

Chemical Analysis Report

SE-DIST-2021-07-27-01

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

Event Description: **SMP - Palm Beach**
Request ID: **RQ-2021-05-24-53**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 03-AUG-2021 09:25



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: Boynton Beach Canal @ Congress

Collection Date/Time: 07/26/2021 11:30

Field ID: G3SE0054

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2265167	EPA 8321B	2,4-D	0.55		ug/L	P401633	
		Acesulfame K	0.10	U	ug/L	P401536	
		2,4,5-T	0.0040	U	ug/L	P401633	
		AMPA	1.5		ug/L	P401536	
		Acetaminophen	0.011	I	ug/L	P401633	
		Acetamiprid	0.0020	I	ug/L	P401633	
		Endothall	0.25	U	ug/L	P401536	
		Glufosinate	0.10	U	ug/L	P401536	
		Glyphosate	2.5		ug/L	P401536	
		Afidopyropen	0.0020	U	ug/L	P401633	
		Bentazon	0.13		ug/L	P401633	
		Sucralose	0.75		ug/L	P401536	
		Benzovindiflupyr	0.0020	U	ug/L	P401633	
		Carbamazepine	0.0014	I	ug/L	P401633	
		Clothianidin	0.0044	I	ug/L	P401633	
		Dinotefuran	0.050		ug/L	P401633	
		Diuron	0.21		ug/L	P401633	
		Fenuron	0.016	U	ug/L	P401633	
		Fluridone	0.16		ug/L	P401633	
		Imazapyr	0.20		ug/L	P401633	
		Hydrocodone	0.0020	U	ug/L	P401633	
		Ibuprofen	0.020	U	ug/L	P401633	
		Imidacloprid	0.053		ug/L	P401633	
		Linuron	0.0040	U	ug/L	P401633	
		Mandestrobin	0.0020	U	ug/L	P401633	
		MCPP	0.0070	I	ug/L	P401633	
		Naproxen	0.0080	U	ug/L	P401633	
		Primidone	0.0041	I	ug/L	P401633	
		Pyraclostrobin	0.0031	I	ug/L	P401633	
		Thiamethoxam	0.016		ug/L	P401633	
		Tolfenpyrad	0.0020	U	ug/L	P401633	
		Triclopyr	0.0040	U	ug/L	P401633	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P401536

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

Reference Method: EPA 8321B

Batch ID: P401633

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P401536

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	101		P	40 - 150
AMPA	115		P	40 - 150
Endothall	74.0		P	40 - 150
Glufosinate	104		P	40 - 150
Glyphosate	97.1		P	40 - 150
Sucralose	101		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P401633

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	118		P	40 - 150
2,4,5-T	121		P	40 - 150
Acetaminophen	107		P	30 - 150
Acetamiprid	88.4		P	40 - 150
Afidopyropen	64.9		P	40 - 150
Bentazon	113		P	30 - 150
Benzovindiflupyr	86.8		P	40 - 150
Carbamazepine	101		P	40 - 150
Clothianidin	99.5		P	40 - 150
Dinotefuran	89.4		P	40 - 150
Diuron	107		P	40 - 150
Fenuron	98.9		P	40 - 150
Fluridone	95.1		P	40 - 150
Hydrocodone	95.4		P	40 - 150
Ibuprofen	88.8		P	40 - 150
Imazapyr	107		P	40 - 150
Imidacloprid	100		P	40 - 150
Linuron	84.9		P	40 - 150
Mandestrobin	86.1		P	40 - 150
MCPP	116		P	40 - 150
Naproxen	86.6		P	40 - 150
Primidone	105		P	40 - 150
Pyraclostrobin	82.4		P	40 - 150
Thiamethoxam	93.5		P	40 - 150
Tolfenpyrad	48.2		P	30 - 150
Triclopyr	114		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P401536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264960	Acesulfame K	145	144	P/P	40 - 150
2264960	AMPA	91.9	91.6	P/P	40 - 150
2264960	Endothall	99.9	104	P/P	40 - 150
2264960	Glufosinate	105	102	P/P	40 - 150
2264960	Glyphosate	79.6	78.4	P/P	40 - 150
2264960	Sucralose	101	103	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P401633

