Chemical Analysis Report

SW-DIST-2018-09-14-01

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

Event Description: **Pinellas County LR7-Mckay Creek**
Request ID: **RQ-2018-09-03-03**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
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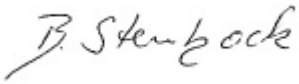
Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator Date Certified: 04-OCT-2018 12:54



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: MCKAY CREEK @ BLUFF DR. **Collection Date/Time: 09/13/2018 14:03**

Field ID: G5SW0145 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2025468	EPA 8321B	2,4-D	0.0022	I	ug/L	P351577	
		Sucralose**	0.41		ug/L	P351652	
		Bentazon	0.026		ug/L	P351577	
		MCPP	0.0020	U	ug/L	P351577	
		Triclopyr**	0.0040	U	ug/L	P351577	
		Imidacloprid	0.073		ug/L	P351577	
		Diuron	0.0020	U	ug/L	P351577	
		Pyraclostrobin**	0.0020	U	ug/L	P351577	
		Primidone**	0.0040	U	ug/L	P351577	
		Linuron	0.0040	U	ug/L	P351577	
		Acetaminophen**	0.0080	U	ug/L	P351577	
		Fenuron	0.016	U	ug/L	P351577	
		Imazapyr**	0.025		ug/L	P351577	
		Carbamazepine**	8.0E-04	U	ug/L	P351577	
		Fluridone**	0.028		ug/L	P351577	
		Hydrocodone**	8.0E-04	U	ug/L	P351577	
		Naproxen**	0.0080	U	ug/L	P351577	
		Ibuprofen**	0.020	U	ug/L	P351577	
		Acesulfame K**	0.10	U	ug/L	P351652	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P351577

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: P351652

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: P351577

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	82.4		P	40 - 150
Acetaminophen	86.7		P	30 - 150
Bentazon	55.6		P	30 - 150
Carbamazepine	81.7		P	40 - 150
Diuron	77.3		P	40 - 150
Fenuron	85.0		P	40 - 150
Fluridone	88.6		P	40 - 150
Hydrocodone	95.3		P	40 - 150
Ibuprofen	106		P	40 - 150
Imazapyr	76.8		P	40 - 150
Imidacloprid	72.4		P	40 - 160
Linuron	66.0		P	40 - 150
MCPP	93.6		P	40 - 150
Naproxen	83.5		P	40 - 150
Primidone	71.9		P	40 - 150
Pyraclostrobin	78.5		P	40 - 150
Triclopyr	86.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P351652

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	91.4		P	40 - 150
Sucralose	122		P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P351577

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025218	2,4-D	148	86.4	P/P	40 - 150
2025218	Acetaminophen	94.4	87.1	P/P	30 - 150
2025218	Bentazon	31.6	32.1	P/P	30 - 150
2025218	Carbamazepine	67.6	65.0	P/P	40 - 150
2025218	Diuron	57.7	58.4	P/P	40 - 150
2025218	Fenuron	73.2	70.0	P/P	40 - 150
2025218	Fluridone	84.8	81.7	P/P	40 - 150
2025218	Hydrocodone	93.7	97.5	P/P	40 - 150
2025218	Ibuprofen	101	86.1	P/P	40 - 150
2025218	Imazapyr	86.1	86.3	P/P	40 - 150
2025218	Imidacloprid	140	117	P/P	40 - 160
2025218	Linuron	61.2	56.8	P/P	40 - 150
2025218	MCPP	107	105	P/P	40 - 150
2025218	Naproxen	94.5	82.0	P/P	40 - 150
2025218	Primidone	86.2	75.3	P/P	40 - 150
2025218	Pyraclostrobin	83.0	84.8	P/P	40 - 150
2025218	Triclopyr	99.1	103	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P351652

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025880	Acesulfame K	54.9	56.4	P/P	40 - 150
2025880	Sucralose	122	127	P/P	40 - 150

