

Chemical Analysis Report

CEN-DIST-2022-09-22-02

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

Event Description: **Smart and Tiger Lakes**
Request ID: **RQ-2022-07-11-28**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Matthew Bearden

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, Environmental Consultant

Date Certified: 30-SEP-2022 09:20



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: Lake Smart @ Center

Collection Date/Time: 09/21/2022 12:05

Field ID: G3CE0055

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2358851	EPA 8321B	2,4-D	0.10		ug/L	P420123	
		Acesulfame K	0.10	U	ug/L	P419980	
		2,4,5-T	0.0040	U	ug/L	P420123	
		AMPA	0.10	U	ug/L	P419980	
		Acetaminophen	0.0080	U	ug/L	P420123	
		Acetamiprid	0.0020	U	ug/L	P420123	
		Endothall	0.25	U	ug/L	P419980	
		Glufosinate	0.10	U	ug/L	P419980	
		Glyphosate	0.10	U	ug/L	P419980	
		Afidopyropen	0.0020	U	ug/L	P420123	
		Bentazon	0.0062		ug/L	P420123	
		Sucralose	0.62		ug/L	P419980	
		Benzovindiflupyr	0.0020	U	ug/L	P420123	
		Carbamazepine	8.0E-04	U	ug/L	P420123	
		Clothianidin	0.0020	U	ug/L	P420123	
		Dinotefuran	0.0020	U	ug/L	P420123	
		Diuron	0.0020	U	ug/L	P420123	
		Fenuron	0.032	U	ug/L	P420123	
		Fluridone	0.012		ug/L	P420123	
		Imazapyr	0.0090	I	ug/L	P420123	
		Hydrocodone	0.0020	U	ug/L	P420123	
		Ibuprofen	0.020	U	ug/L	P420123	
		Imidacloprid	0.0037	I	ug/L	P420123	
		Linuron	0.0040	U	ug/L	P420123	
		Mandestrobin	0.0020	U	ug/L	P420123	
		MCPP	0.0020	U	ug/L	P420123	
		Naproxen	0.0080	U	ug/L	P420123	
		Primidone	0.0040	U	ug/L	P420123	
		Pyraclostrobin	0.0020	U	ug/L	P420123	
		Silvex	0.0040	U	ug/L	P420123	
		Thiamethoxam	0.0041	I	ug/L	P420123	
		Tolfenpyrad	0.0020	U	ug/L	P420123	
		Triclopyr	0.0040	U	ug/L	P420123	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P419980

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: P420123

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	0.032	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
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: P419980

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	99.9		P	40 - 150
AMPA	112		P	40 - 150
Endothall	97.7		P	40 - 150
Glufosinate	91.2		P	40 - 150
Glyphosate	109		P	40 - 150
Sucralose	106		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P420123

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	74.2		P	30 - 160
2,4,5-T	62.5		P	30 - 160
Acetaminophen	87.8		P	30 - 150
Acetamiprid	79.9		P	30 - 160
Afidopyropen	70.6		P	30 - 160
Bentazon	38.2		P	30 - 150
Benzovindiflupyr	78.3		P	30 - 160
Carbamazepine	76.3		P	30 - 160
Clothianidin	91.9		P	30 - 160
Dinotefuran	95.4		P	30 - 160
Diuron	70.6		P	30 - 160
Fenuron	96.9		P	30 - 160
Fluridone	91.9		P	30 - 160
Hydrocodone	89.2		P	30 - 160
Ibuprofen	58.2		P	30 - 160
Imazapyr	82.9		P	30 - 160
Imidacloprid	120		P	30 - 160
Linuron	72.7		P	30 - 160
Mandestrobin	94.5		P	30 - 160
MCPP	78.3		P	30 - 160
Naproxen	70.0		P	30 - 160
Primidone	86.3		P	30 - 160
Pyraclostrobin	77.5		P	30 - 160
Silvex	63.2		P	30 - 160
Thiamethoxam	95.4		P	30 - 160
Tolfenpyrad	45.2		P	30 - 160
Triclopyr	66.9		P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P419980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358851	Acesulfame K	86.6	88.8	P/P	40 - 150
2358851	AMPA	100	106	P/P	40 - 150
2358851	Endothall	126	130	P/P	40 - 150
2358851	Glufosinate	85.2	67.6	P/P	40 - 150
2358851	Glyphosate	85.1	90.0	P/P	40 - 150
2358851	Sucralose	104	104	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P420123