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264998	2,4-D	98.6	111	P/P	40 - 150
2264998	2,4,5-T	107	116	P/P	40 - 150
2264998	Acetaminophen	104	115	P/P	30 - 150
2264998	Acetamiprid	82.9	85.1	P/P	40 - 150
2264998	Afidopyropen	58.4	50.0	P/P	40 - 150
2264998	Bentazon	95.2	107	P/P	30 - 150
2264998	Benzovindiflupyr	80.7	89.7	P/P	40 - 150
2264998	Carbamazepine	94.2	105	P/P	40 - 150
2264998	Clothianidin	95.7	105	P/P	40 - 150
2264998	Dinotefuran	96.8	100	P/P	40 - 150
2264998	Diuron	94.1	105	P/P	40 - 150
2264998	Fenuron	88.1	95.5	P/P	40 - 150
2264998	Fluridone	86.9	96.2	P/P	40 - 150
2264998	Hydrocodone	90.2	98.4	P/P	40 - 150
2264998	Ibuprofen	96.8	89.8	P/P	40 - 150
2264998	Imazapyr	94.4	105	P/P	40 - 150
2264998	Imidacloprid	110	120	P/P	40 - 150
2264998	Linuron	76.0	88.3	P/P	40 - 150
2264998	Mandestrobin	82.9	91.3	P/P	40 - 150
2264998	MCP	107	118	P/P	40 - 150
2264998	Naproxen	86.3	92.2	P/P	40 - 150
2264998	Primidone	102	107	P/P	40 - 150
2264998	Pyraclostrobin	78.6	87.7	P/P	40 - 150
2264998	Thiamethoxam	102	110	P/P	40 - 150
2264998	Tolfenpyrad	47.8	54.0	P/P	30 - 150
2264998	Triclopyr	103	109	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P401536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264960	Acesulfame K	0.811	Spike	P	0 - 30
2264960	AMPA	0.390	Spike	P	0 - 30
2264960	Endothall	3.67	Spike	P	0 - 30
2264960	Glufosinate	2.67	Spike	P	0 - 30
2264960	Glyphosate	1.57	Spike	P	0 - 30
2264960	Sucralose	1.65	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P401633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264998	2,4-D	9.08	Spike	P	0 - 30
2264998	2,4,5-T	7.96	Spike	P	0 - 30
2264998	Acetaminophen	10.7	Spike	P	0 - 30
2264998	Acetamiprid	2.62	Spike	P	0 - 30
2264998	Afidopyropen	15.6	Spike	P	0 - 30
2264998	Bentazon	7.74	Spike	P	0 - 30
2264998	Benzovindiflupyr	10.6	Spike	P	0 - 30
2264998	Carbamazepine	10.1	Spike	P	0 - 30
2264998	Clothianidin	9.03	Spike	P	0 - 30
2264998	Dinotefuran	3.39	Spike	P	0 - 30
2264998	Diuron	8.95	Spike	P	0 - 30
2264998	Fenuron	8.08	Spike	P	0 - 30
2264998	Fluridone	10.1	Spike	P	0 - 30
2264998	Hydrocodone	8.75	Spike	P	0 - 30
2264998	Ibuprofen	7.51	Spike	P	0 - 30
2264998	Imazapyr	8.09	Spike	P	0 - 30
2264998	Imidacloprid	7.84	Spike	P	0 - 30
2264998	Linuron	15.0	Spike	P	0 - 30
2264998	Mandestrobin	9.64	Spike	P	0 - 30
2264998	MCPP	9.10	Spike	P	0 - 30
2264998	Naproxen	6.67	Spike	P	0 - 30
2264998	Primidone	4.91	Spike	P	0 - 30
2264998	Pyraclostrobin	10.9	Spike	P	0 - 30
2264998	Thiamethoxam	7.64	Spike	P	0 - 30
2264998	Tolfenpyrad	12.4	Spike	P	0 - 30
2264998	Triclopyr	5.20	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2265167

