

Chemical Analysis Report

SO-DIST-2022-01-12-02

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

Event Description: **2022 SMP : Rookery Bay**

Request ID: **RQ-2022-01-10-45**

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
Attn: William Mullen

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

Date Certified: 25-JAN-2022 10:46

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 "T" and a long horizontal stroke at the end.

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: Rock Creek

Collection Date/Time: 01/11/2022 09:50

Field ID: G1SD0095

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2299145	EPA 8321B	Acesulfame K	0.10	U	ug/L	P408383	
		2,4-D	0.0020	U	ug/L	P408408	
		AMPA	1.0	U	ug/L	P408383	
		2,4,5-T	0.0040	U	ug/L	P408408	
		Acetaminophen	0.0080	U	ug/L	P408408	
		Endothall	0.25	U	ug/L	P408383	
		Acetamiprid	0.0020	U	ug/L	P408408	
		Glufosinate	1.0	U	ug/L	P408383	
		Glyphosate	1.0	U	ug/L	P408383	
		Afidopyropen	0.0020	U	ug/L	P408408	RPD
		Sucralose	0.26		ug/L	P408383	
		Bentazon	0.11		ug/L	P408408	
		Benzovindiflupyr	0.0020	U	ug/L	P408408	
		Carbamazepine	0.0010	I	ug/L	P408408	
		Clothianidin	0.0020	U	ug/L	P408408	
		Dinotefuran	0.0020	U	ug/L	P408408	
		Diuron	0.0020	U	ug/L	P408408	
		Fenuron	0.016	U	ug/L	P408408	
		Fluridone	0.015		ug/L	P408408	
		Imazapyr	0.048		ug/L	P408408	
		Hydrocodone	0.0020	U	ug/L	P408408	
		Ibuprofen	0.020	U	ug/L	P408408	
		Imidacloprid	0.0043	I	ug/L	P408408	MS
		Linuron	0.0040	U	ug/L	P408408	RPD
		Mandestrobin	0.0020	U	ug/L	P408408	
		MCPP	0.0040	U	ug/L	P408408	
		Naproxen	0.0080	U	ug/L	P408408	
		Primidone	0.0040	U	ug/L	P408408	
		Pyraclostrobin	0.0020	U	ug/L	P408408	
		Silvex	0.0040	U	ug/L	P408408	
		Thiamethoxam	0.0020	U	ug/L	P408408	MS
		Tolfenpyrad	0.0020	U	ug/L	P408408	
		Triclopyr	0.0040	U	ug/L	P408408	

Ref. Method and Comment:

EPA 8321B: MDL for some parameters elevated due to matrix interference.

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P408383

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: P408408

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	0.0040	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Silvex	0.0040	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: P408383

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	99.0		P	40 - 150
AMPA	99.9		P	40 - 160
Endothall	85.8		P	40 - 150
Glufosinate	104		P	40 - 160
Glyphosate	100		P	40 - 160
Sucralose	111		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P408408

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	123		P	40 - 150
2,4,5-T	132		P	40 - 150
Acetaminophen	75.3		P	30 - 150
Acetamiprid	101		P	40 - 150
Afidopyropen	83.8		P	40 - 150
Bentazon	96.6		P	30 - 150
Benzovindiflupyr	99.1		P	40 - 150
Carbamazepine	105		P	40 - 150
Clothianidin	101		P	40 - 150
Dinotefuran	94.8		P	40 - 150
Diuron	95.7		P	40 - 150
Fenuron	101		P	40 - 150
Fluridone	96.1		P	40 - 150
Hydrocodone	89.0		P	40 - 150
Ibuprofen	138		P	40 - 150
Imazapyr	105		P	40 - 150
Imidacloprid	103		P	40 - 150
Linuron	91.4		P	40 - 150
Mandestrobin	99.6		P	40 - 150
MCPP	121		P	40 - 150
Naproxen	112		P	40 - 150
Primidone	106		P	40 - 150
Pyraclostrobin	90.3		P	40 - 150
Silvex	111		P	40 - 150
Thiamethoxam	96.7		P	40 - 150
Tolfenpyrad	46.3		P	30 - 150
Triclopyr	107		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P408383

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299106	Acesulfame K	114	118	P/P	40 - 150
2299106	AMPA	96.8	103	P/P	40 - 160
2299106	Endothall	105	109	P/P	40 - 150
2299106	Glufosinate	103	111	P/P	40 - 160
2299106	Glyphosate	93.6	96.1	P/P	40 - 160
2299106	Sucralose	120	114	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P408408