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358657	2,4-D	89.5	87.7	P/P	30 - 160
2358657	2,4,5-T	84.3	82.8	P/P	30 - 160
2358657	Acetaminophen	106	105	P/P	30 - 150
2358657	Acetamiprid	88.4	86.3	P/P	30 - 160
2358657	Afidopyropen	85.5	86.0	P/P	30 - 160
2358657	Bentazon	42.2	38.5	P/P	30 - 150
2358657	Benzovindiflupyr	84.1	84.6	P/P	30 - 160
2358657	Carbamazepine	77.5	74.1	P/P	30 - 160
2358657	Clothianidin	109	107	P/P	30 - 160
2358657	Dinotefuran	97.1	116	P/P	30 - 160
2358657	Diuron	73.5	74.4	P/P	30 - 160
2358657	Fenuron	93.2	93.3	P/P	30 - 160
2358657	Fluridone	95.5	95.1	P/P	30 - 160
2358657	Hydrocodone	102	101	P/P	30 - 160
2358657	Ibuprofen	75.8	63.9	P/P	30 - 160
2358657	Imazapyr	96.0	97.8	P/P	30 - 160
2358657	Imidacloprid	122	125	P/P	30 - 160
2358657	Linuron	76.9	80.4	P/P	30 - 160
2358657	Mandestrobin	97.4	100	P/P	30 - 160
2358657	MCPP	93.6	92.0	P/P	30 - 160
2358657	Naproxen	101	96.4	P/P	30 - 160
2358657	Primidone	91.6	96.3	P/P	30 - 160
2358657	Pyraclostrobin	86.8	87.4	P/P	30 - 160
2358657	Silvex	77.8	75.1	P/P	30 - 160
2358657	Thiamethoxam	122	125	P/P	30 - 160
2358657	Tolfenpyrad	46.8	47.6	P/P	30 - 160
2358657	Triclopyr	87.2	85.6	P/P	30 - 160

Quality Assurance Report

Precision

Reference Method: EPA 8321B

Batch ID: P419980

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358851	Acesulfame K	2.46	Spike	P	0 - 30
2358851	AMPA	5.11	Spike	P	0 - 30
2358851	Endothall	2.70	Spike	P	0 - 30
2358851	Glufosinate	23.1	Spike	P	0 - 30
2358851	Glyphosate	5.63	Spike	P	0 - 30
2358851	Sucralose	0.187	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P420123

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358657	2,4-D	1.88	Spike	P	0 - 30
2358657	2,4,5-T	1.81	Spike	P	0 - 30
2358657	Acetaminophen	0.379	Spike	P	0 - 30
2358657	Acetamiprid	2.35	Spike	P	0 - 30
2358657	Afidopyropen	0.608	Spike	P	0 - 30
2358657	Bentazon	8.16	Spike	P	0 - 30
2358657	Benzovindiflupyr	0.571	Spike	P	0 - 30
2358657	Carbamazepine	4.47	Spike	P	0 - 30
2358657	Clothianidin	1.60	Spike	P	0 - 30
2358657	Dinotefuran	17.4	Spike	P	0 - 30
2358657	Diuron	1.16	Spike	P	0 - 30
2358657	Fenuron	0.0381	Spike	P	0 - 30
2358657	Fluridone	0.511	Spike	P	0 - 30
2358657	Hydrocodone	0.646	Spike	P	0 - 30
2358657	Ibuprofen	17.0	Spike	P	0 - 30
2358657	Imazapyr	1.61	Spike	P	0 - 30
2358657	Imidacloprid	2.34	Spike	P	0 - 30
2358657	Linuron	4.39	Spike	P	0 - 30
2358657	Mandestrobin	2.67	Spike	P	0 - 30
2358657	MCPP	1.69	Spike	P	0 - 30
2358657	Naproxen	4.32	Spike	P	0 - 30
2358657	Primidone	5.05	Spike	P	0 - 30
2358657	Pyraclostrobin	0.623	Spike	P	0 - 30
2358657	Silvex	3.52	Spike	P	0 - 30
2358657	Thiamethoxam	2.16	Spike	P	0 - 30
2358657	Tolfenpyrad	1.58	Spike	P	0 - 30
2358657	Triclopyr	1.83	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2358851