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P351577

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025218	2,4-D	6.08	Spike	P	0 - 30
2025218	Acetaminophen	7.98	Spike	P	0 - 30
2025218	Bentazon	0.574	Spike	P	0 - 30
2025218	Carbamazepine	2.61	Spike	P	0 - 30
2025218	Diuron	1.18	Spike	P	0 - 30
2025218	Fenuron	4.52	Spike	P	0 - 30
2025218	Fluridone	3.76	Spike	P	0 - 30
2025218	Hydrocodone	3.90	Spike	P	0 - 30
2025218	Ibuprofen	15.6	Spike	P	0 - 30
2025218	Imazapyr	0.0992	Spike	P	0 - 30
2025218	Imidacloprid	13.5	Spike	P	0 - 30
2025218	Linuron	7.47	Spike	P	0 - 30
2025218	MCPP	1.88	Spike	P	0 - 30
2025218	Naproxen	14.2	Spike	P	0 - 30
2025218	Primidone	13.4	Spike	P	0 - 30
2025218	Pyraclostrobin	2.13	Spike	P	0 - 30
2025218	Triclopyr	3.54	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P351652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025880	Acesulfame K	2.84	Spike	P	0 - 30
2025880	Sucralose	1.80	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: 2025468
Field Sample ID: G5SW0145

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	101	P	30 - 160
EPA 8321B	Acetaminophen-d4	80.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	63.5	P	30 - 160
EPA 8321B	Diuron-d6	64.0	P	30 - 160
EPA 8321B	Endothall-d6	149	P	40 - 160
EPA 8321B	Endothall-d6	149	P	40 - 160
EPA 8321B	Ibuprofen-d3	72.4	P	30 - 160
EPA 8321B	Primidone-d5	72.0	P	30 - 160
EPA 8321B	Sucralose-d6	120	P	40 - 160
EPA 8321B	Sucralose-d6	120	P	40 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A86591
Included Lab Sample IDs: 2025468

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	73.7	89.6	P/P	60 - 150

Reference Method: EPA 8321B
Run ID: A86652
Included Lab Sample IDs: 2025468

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	113	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A86696
Included Lab Sample IDs: 2025468

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	74.9	71.6	P/P	60 - 160
Carbamazepine	110	106	P/P	60 - 160
Diuron	105	101	P/P	60 - 150
Fenuron	92.1	95.9	P/P	60 - 150
Fluridone	102	108	P/P	60 - 160
Hydrocodone	96.0	94.0	P/P	60 - 150
Imazapyr	83.3	85.1	P/P	50 - 150
Imidacloprid	91.3	79.9	P/P	60 - 150
Linuron	94.3	99.2	P/P	60 - 150
Primidone	80.9	72.0	P/P	60 - 150
Pyraclostrobin	101	97.8	P/P	60 - 150

Reference Method: EPA 8321B
Run ID: A86770
Included Lab Sample IDs: 2025468

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	67.7	86.4	P/P	50 - 150
Bentazon	91.0	98.8	P/P	50 - 160
Ibuprofen	81.9	96.2	P/P	50 - 160
MCPP	101	94.5	P/P	50 - 150
Naproxen	131	102	P/P	50 - 160
Triclopyr	102	101	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	82.4	148	86.4			6.08
	Acesulfame K	91.4	54.9	56.4			2.84
	Acetaminophen	86.7	94.4	87.1			7.98
	Bentazon	55.6	31.6	32.1			0.574
	Carbamazepine	81.7	67.6	65.0			2.61
	Diuron	77.3	57.7	58.4			1.18
	Fenuron	85.0	73.2	70.0			4.52
	Fluridone	88.6	84.8	81.7			3.76
	Hydrocodone	95.3	93.7	97.5			3.90
	Ibuprofen	106	101	86.1			15.6
	Imazapyr	76.8	86.1	86.3			0.0992
	Imidacloprid	72.4	140	117			13.5
	Linuron	66.0	61.2	56.8			7.47
	MCPP	93.6	107	105			1.88
	Naproxen	83.5	94.5	82.0			14.2
	Primidone	71.9	86.2	75.3			13.4
	Pyraclostrobin	78.5	83.0	84.8			2.13
	Sucralose	122	122	127			1.80
	Triclopyr	86.2	99.1	103			3.54

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2025468
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2025468

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	09/14/2018	09/14/2018 12:00	Hoor Shaik	09/23/2018 22:02	Mohammad Ghaffari	2025468
	09/14/2018	09/14/2018 12:00	Hoor Shaik	09/27/2018 04:01	Juyoung Kim	2025468
	09/14/2018	09/19/2018 15:30	Mohammad Ghaffari	09/19/2018 17:38	Mohammad Ghaffari	2025468
	09/14/2018	09/19/2018 15:30	Mohammad Ghaffari	09/21/2018 19:15	Mohammad Ghaffari	2025468