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2298813	2,4-D	145	118	P/P	40 - 150
2298813	2,4,5-T	107	111	P/P	40 - 150
2298813	Acetaminophen	115	94.6	P/P	30 - 150
2298813	Acetamiprid	101	111	P/P	40 - 150
2298813	Afidopyropen	76.5	53.2	P/P	40 - 150
2298813	Bentazon	63.3	77.6	P/P	30 - 150
2298813	Benzovindiflupyr	83.9	79.5	P/P	40 - 150
2298813	Carbamazepine	91.4	103	P/P	40 - 150
2298813	Clothianidin	142	125	P/P	40 - 150
2298813	Dinotefuran	137	132	P/P	40 - 150
2298813	Diuron	90.9	86.9	P/P	40 - 150
2298813	Fenuron	106	97.6	P/P	40 - 150
2298813	Fluridone	92.6	98.3	P/P	40 - 150
2298813	Hydrocodone	88.8	107	P/P	40 - 150
2298813	Ibuprofen	89.7	71.8	P/P	40 - 150
2298813	Imazapyr	138	95.9	P/P	40 - 150
2298813	Imidacloprid	182	159	F/F	40 - 150
2298813	Linuron	115	73.2	P/P	40 - 150
2298813	Mandestrobin	102	89.1	P/P	40 - 150
2298813	MCP	90.6	96.0	P/P	40 - 150
2298813	Naproxen	102	99.8	P/P	40 - 150
2298813	Primidone	78.0	68.6	P/P	40 - 150
2298813	Pyraclostrobin	105	87.8	P/P	40 - 150
2298813	Silvex	103	90.9	P/P	40 - 150
2298813	Thiamethoxam	161	132	F/P	40 - 150
2298813	Tolfenpyrad	45.6	59.7	P/P	30 - 150
2298813	Triclopyr	115	99.5	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P408383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299106	Acesulfame K	2.86	Spike	P	0 - 30
2299106	AMPA	5.76	Spike	P	0 - 30
2299106	Endothall	3.52	Spike	P	0 - 30
2299106	Glufosinate	7.30	Spike	P	0 - 30
2299106	Glyphosate	2.60	Spike	P	0 - 30
2299106	Sucralose	4.28	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P408408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2298813	2,4-D	18.4	Spike	P	0 - 30
2298813	2,4,5-T	3.16	Spike	P	0 - 30
2298813	Acetaminophen	19.3	Spike	P	0 - 30
2298813	Acetamiprid	9.63	Spike	P	0 - 30
2298813	Afidopyropen	35.8	Spike	F	0 - 30
2298813	Bentazon	12.0	Spike	P	0 - 30
2298813	Benzovindiflupyr	5.46	Spike	P	0 - 30
2298813	Carbamazepine	11.5	Spike	P	0 - 30
2298813	Clothianidin	13.3	Spike	P	0 - 30
2298813	Dinotefuran	2.77	Spike	P	0 - 30
2298813	Diuron	3.81	Spike	P	0 - 30
2298813	Fenuron	7.90	Spike	P	0 - 30
2298813	Fluridone	6.00	Spike	P	0 - 30
2298813	Hydrocodone	18.3	Spike	P	0 - 30
2298813	Ibuprofen	22.2	Spike	P	0 - 30
2298813	Imazapyr	24.4	Spike	P	0 - 30
2298813	Imidacloprid	12.3	Spike	P	0 - 30
2298813	Linuron	44.7	Spike	F	0 - 30
2298813	Mandestrobin	13.9	Spike	P	0 - 30
2298813	MCPP	5.81	Spike	P	0 - 30
2298813	Naproxen	2.54	Spike	P	0 - 30
2298813	Primidone	12.9	Spike	P	0 - 30
2298813	Pyraclostrobin	17.9	Spike	P	0 - 30
2298813	Silvex	12.1	Spike	P	0 - 30
2298813	Thiamethoxam	18.2	Spike	P	0 - 30
2298813	Tolfenpyrad	26.9	Spike	P	0 - 30
2298813	Triclopyr	14.0	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2299145
Field Sample ID: G1SD0095