Field Sample ID: G3CE0055

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	90.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	63.2	P	30 - 160
EPA 8321B	Diuron-d6	54.7	P	30 - 160
EPA 8321B	Endothall-d6	133	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	79.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	61.6	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	98.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A114978
 Included Lab Sample IDs: 2358851

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	108	109	P/P	60 - 160
Endothall	97.9	79.8	P/P	60 - 160
Glufosinate	81.8	77.0	P/P	60 - 160
Glyphosate	104	109	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A114979
 Included Lab Sample IDs: 2358851

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	95.4	109	P/P	60 - 160
Sucralose	109	106	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A114983
 Included Lab Sample IDs: 2358851

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.8	95.9	P/P	50 - 150
2,4,5-T	88.4	94.7	P/P	50 - 150
Acetaminophen	95.8	99.4	P/P	60 - 160
Acetamiprid	99.7	102	P/P	50 - 150
Afidopyropen	93.5	103	P/P	50 - 150
Bentazon	89.9	98.7	P/P	50 - 160
Benzovindiflupyr	100	106	P/P	50 - 150
Carbamazepine	99.8	105	P/P	60 - 150
Clothianidin	100	102	P/P	60 - 150
Dinotefuran	101	107	P/P	50 - 150
Diuron	103	113	P/P	60 - 160
Fenuron	103	104	P/P	60 - 150
Fluridone	106	109	P/P	60 - 160
Hydrocodone	98.6	103	P/P	60 - 150
Ibuprofen	72.8	85.0	P/P	50 - 160
Imazapyr	89.2	92.2	P/P	50 - 150
Imidacloprid	90.3	96.6	P/P	60 - 150
Linuron	111	105	P/P	60 - 150
Mandestrobin	95.6	108	P/P	50 - 150
MCPP	91.0	92.8	P/P	50 - 150
Naproxen	61.6	95.1	P/P	50 - 160
Primidone	101	104	P/P	60 - 150
Pyraclostrobin	101	107	P/P	60 - 150
Silvex	83.9	103	P/P	50 - 150
Thiamethoxam	100	105	P/P	50 - 150
Tolfenpyrad	97.6	100	P/P	60 - 150
Triclopyr	96.5	92.7	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	74.2	89.5	87.7		1.88
	2,4,5-T	62.5	84.3	82.8		1.81
	Acesulfame K	99.9	86.6	88.8		2.46
	Acetaminophen	87.8	106	105		0.379
	Acetamiprid	79.9	88.4	86.3		2.35
	Afidopyropen	70.6	85.5	86.0		0.608
	AMPA	112	100	106		5.11
	Bentazon	38.2	42.2	38.5		8.16
	Benzovindiflupyr	78.3	84.1	84.6		0.571
	Carbamazepine	76.3	77.5	74.1		4.47
	Clothianidin	91.9	109	107		1.60
	Dinotefuran	95.4	97.1	116		17.4
	Diuron	70.6	73.5	74.4		1.16
	Endothall	97.7	126	130		2.70
	Fenuron	96.9	93.2	93.3		0.0381
	Fluridone	91.9	95.5	95.1		0.511
	Glufosinate	91.2	85.2	67.6		23.1
	Glyphosate	109	85.1	90.0		5.63
	Hydrocodone	89.2	102	101		0.646
	Ibuprofen	58.2	75.8	63.9		17.0
	Imazapyr	82.9	96.0	97.8		1.61
	Imidacloprid	120	122	125		2.34
	Linuron	72.7	76.9	80.4		4.39
	Mandestrobin	94.5	97.4	100		2.67
	MCPP	78.3	93.6	92.0		1.69
	Naproxen	70.0	101	96.4		4.32
	Primidone	86.3	91.6	96.3		5.05
	Pyraclostrobin	77.5	86.8	87.4		0.623
	Silvex	63.2	77.8	75.1		3.52
	Sucralose	106	104	104		0.187
	Thiamethoxam	95.4	122	125		2.16
	Tolfenpyrad	45.2	46.8	47.6		1.58
	Triclopyr	66.9	87.2	85.6		1.83

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2358851

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	09/22/2022	09/27/2022 09:00	June Rhew	09/28/2022 06:02	Juyoung Kim	2358851
	09/22/2022	09/27/2022 09:00	Umesh Chiluwal	09/27/2022 10:59	Umesh Chiluwal	2358851
	09/22/2022	09/27/2022 09:00	Umesh Chiluwal	09/27/2022 21:43	Umesh Chiluwal	2358851