

Chemical Analysis Report

SW-DIST-2022-09-21-03

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

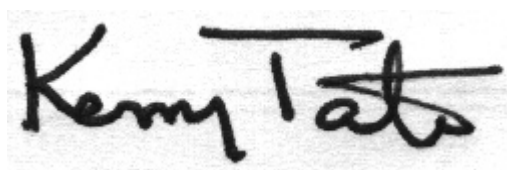
Event Description: **Run 7: Gilly Gamble Buffalo Manatee**
Request ID: **RQ-2022-09-19-24**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Ben Paswater

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 27-SEP-2022 10:51

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line extending from the end of the 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: Gamble Creek @ CR 675

Collection Date/Time: 09/20/2022 12:40

Field ID: G2SW0140

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2358300	EPA 8321B	2,4-D	0.0042	I	ug/L	P419978	
		Acesulfame K	0.10	U	ug/L	P419904	
		2,4,5-T	0.0040	U	ug/L	P419978	
		AMPA	5.6		ug/L	P419904	
		Acetaminophen	0.0080	U	ug/L	P419978	
		Acetamiprid	0.0056	I	ug/L	P419978	
		Endothall	0.25	U	ug/L	P419904	
		Glufosinate	0.10	U	ug/L	P419904	
		Glyphosate	3.7		ug/L	P419904	
		Afidopyropen	0.0020	U	ug/L	P419978	
		Bentazon	0.066		ug/L	P419978	
		Sucralose	0.041		ug/L	P419904	
		Benzovindiflupyr	0.0070	I	ug/L	P419978	
		Carbamazepine	8.0E-04	U	ug/L	P419978	
		Clothianidin	0.0046	I	ug/L	P419978	
		Dinotefuran	0.22		ug/L	P419978	
		Diuron	0.0030	I	ug/L	P419978	
		Fenuron	0.016	U	ug/L	P419978	
		Fluridone	0.0040		ug/L	P419978	
		Imazapyr	0.045		ug/L	P419978	
		Hydrocodone	0.0020	U	ug/L	P419978	
		Ibuprofen	0.020	U	ug/L	P419978	
		Imidacloprid	0.032		ug/L	P419978	MS
		Linuron	0.0040	U	ug/L	P419978	
		Mandestrobin	0.0020	U	ug/L	P419978	
		MCPP	0.0020	U	ug/L	P419978	
		Naproxen	0.0080	U	ug/L	P419978	
		Primidone	0.0040	U	ug/L	P419978	
		Pyraclostrobin	0.0020	U	ug/L	P419978	
		Thiamethoxam	0.017		ug/L	P419978	
		Tolfenpyrad	0.0020	U	ug/L	P419978	
		Triclopyr	0.0040	U	ug/L	P419978	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P419904

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: P419978

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: P419904

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	103		P	40 - 150
AMPA	105		P	40 - 150
Endothall	98.5		P	40 - 150
Glufosinate	88.5		P	40 - 150
Glyphosate	103		P	40 - 150
Sucralose	106		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P419978

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	73.0		P	30 - 160
2,4,5-T	68.7		P	30 - 160
Acetaminophen	95.6		P	30 - 150
Acetamiprid	81.4		P	30 - 160
Afidopyropen	60.7		P	30 - 160
Bentazon	93.9		P	30 - 150
Benzovindiflupyr	79.6		P	30 - 160
Carbamazepine	78.2		P	30 - 160
Clothianidin	100		P	30 - 160
Dinotefuran	98.2		P	30 - 160
Diuron	51.0		P	30 - 160
Fenuron	109		P	30 - 160
Fluridone	92.5		P	30 - 160
Hydrocodone	88.4		P	30 - 160
Ibuprofen	50.8		P	30 - 160
Imazapyr	103		P	30 - 160
Imidacloprid	123		P	30 - 160
Linuron	84.2		P	30 - 160
Mandestrobin	102		P	30 - 160
MCPP	75.6		P	30 - 160
Naproxen	76.7		P	30 - 160
Primidone	88.6		P	30 - 160
Pyraclostrobin	86.4		P	30 - 160
Thiamethoxam	102		P	30 - 160
Tolfenpyrad	50.6		P	30 - 160
Triclopyr	68.6		P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P419904

