

Chemical Analysis Report

SO-DIST-2018-08-31-01

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

Event Description: **Sarasota Streams**
Request ID: **RQ-2018-09-03-20**
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: Nicole Reistad

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: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 13-SEP-2018 14:32



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: Matheny Creek @BenevaRd

Collection Date/Time: 08/30/2018 10:45

Field ID: G3SD0092

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021227	EPA 8321B	2,4-D	0.16		ug/L	P350923	
		Sucralose**	0.18		ug/L	P350994	
		Bentazon	0.015		ug/L	P350923	MS
		MCPD	0.010		ug/L	P350923	
		Triclopyr**	0.0040	U	ug/L	P350923	
		Imidacloprid	0.46		ug/L	P350923	
		Diuron	0.0026	I	ug/L	P350923	
		Pyraclostrobin**	0.0020	U	ug/L	P350923	
		Primidone**	0.0040	U	ug/L	P350923	
		Linuron	0.0040	U	ug/L	P350923	
		Acetaminophen**	0.0080	U	ug/L	P350923	
		Fenuron	0.016	U	ug/L	P350923	
		Imazapyr**	0.35		ug/L	P350923	
		Carbamazepine**	8.0E-04	U	ug/L	P350923	
		Fluridone**	0.060		ug/L	P350923	

Sample Location: North Creek(Tidal)@US41

Collection Date/Time: 08/30/2018 11:00

Field ID: G3SD0089

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021229	EPA 8321B	2,4-D	0.33		ug/L	P350923	
		Sucralose**	0.98		ug/L	P350994	
		Bentazon	0.0011	I	ug/L	P350923	MS
		MCPD	0.0020	I	ug/L	P350923	
		Triclopyr**	0.0040	U	ug/L	P350923	
		Imidacloprid	0.93		ug/L	P350923	
		Diuron	0.0020	U	ug/L	P350923	
		Pyraclostrobin**	0.0020	U	ug/L	P350923	
		Primidone**	0.0040	U	ug/L	P350923	
		Linuron	0.0040	U	ug/L	P350923	
		Acetaminophen**	0.0080	U	ug/L	P350923	
		Fenuron	0.016	U	ug/L	P350923	
		Imazapyr**	0.67		ug/L	P350923	
		Carbamazepine**	8.0E-04	U	ug/L	P350923	
		Fluridone**	0.17		ug/L	P350923	

Sample Location: South Creek @ HonoreAve

Collection Date/Time: 08/30/2018 13:00

Field ID: G3SD0090

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021228	EPA 8321B	2,4-D	0.20		ug/L	P350923	
		Sucralose**	0.53		ug/L	P350994	
		Bentazon	0.063		ug/L	P350923	MS
		MCPP	0.038		ug/L	P350923	
		Triclopyr**	0.0040	U	ug/L	P350923	
		Imidacloprid	0.078		ug/L	P350923	
		Diuron	0.0031	I	ug/L	P350923	
		Pyraclostrobin**	0.0020	U	ug/L	P350923	
		Primidone**	0.0040	U	ug/L	P350923	
		Linuron	0.0040	U	ug/L	P350923	
		Acetaminophen**	0.0080	U	ug/L	P350923	
		Fenuron	0.016	U	ug/L	P350923	
		Imazapyr**	0.32		ug/L	P350923	
		Carbamazepine**	8.0E-04	U	ug/L	P350923	
		Fluridone**	0.11		ug/L	P350923	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P350923

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	0.017	I	ug/L
Fluridone	4.0E-04	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
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P350994

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P350923

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	67.7		P	40 - 150
Acetaminophen	113		P	30 - 150
Bentazon	59.1		P	30 - 150
Carbamazepine	70.4		P	40 - 150
Diuron	65.8		P	40 - 150
Fenuron	93.5		P	40 - 150
Fluridone	86.7		P	40 - 150
Imazapyr	91.0		P	40 - 150
Imidacloprid	105		P	40 - 160
Linuron	60.5		P	40 - 150
MCPP	73.5		P	40 - 150
Primidone	105		P	40 - 150
Pyraclostrobin	72.9		P	40 - 150
Triclopyr	49.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P350994

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	81.3		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P350923

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020945	2,4-D	99.8	107	P/P	40 - 150
2020945	Acetaminophen	127	126	P/P	30 - 150
2020945	Bentazon	20.8	18.4	F/F	30 - 150
2020945	Carbamazepine	56.4	48.5	P/P	40 - 150
2020945	Diuron	46.5	45.9	P/P	40 - 150
2020945	Fenuron	44.4	40.2	P/P	40 - 150
2020945	Fluridone	60.6	59.1	P/P	40 - 150
2020945	Imazapyr	88.1	81.6	P/P	40 - 150
2020945	Imidacloprid	96.2	84.6	P/P	40 - 160
2020945	Linuron	55.3	53.4	P/P	40 - 150
2020945	MCP	109	114	P/P	40 - 150
2020945	Primidone	62.1	61.0	P/P	40 - 150
2020945	Pyraclostrobin	79.4	73.4	P/P	40 - 150
2020945	Triclopyr	118	124	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P350994

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021271	Sucralose	68.7	78.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P350923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020945	2,4-D	6.51	Spike	P	0 - 30
2020945	Acetaminophen	0.965	Spike	P	0 - 30
2020945	Bentazon	12.5	Spike	P	0 - 30
2020945	Carbamazepine	15.0	Spike	P	0 - 30
2020945	Diuron	1.47	Spike	P	0 - 30
2020945	Fenuron	9.95	Spike	P	0 - 30
2020945	Fluridone	2.48	Spike	P	0 - 30
2020945	Imazapyr	6.95	Spike	P	0 - 30
2020945	Imidacloprid	12.8	Spike	P	0 - 30
2020945	Linuron	3.57	Spike	P	0 - 30
2020945	MCPP	3.79	Spike	P	0 - 30
2020945	Primidone	1.79	Spike	P	0 - 30
2020945	Pyraclostrobin	7.90	Spike	P	0 - 30
2020945	Triclopyr	4.43	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P350994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021271	Sucralose	12.2	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: 2021227
Field Sample ID: G3SD0092

