - 160
Glufosinate	94.9	91.2	P/P	60 - 160
Glyphosate	90.8	88.8	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A103292
Included Lab Sample IDs: 2220879

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	108	107	P/P	50 - 150
Acetaminophen	78.7	79.1	P/P	60 - 160
Acetamiprid	107	102	P/P	50 - 150
Afidopyropen	84.5	103	P/P	50 - 150
Bentazon	120	117	P/P	50 - 160
Benzovindiflupyr	101	90.8	P/P	50 - 160
Carbamazepine	101	97.8	P/P	60 - 150
Clothianidin	94.1	83.5	P/P	60 - 150
Dinotefuran	93.9	80.8	P/P	50 - 150
Diuron	109	94.1	P/P	60 - 160
Fenuron	96.9	88.0	P/P	60 - 150
Fluridone	100	89.8	P/P	60 - 160
Hydrocodone	99.8	93.3	P/P	60 - 150
Ibuprofen	104	89.4	P/P	50 - 160
Imazapyr	94.8	118	P/P	50 - 160
Imidacloprid	99.1	91.2	P/P	60 - 150
Linuron	96.5	92.8	P/P	60 - 150
Mandestrobin	99.2	98.4	P/P	50 - 150
MCPP	128	118	P/P	50 - 150
Naproxen	100	118	P/P	50 - 160
Primidone	87.3	85.1	P/P	60 - 150
Pyraclostrobin	103	94.7	P/P	60 - 150
Thiamethoxam	117	98.0	P/P	50 - 150
Tolfenpyrad	103	104	P/P	60 - 150
Triclopyr	118	109	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A103516
Included Lab Sample IDs: 2220879

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	110	108	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 SMP	MS
			LCS	MS		
EPA 8321B	2,4-D	117	78.3	84.5		6.77
	Acesulfame K	101	107	106		0.905
	Acetaminophen	73.6	87.5	84.3		3.72
	Acetamiprid	95.3	57.5	61.1		6.14
	Afidopyropen	75.8	59.1	62.8		6.13
	AMPA	104	126	126		0.326
	Bentazon	75.1	20.0	19.1		2.64
	Benzovindiflupyr	77.3	64.8	62.4		3.86
	Carbamazepine	85.2	50.7	47.8		5.85
	Clothianidin	95.4	60.3	62.3		3.22
	Dinotefuran	84.6	84.8	79.0		7.04
	Diuron	60.0	34.6	34.2		0.971
	Endothall	93.7	103	106		2.53
	Fenuron	94.1	48.0	50.9		5.95
	Fluridone	83.7	65.3	63.8		2.35
	Glufosinate	102	95.4	113		17.1
	Glyphosate	80.8	94.1	87.8		7.01
	Hydrocodone	93.9	71.1	57.9		20.5
	Ibuprofen	99.1	82.7	79.4		4.03
	Imazapyr	120	102	96.4		4.81
	Imidacloprid	107	102	97.0		5.22
	Linuron	71.6	54.4	51.5		5.34
	Mandestrobin	77.6	71.6	67.8		5.39
	MCPP	115	82.4	80.6		2.23
	Naproxen	72.2	85.2	98.3		14.3
	Primidone	102	62.9	52.5		18.1
	Pyraclostrobin	74.9	70.5	66.9		5.22
	Sucralose	108	105	106		0.971
	Thiamethoxam	107	93.3	91.9		1.60
	Tolfenpyrad	52.0	50.5	51.0		0.995
	Triclopyr	108	88.2	90.4		2.48

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2220879
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2220879

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	01/22/2021	01/26/2021 13:30	Rebecca Ware	01/27/2021 19:43	Rebecca Ware	2220879
	01/22/2021	01/26/2021 13:30	Rebecca Ware	02/09/2021 15:09	Rebecca Ware	2220879
	01/22/2021	01/27/2021 09:00	Hoor Shaik	01/28/2021 21:06	Juyoung Kim	2220879