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357804	Acesulfame K	102	103	P/P	40 - 150
2357804	AMPA	82.9	83.0	P/P	40 - 150
2357804	Endothall	86.6	89.6	P/P	40 - 150
2357804	Glufosinate	64.3	69.7	P/P	40 - 150
2357804	Glyphosate	89.2	91.4	P/P	40 - 150
2357804	Sucralose	99.3	97.0	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P419978

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357801	2,4-D	107	83.9	P/P	30 - 160
2357801	2,4,5-T	100	90.5	P/P	30 - 160
2357801	Acetaminophen	117	103	P/P	30 - 150
2357801	Acetamiprid	89.2	80.8	P/P	30 - 160
2357801	Afidopyropen	78.1	85.8	P/P	30 - 160
2357801	Bentazon	109	87.9	P/P	30 - 150
2357801	Benzovindiflupyr	80.3	92.3	P/P	30 - 160
2357801	Carbamazepine	87.4	79.3	P/P	30 - 160
2357801	Clothianidin	119	89.5	P/P	30 - 160
2357801	Dinotefuran	129	109	P/P	30 - 160
2357801	Diuron	55.5	63.7	P/P	30 - 160
2357801	Fenuron	133	113	P/P	30 - 160
2357801	Fluridone	110	96.6	P/P	30 - 160
2357801	Hydrocodone	98.4	93.1	P/P	30 - 160
2357801	Ibuprofen	50.1	43.4	P/P	30 - 160
2357801	Imazapyr	134	115	P/P	30 - 160
2357801	Imidacloprid	163	130	F/P	30 - 160
2357801	Linuron	94.5	74.0	P/P	30 - 160
2357801	Mandestrobin	119	102	P/P	30 - 160
2357801	MCPP	108	97.0	P/P	30 - 160
2357801	Naproxen	97.7	91.6	P/P	30 - 160
2357801	Primidone	118	96.2	P/P	30 - 160
2357801	Pyraclostrobin	109	94.9	P/P	30 - 160
2357801	Thiamethoxam	124	112	P/P	30 - 160
2357801	Tolfenpyrad	75.7	61.9	P/P	30 - 160
2357801	Triclopyr	101	88.5	P/P	30 - 160

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P419904

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357804	Acesulfame K	1.27	Spike	P	0 - 30
2357804	AMPA	0.0482	Spike	P	0 - 30
2357804	Endothall	3.35	Spike	P	0 - 30
2357804	Glufosinate	8.01	Spike	P	0 - 30
2357804	Glyphosate	2.46	Spike	P	0 - 30
2357804	Sucralose	2.34	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P419978

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357801	2,4-D	24.4	Spike	P	0 - 30
2357801	2,4,5-T	10.3	Spike	P	0 - 30
2357801	Acetaminophen	12.4	Spike	P	0 - 30
2357801	Acetamiprid	9.84	Spike	P	0 - 30
2357801	Afidopyropen	9.45	Spike	P	0 - 30
2357801	Bentazon	16.9	Spike	P	0 - 30
2357801	Benzovindiflupyr	14.0	Spike	P	0 - 30
2357801	Carbamazepine	9.70	Spike	P	0 - 30
2357801	Clothianidin	28.3	Spike	P	0 - 30
2357801	Dinotefuran	15.6	Spike	P	0 - 30
2357801	Diuron	13.7	Spike	P	0 - 30
2357801	Fenuron	16.6	Spike	P	0 - 30
2357801	Fluridone	13.3	Spike	P	0 - 30
2357801	Hydrocodone	5.46	Spike	P	0 - 30
2357801	Ibuprofen	14.3	Spike	P	0 - 30
2357801	Imazapyr	14.6	Spike	P	0 - 30
2357801	Imidacloprid	22.3	Spike	P	0 - 30
2357801	Linuron	24.3	Spike	P	0 - 30
2357801	Mandestrobin	14.6	Spike	P	0 - 30
2357801	MCPP	10.3	Spike	P	0 - 30
2357801	Naproxen	6.51	Spike	P	0 - 30
2357801	Primidone	20.1	Spike	P	0 - 30
2357801	Pyraclostrobin	14.0	Spike	P	0 - 30
2357801	Thiamethoxam	10.8	Spike	P	0 - 30
2357801	Tolfenpyrad	20.0	Spike	P	0 - 30
2357801	Triclopyr	12.8	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2358300

