

Chemical Analysis Report

TLH-ROC-2018-09-24-02

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

Event Description: **G1 Run 5**
Request ID: **RQ-2018-09-10-64**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Michael Eckles

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: 17-OCT-2018 14:08



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: LEXINGTON CREEK @ TIMBERLANE RD

Collection Date/Time: 09/24/2018 11:00

Field ID: G1TLHR0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2027906	EPA 8321B	2,4-D	0.0020	U	ug/L	P351946	
		Bentazon	0.0012	I	ug/L	P351946	
		MCP	0.0020	U	ug/L	P351946	
		Triclopyr**	0.0040	U	ug/L	P351946	
		Imidacloprid	0.070		ug/L	P351946	
		Diuron	0.0020	U	ug/L	P351946	
		Pyraclostrobin**	0.0020	U	ug/L	P351946	
		Primidone**	0.0040	U	ug/L	P351946	
		Linuron	0.0040	U	ug/L	P351946	
		Acetaminophen**	0.52		ug/L	P351946	
		Fenuron	0.016	U	ug/L	P351946	
		Imazapyr**	0.0040	U	ug/L	P351946	
		Carbamazepine**	8.0E-04	U	ug/L	P351946	
		Fluridone**	0.0041		ug/L	P351946	
		Hydrocodone**	8.0E-04	U	ug/L	P351946	
		Naproxen**	0.021	I	ug/L	P351946	
		Ibuprofen**	0.037	I	ug/L	P351946	
		Sucralose**	0.35		ug/L	P352201	
		Acesulfame K**	0.20	I	ug/L	P352201	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P351946

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	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	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
MCPP	0.0020	U	ug/L
Naproxen	0.0080	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: P352201

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P351946

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	92.7		P	40 - 150
Acetaminophen	103		P	30 - 150
Bentazon	98.6		P	30 - 150
Carbamazepine	80.1		P	40 - 150
Diuron	71.0		P	40 - 150
Fenuron	105		P	40 - 150
Fluridone	104		P	40 - 150
Hydrocodone	113		P	40 - 150
Ibuprofen	92.5		P	40 - 150
Imazapyr	78.9		P	40 - 150
Imidacloprid	98.4		P	40 - 160
Linuron	65.0		P	40 - 150
MCPP	101		P	40 - 150
Naproxen	80.9		P	40 - 150
Primidone	98.3		P	40 - 150
Pyraclostrobin	75.9		P	40 - 150
Triclopyr	98.1		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P352201

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	76.8		P	40 - 150
Sucralose	107		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P351946

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027603	2,4-D	116	88.0	P/P	40 - 150
2027603	Acetaminophen	95.6	116	P/P	30 - 150
2027603	Bentazon	39.3	30.7	P/P	30 - 150
2027603	Carbamazepine	61.9	61.1	P/P	40 - 150
2027603	Diuron	49.5	51.7	P/P	40 - 150
2027603	Fenuron	81.6	94.9	P/P	40 - 150
2027603	Fluridone	94.0	104	P/P	40 - 150
2027603	Hydrocodone	107	126	P/P	40 - 150
2027603	Ibuprofen	77.9	64.4	P/P	40 - 150
2027603	Imazapyr	100	117	P/P	40 - 150
2027603	Imidacloprid	158	154	P/P	40 - 160
2027603	Linuron	50.4	56.0	P/P	40 - 150
2027603	MCP	121	102	P/P	40 - 150
2027603	Naproxen	75.7	70.4	P/P	40 - 150
2027603	Primidone	91.3	104	P/P	40 - 150
2027603	Pyraclostrobin	79.0	92.1	P/P	40 - 150
2027603	Triclopyr	115	98.7	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P352201

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2028139	Acesulfame K	78.4	74.1	P/P	40 - 150
2028139	Sucralose	105	103	P/P	40 - 150