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	101	P	30 - 160
EPA 8321B	Acetaminophen-d4	117	P	30 - 160
EPA 8321B	Carbamazepine-d10	47.0	P	30 - 160
EPA 8321B	Diuron-d6	42.9	P	30 - 160
EPA 8321B	Primidone-d5	58.7	P	30 - 160
EPA 8321B	Sucralose-d6	114	P	40 - 160

Lab Sample ID: 2021228
Field Sample ID: G3SD0090

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	101	P	30 - 160
EPA 8321B	Acetaminophen-d4	104	P	30 - 160
EPA 8321B	Carbamazepine-d10	51.5	P	30 - 160
EPA 8321B	Diuron-d6	43.6	P	30 - 160
EPA 8321B	Primidone-d5	51.8	P	30 - 160
EPA 8321B	Sucralose-d6	93.3	P	40 - 160

Lab Sample ID: 2021229
Field Sample ID: G3SD0089

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	100	P	30 - 160
EPA 8321B	Acetaminophen-d4	104	P	30 - 160
EPA 8321B	Carbamazepine-d10	43.6	P	30 - 160
EPA 8321B	Diuron-d6	38.6	P	30 - 160
EPA 8321B	Primidone-d5	57.2	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A86253

Included Lab Sample IDs: 2021227, 2021228, 2021229

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	68.2	72.4	P/P	50 - 150
2,4-D	69.0	68.2	P/P	50 - 150
Acetaminophen	111	105	P/P	60 - 160
Acetaminophen	114	111	P/P	60 - 160
Bentazon	62.4	60.3	P/P	50 - 160
Bentazon	65.6	62.4	P/P	50 - 160
Carbamazepine	71.8	70.2	P/P	60 - 160
Carbamazepine	75.6	71.8	P/P	60 - 160
Diuron	63.2	72.6	P/P	60 - 150
Diuron	78.2	63.2	P/P	60 - 150
Fenuron	94.1	97.0	P/P	60 - 150
Fenuron	97.0	90.1	P/P	60 - 150
Fluridone	72.5	72.9	P/P	60 - 160
Fluridone	72.9	72.6	P/P	60 - 160
Imazapyr	78.5	90.0	P/P	50 - 150
Imazapyr	87.9	78.5	P/P	50 - 150
Imidacloprid	75.4	79.2	P/P	60 - 150
Imidacloprid	78.8	75.4	P/P	60 - 150
Linuron	82.4	83.9	P/P	60 - 150
Linuron	83.9	74.0	P/P	60 - 150
MCPP	68.8	72.5	P/P	50 - 150
MCPP	72.5	71.3	P/P	50 - 150
Primidone	92.9	88.9	P/P	60 - 150
Primidone	94.4	92.9	P/P	60 - 150
Pyraclostrobin	93.3	97.3	P/P	60 - 150
Pyraclostrobin	97.7	93.3	P/P	60 - 150
Triclopyr	83.9	84.3	P/P	50 - 160
Triclopyr	84.3	65.7	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A86330

Included Lab Sample IDs: 2021227, 2021228, 2021229

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	86.2	84.2	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	67.7	99.8	107		6.51
	Acetaminophen	113	127	126		0.965
	Bentazon	59.1	20.8	18.4		12.5
	Carbamazepine	70.4	56.4	48.5		15.0
	Diuron	65.8	46.5	45.9		1.47
	Fenuron	93.5	44.4	40.2		9.95
	Fluridone	86.7	60.6	59.1		2.48
	Imazapyr	91.0	88.1	81.6		6.95
	Imidacloprid	105	96.2	84.6		12.8
	Linuron	60.5	55.3	53.4		3.57
	MCPP	73.5	114	109		3.79
	Primidone	105	62.1	61.0		1.79
	Pyraclostrobin	72.9	79.4	73.4		7.90
	Sucralose	81.3	68.7	78.8		12.2
	Triclopyr	49.2	118	124		4.43

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2021227, 2021228, 2021229
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2021227, 2021228, 2021229

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	08/31/2018	08/31/2018 13:30	Hoor Shaik	09/01/2018 14:53	Juyoung Kim	2021227
	08/31/2018	08/31/2018 13:30	Hoor Shaik	09/01/2018 15:28	Juyoung Kim	2021228
	08/31/2018	08/31/2018 13:30	Hoor Shaik	09/01/2018 16:37	Juyoung Kim	2021229
	08/31/2018	08/31/2018 13:30	Hoor Shaik	09/02/2018 03:35	Juyoung Kim	2021227
	08/31/2018	08/31/2018 13:30	Hoor Shaik	09/02/2018 04:44	Juyoung Kim	2021228
	08/31/2018	08/31/2018 13:30	Hoor Shaik	09/02/2018 05:19	Juyoung Kim	2021229
	08/31/2018	09/05/2018 11:20	Mohammad Ghaffari	09/06/2018 11:25	Mohammad Ghaffari	2021227
	08/31/2018	09/05/2018 11:20	Mohammad Ghaffari	09/06/2018 11:40	Mohammad Ghaffari	2021228
	08/31/2018	09/05/2018 11:20	Mohammad Ghaffari	09/06/2018 12:19	Mohammad Ghaffari	2021229