Field Sample ID: G2SW0140

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	85.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	112	P	30 - 160
EPA 8321B	Carbamazepine-d10	61.4	P	30 - 160
EPA 8321B	Diuron-d6	51.5	P	30 - 160
EPA 8321B	Endothall-d6	147	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	109	P	30 - 160
EPA 8321B	Ibuprofen-d3	77.5	P	30 - 160
EPA 8321B	Primidone-d5	92.6	P	30 - 160
EPA 8321B	Sucralose-d6	93.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A114873
Included Lab Sample IDs: 2358300

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	108	114	P/P	60 - 160
Sucralose	105	104	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A114916
Included Lab Sample IDs: 2358300

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	101	98.5	P/P	50 - 150
2,4,5-T	103	102	P/P	50 - 150
Acetaminophen	107	109	P/P	60 - 160
Acetamiprid	101	99.2	P/P	50 - 150
Afidopyropen	111	108	P/P	50 - 150
Bentazon	85.2	105	P/P	50 - 160
Benzovindiflupyr	106	106	P/P	50 - 160
Carbamazepine	114	110	P/P	60 - 150
Clothianidin	105	108	P/P	60 - 150
Dinotefuran	110	110	P/P	50 - 150
Diuron	115	111	P/P	60 - 160
Fenuron	100	101	P/P	60 - 150
Fluridone	112	105	P/P	60 - 160
Hydrocodone	110	112	P/P	60 - 150
Ibuprofen	92.4	109	P/P	50 - 160
Imazapyr	112	107	P/P	50 - 150
Imidacloprid	103	90.2	P/P	60 - 150
Linuron	111	104	P/P	60 - 150
Mandestrobin	120	118	P/P	50 - 150
MCPP	102	90.2	P/P	50 - 150
Naproxen	118	94.2	P/P	50 - 160
Primidone	101	106	P/P	60 - 150
Pyraclostrobin	116	114	P/P	60 - 150
Thiamethoxam	110	103	P/P	50 - 150
Tolfenpyrad	128	118	P/P	60 - 150
Triclopyr	91.0	97.3	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A114925
Included Lab Sample IDs: 2358300

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	106	106	P/P	60 - 160
Endothall	83.4	70.3	P/P	60 - 160
Glufosinate	78.4	70.3	P/P	60 - 160
Glyphosate	100	101	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			
EPA 8321B	2,4-D	73.0	107	83.9		24.4
	2,4,5-T	68.7	100	90.5		10.3
	Acesulfame K	103	102	103		1.27
	Acetaminophen	95.6	117	103		12.4
	Acetamiprid	81.4	89.2	80.8		9.84
	Afidopyropen	60.7	78.1	85.8		9.45
	AMPA	105	82.9	83.0		0.0482
	Bentazon	93.9	109	87.9		16.9
	Benzovindiflupyr	79.6	80.3	92.3		14.0
	Carbamazepine	78.2	87.4	79.3		9.70
	Clothianidin	100	119	89.5		28.3
	Dinotefuran	98.2	129	109		15.6
	Diuron	51.0	55.5	63.7		13.7
	Endothall	98.5	86.6	89.6		3.35
	Fenuron	109	133	113		16.6
	Fluridone	92.5	110	96.6		13.3
	Glufosinate	88.5	64.3	69.7		8.01
	Glyphosate	103	89.2	91.4		2.46
	Hydrocodone	88.4	98.4	93.1		5.46
	Ibuprofen	50.8	50.1	43.4		14.3
	Imazapyr	103	134	115		14.6
	Imidacloprid	123	163	130		22.3
	Linuron	84.2	94.5	74.0		24.3
	Mandestrobin	102	119	102		14.6
	MCPP	75.6	108	97.0		10.3
	Naproxen	76.7	97.7	91.6		6.51
	Primidone	88.6	118	96.2		20.1
	Pyraclostrobin	86.4	109	94.9		14.0
	Sucralose	106	99.3	97.0		2.34
	Thiamethoxam	102	124	112		10.8
	Tolfenpyrad	50.6	75.7	61.9		20.0
	Triclopyr	68.6	101	88.5		12.8

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2358300

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	09/21/2022	09/22/2022 14:00	Umesh Chiluwal	09/23/2022 10:08	Umesh Chiluwal	2358300
	09/21/2022	09/22/2022 14:00	Umesh Chiluwal	09/23/2022 18:01	Umesh Chiluwal	2358300
	09/21/2022	09/23/2022 08:00	June Rhew	09/24/2022 03:38	Juyoung Kim	2358300