Quality Assurance Report

Precision

Reference Method: EPA 8321B

Batch ID: P351946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027603	2,4-D	27.2	Spike	P	0 - 30
2027603	Acetaminophen	19.3	Spike	P	0 - 30
2027603	Bentazon	24.4	Spike	P	0 - 30
2027603	Carbamazepine	1.39	Spike	P	0 - 30
2027603	Diuron	4.30	Spike	P	0 - 30
2027603	Fenuron	15.1	Spike	P	0 - 30
2027603	Fluridone	9.90	Spike	P	0 - 30
2027603	Hydrocodone	16.4	Spike	P	0 - 30
2027603	Ibuprofen	18.9	Spike	P	0 - 30
2027603	Imazapyr	12.9	Spike	P	0 - 30
2027603	Imidacloprid	2.70	Spike	P	0 - 30
2027603	Linuron	10.7	Spike	P	0 - 30
2027603	MCP	17.1	Spike	P	0 - 30
2027603	Naproxen	7.16	Spike	P	0 - 30
2027603	Primidone	13.0	Spike	P	0 - 30
2027603	Pyraclostrobin	15.3	Spike	P	0 - 30
2027603	Triclopyr	14.8	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P352201

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2028139	Acesulfame K	5.58	Spike	P	0 - 30
2028139	Sucralose	1.19	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: 2027906

Field Sample ID: G1TLHR0088

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	96.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	90.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.5	P	30 - 160
EPA 8321B	Diuron-d6	62.9	P	30 - 160
EPA 8321B	Endothall-d6	69.1	P	40 - 160
EPA 8321B	Ibuprofen-d3	71.3	P	30 - 160
EPA 8321B	Primidone-d5	92.5	P	30 - 160
EPA 8321B	Sucralose-d6	109	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A86795
Included Lab Sample IDs: 2027906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	112	96.8	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A86798
Included Lab Sample IDs: 2027906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	84.5	81.6	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A86818
Included Lab Sample IDs: 2027906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	82.2	97.4	P/P	50 - 150
Acetaminophen	92.8	89.1	P/P	60 - 160
Bentazon	89.3	95.5	P/P	50 - 160
Carbamazepine	105	101	P/P	60 - 160
Diuron	97.9	96.3	P/P	60 - 150
Fenuron	113	106	P/P	60 - 150
Fluridone	124	129	P/P	60 - 160
Hydrocodone	91.0	109	P/P	60 - 150
Ibuprofen	81.4	86.9	P/P	50 - 160
Imazapyr	103	94.7	P/P	50 - 150
Imidacloprid	94.5	98.3	P/P	60 - 150
Linuron	97.5	94.0	P/P	60 - 150
MCPP	96.9	97.2	P/P	50 - 150
Naproxen	109	102	P/P	50 - 160
Primidone	90.4	97.5	P/P	60 - 150
Pyraclostrobin	123	113	P/P	60 - 150
Triclopyr	97.5	99.1	P/P	50 - 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 LCS	SMP	MS
EPA 8321B	2,4-D	92.7	116	88.0			27.2
	Acesulfame K	76.8	78.4	74.1			5.58
	Acetaminophen	103	95.6	116			19.3
	Bentazon	98.6	39.3	30.7			24.4
	Carbamazepine	80.1	61.9	61.1			1.39
	Diuron	71.0	49.5	51.7			4.30
	Fenuron	105	81.6	94.9			15.1
	Fluridone	104	94.0	104			9.90
	Hydrocodone	113	107	126			16.4
	Ibuprofen	92.5	77.9	64.4			18.9
	Imazapyr	78.9	100	117			12.9
	Imidacloprid	98.4	158	154			2.70
	Linuron	65.0	50.4	56.0			10.7
	MCPP	101	121	102			17.1
	Naproxen	80.9	75.7	70.4			7.16
	Primidone	98.3	91.3	104			13.0
	Pyraclostrobin	75.9	79.0	92.1			15.3
	Sucralose	107	105	103			1.19
	Triclopyr	98.1	115	98.7			14.8

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2027906

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	09/24/2018	09/26/2018 09:00	Hoor Shaik	09/29/2018 10:47	Juyoung Kim	2027906
	09/24/2018	09/26/2018 09:00	Hoor Shaik	10/01/2018 17:02	Juyoung Kim	2027906
	09/24/2018	09/28/2018 08:30	Mohammad Ghaffari	09/28/2018 15:31	Mohammad Ghaffari	2027906
	09/24/2018	09/28/2018 08:30	Mohammad Ghaffari	09/29/2018 16:59	Mohammad Ghaffari	2027906