Field Sample ID: G3SE0054

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	126	P	30 - 160
EPA 8321B	Acetaminophen-d4	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	109	P	30 - 160
EPA 8321B	Diuron-d6	90.6	P	30 - 160
EPA 8321B	Endothall-d6	107	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	94.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	85.6	P	30 - 160
EPA 8321B	Primidone-d5	102	P	30 - 160
EPA 8321B	Sucralose-d6	105	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A106898
Included Lab Sample IDs: 2265167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	119	120	P/P	60 - 160
Glufosinate	102	105	P/P	60 - 160
Glyphosate	102	103	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A106904
Included Lab Sample IDs: 2265167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	99.5	99.0	P/P	60 - 160
Endothall	84.0	79.7	P/P	60 - 160
Sucralose	98.5	98.8	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A106940
Included Lab Sample IDs: 2265167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.0	90.1	P/P	50 - 150
2,4,5-T	95.6	97.1	P/P	50 - 150
Acetaminophen	104	101	P/P	60 - 160
Acetamiprid	96.1	97.6	P/P	50 - 150
Afidopyropen	94.0	95.1	P/P	50 - 150
Bentazon	114	116	P/P	50 - 160
Benzovindiflupyr	93.9	96.0	P/P	50 - 150
Carbamazepine	99.3	99.9	P/P	60 - 150
Clothianidin	95.5	94.2	P/P	60 - 150
Dinotefuran	104	102	P/P	50 - 150
Diuron	113	110	P/P	60 - 160
Fenuron	96.7	96.1	P/P	60 - 150
Fluridone	98.6	101	P/P	60 - 160
Hydrocodone	100	105	P/P	60 - 150
Ibuprofen	97.4	94.3	P/P	50 - 160
Imazapyr	107	111	P/P	50 - 150
Imidacloprid	91.9	92.8	P/P	60 - 150
Linuron	102	95.1	P/P	60 - 150
Mandestrobin	96.4	95.6	P/P	50 - 150
MCPP	90.4	90.0	P/P	50 - 150
Naproxen	108	101	P/P	50 - 160
Primidone	101	92.7	P/P	60 - 150
Pyraclostrobin	97.5	98.2	P/P	60 - 150
Thiamethoxam	97.6	97.3	P/P	50 - 150
Tolfenpyrad	95.2	96.2	P/P	60 - 150
Triclopyr	90.6	92.4	P/P	50 - 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 SMP	MS
			LCS			
EPA 8321B	2,4-D	118	98.6	111		9.08
	2,4,5-T	121	107	116		7.96
	Acesulfame K	101	145	144		0.811
	Acetaminophen	107	104	115		10.7
	Acetamiprid	88.4	82.9	85.1		2.62
	Afidopyropen	64.9	58.4	50.0		15.6
	AMPA	115	91.9	91.6		0.390
	Bentazon	113	95.2	107		7.74
	Benzovindiflupyr	86.8	80.7	89.7		10.6
	Carbamazepine	101	94.2	105		10.1
	Clothianidin	99.5	95.7	105		9.03
	Dinotefuran	89.4	96.8	100		3.39
	Diuron	107	94.1	105		8.95
	Endothall	74.0	99.9	104		3.67
	Fenuron	98.9	88.1	95.5		8.08
	Fluridone	95.1	86.9	96.2		10.1
	Glufosinate	104	105	102		2.67
	Glyphosate	97.1	79.6	78.4		1.57
	Hydrocodone	95.4	90.2	98.4		8.75
	Ibuprofen	88.8	96.8	89.8		7.51
	Imazapyr	107	94.4	105		8.09
	Imidacloprid	100	110	120		7.84
	Linuron	84.9	76.0	88.3		15.0
	Mandestrobin	86.1	82.9	91.3		9.64
	MCPP	116	107	118		9.10
	Naproxen	86.6	86.3	92.2		6.67
	Primidone	105	102	107		4.91
	Pyraclostrobin	82.4	78.6	87.7		10.9
	Sucralose	101	101	103		1.65
	Thiamethoxam	93.5	102	110		7.64
	Tolfenpyrad	48.2	47.8	54.0		12.4
	Triclopyr	114	103	109		5.20

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2265167

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	07/27/2021	07/28/2021 08:30	Pramila Ghimire	07/28/2021 14:28	Juyoung Kim	2265167
	07/27/2021	07/28/2021 08:30	Pramila Ghimire	07/28/2021 18:31	Pramila Ghimire	2265167
	07/27/2021	07/29/2021 09:00	Hoor Shaik	07/30/2021 01:06	Juyoung Kim	2265167
	07/27/2021	07/29/2021 09:00	Hoor Shaik	07/30/2021 11:28	Juyoung Kim	2265167