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	135	P	30 - 160
EPA 8321B	Acetaminophen-d4	125	P	30 - 160
EPA 8321B	Carbamazepine-d10	139	P	30 - 160
EPA 8321B	Diuron-d6	60.9	P	30 - 160
EPA 8321B	Endothall-d6	120	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	79.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	56.9	P	30 - 160
EPA 8321B	Primidone-d5	150	P	30 - 160
EPA 8321B	Sucralose-d6	119	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A109837
Included Lab Sample IDs: 2299145

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	95.3	98.3	P/P	60 - 160
Glufosinate	97.2	108	P/P	60 - 160
Glyphosate	103	107	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A109872
Included Lab Sample IDs: 2299145

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	108	113	P/P	60 - 160
Endothall	116	112	P/P	60 - 160
Sucralose	112	116	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A109964
Included Lab Sample IDs: 2299145

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.5	93.6	P/P	50 - 150
2,4,5-T	100	108	P/P	50 - 150
Acetaminophen	103	107	P/P	60 - 160
Acetamiprid	109	106	P/P	50 - 150
Afidopyropen	120	88.5	P/P	50 - 150
Bentazon	108	91.7	P/P	50 - 160
Benzovindiflupyr	84.1	115	P/P	50 - 150
Carbamazepine	109	103	P/P	60 - 150
Clothianidin	112	135	P/P	60 - 150
Dinotefuran	106	102	P/P	50 - 150
Diuron	104	135	P/P	60 - 160
Fenuron	115	112	P/P	60 - 150
Fluridone	105	103	P/P	60 - 160
Hydrocodone	106	98.7	P/P	60 - 150
Ibuprofen	124	79.8	P/P	50 - 160
Imazapyr	88.5	91.4	P/P	50 - 150
Imidacloprid	96.3	97.1	P/P	60 - 150
Linuron	102	146	P/P	60 - 150
Mandestrobin	113	99.9	P/P	50 - 150
MCPP	89.6	89.9	P/P	50 - 150
Naproxen	106	65.2	P/P	50 - 160
Primidone	105	66.3	P/P	60 - 150
Pyraclostrobin	119	101	P/P	60 - 150
Silvex	88.9	95.8	P/P	50 - 150
Thiamethoxam	97.5	81.8	P/P	50 - 150
Tolfenpyrad	111	132	P/P	60 - 150
Triclopyr	101	126	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	123	145	118		18.4
	2,4,5-T	132	107	111		3.16
	Acesulfame K	99.0	114	118		2.86
	Acetaminophen	75.3	115	94.6		19.3
	Acetamiprid	101	101	111		9.63
	Afidopyropen	83.8	76.5	53.2		35.8
	AMPA	99.9	96.8	103		5.76
	Bentazon	96.6	63.3	77.6		12.0
	Benzovindiflupyr	99.1	83.9	79.5		5.46
	Carbamazepine	105	91.4	103		11.5
	Clothianidin	101	142	125		13.3
	Dinotefuran	94.8	137	132		2.77
	Diuron	95.7	90.9	86.9		3.81
	Endothall	85.8	105	109		3.52
	Fenuron	101	106	97.6		7.90
	Fluridone	96.1	92.6	98.3		6.00
	Glufosinate	104	103	111		7.30
	Glyphosate	100	93.6	96.1		2.60
	Hydrocodone	89.0	88.8	107		18.3
	Ibuprofen	138	89.7	71.8		22.2
	Imazapyr	105	138	95.9		24.4
	Imidacloprid	103	182	159		12.3
	Linuron	91.4	115	73.2		44.7
	Mandestrobin	99.6	102	89.1		13.9
	MCPP	121	90.6	96.0		5.81
	Naproxen	112	102	99.8		2.54
	Primidone	106	78.0	68.6		12.9
	Pyraclostrobin	90.3	105	87.8		17.9
	Silvex	111	103	90.9		12.1
	Sucralose	111	120	114		4.28
	Thiamethoxam	96.7	161	132		18.2
	Tolfenpyrad	46.3	45.6	59.7		26.9
	Triclopyr	107	115	99.5		14.0

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2299145

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	01/12/2022	01/12/2022 13:00	Juyoung Kim	01/13/2022 00:34	Juyoung Kim	2299145
	01/12/2022	01/12/2022 13:00	Juyoung Kim	01/13/2022 02:16	Manjita Shrestha	2299145
	01/12/2022	01/13/2022 09:00	Hoor Shaik	01/16/2022 07:18	Juyoung Kim	2299145
	01/12/2022	01/13/2022 09:00	Hoor Shaik	01/18/2022 13:44	Juyoung Kim	2299145