

Chemical Analysis Report

SO-DIST-2023-07-13-02

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

Event Description: **2023 SMP: Stadium Arcadia**
Request ID: **RQ-2023-07-03-48**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
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Certified by: Colin Wright, Program Administrator

Date Certified: 20-JUL-2023 14:39

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular background.

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: CHARLIE CREEK UP STRM HWY 17

Collection Date/Time: 07/12/2023 10:07

Field ID: G3SD0237

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2423765	EPA 8321B	2,4-D	0.044		ug/L	P432513	
		Acesulfame K	0.10	U	ug/L	P432522	
		2,4,5-T	0.0040	U	ug/L	P432513	
		AMPA	0.83		ug/L	P432522	
		Acetaminophen	0.0080	U	ug/L	P432513	
		Acetamiprid	0.0020	U	ug/L	P432513	
		Endothall	0.25	U	ug/L	P432522	
		Glufosinate	0.10	U	ug/L	P432522	
		Glyphosate	1.5		ug/L	P432522	
		Afidopyropen	0.0020	U	ug/L	P432513	
		Bentazon	8.0E-04	U	ug/L	P432513	
		Sucralose	0.010	U	ug/L	P432522	
		Benzovindiflupyr	0.0020	U	ug/L	P432513	
		Carbamazepine	8.0E-04	U	ug/L	P432513	
		Clothianidin	0.0066	I	ug/L	P432513	
		Dinotefuran	0.0020	U	ug/L	P432513	
		Diuron	0.016		ug/L	P432513	
		Fenuron	0.032	U	ug/L	P432513	
		Fluridone	8.0E-04	U	ug/L	P432513	
		Imazapyr	0.0046	I	ug/L	P432513	
		Hydrocodone	0.0020	U	ug/L	P432513	
		Ibuprofen	0.080	U	ug/L	P432513	
		Imidacloprid	0.082		ug/L	P432513	
		Linuron	0.0040	U	ug/L	P432513	
		Mandestrobin	0.0020	U	ug/L	P432513	
		MCPP	0.0020	U	ug/L	P432513	
		Naproxen	0.0080	U	ug/L	P432513	
		Primidone	0.0040	U	ug/L	P432513	
		Pyraclostrobin	0.0020	U	ug/L	P432513	
		Silvex	0.0040	U	ug/L	P432513	
		Thiamethoxam	0.027		ug/L	P432513	
		Tolfenpyrad	0.0020	U	ug/L	P432513	
		Triclopyr	0.0040	U	ug/L	P432513	

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P432513

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	0.080	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

Reference Method: EPA 8321B

Batch ID: P432522

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P432513

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	87.3		P	40 - 150
2,4,5-T	84.5		P	40 - 150
Acetaminophen	55.9		P	30 - 150
Acetamiprid	58.4		P	40 - 150
Afidopyropen	46.8		P	30 - 150
Bentazon	108		P	30 - 150
Benzovindiflupyr	72.7		P	40 - 150
Carbamazepine	68.4		P	40 - 150
Clothianidin	82.1		P	40 - 150
Dinotefuran	94.7		P	40 - 150
Diuron	47.3		P	40 - 150
Fenuron	83.7		P	40 - 150
Fluridone	75.4		P	40 - 150
Hydrocodone	85.9		P	40 - 150
Ibuprofen	63.7		P	40 - 150
Imazapyr	76.3		P	40 - 150
Imidacloprid	76.5		P	40 - 150
Linuron	69.0		P	40 - 150
Mandestrobin	70.9		P	40 - 150
MCPP	88.8		P	40 - 150
Naproxen	65.6		P	40 - 150
Primidone	72.7		P	40 - 150
Pyraclostrobin	76.5		P	40 - 150
Silvex	85.5		P	40 - 150
Thiamethoxam	69.7		P	40 - 150
Tolfenpyrad	53.5		P	30 - 150
Triclopyr	83.1		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P432522

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	90.2		P	40 - 150
AMPA	84.6		P	40 - 150
Endothall	87.2		P	40 - 150
Glufosinate	91.6		P	40 - 150
Glyphosate	98.1		P	40 - 150
Sucralose	89.1		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P432513

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2423624	2,4-D	100	90.6	P/P	40 - 150
2423624	2,4,5-T	98.0	87.2	P/P	40 - 150
2423624	Acetaminophen	61.8	58.4	P/P	30 - 150
2423624	Acetamiprid	86.6	88.0	P/P	40 - 150
2423624	Afidopyropen	90.4	84.2	P/P	30 - 150
2423624	Bentazon	111	112	P/P	30 - 150
2423624	Benzovindiflupyr	79.8	80.5	P/P	40 - 150
2423624	Carbamazepine	75.9	64.5	P/P	40 - 150
2423624	Clothianidin	89.3	81.7	P/P	40 - 150
2423624	Dinotefuran	89.6	81.9	P/P	40 - 150
2423624	Diuron	49.9	60.2	P/P	40 - 150
2423624	Fenuron	76.8	74.5	P/P	40 - 150
2423624	Fluridone	88.2	87.6	P/P	40 - 150
2423624	Hydrocodone	82.2	83.3	P/P	40 - 150
2423624	Ibuprofen	75.2	72.0	P/P	40 - 150
2423624	Imazapyr	99.0	87.2	P/P	40 - 150
2423624	Imidacloprid	104	96.7	P/P	40 - 150
2423624	Linuron	64.4	68.5	P/P	40 - 150
2423624	Mandestrobin	85.2	78.6	P/P	40 - 150
2423624	MCCP	108	101	P/P	40 - 150
2423624	Naproxen	65.9	68.3	P/P	40 - 150
2423624	Primidone	71.2	74.2	P/P	40 - 150
2423624	Pyraclostrobin	87.0	83.4	P/P	40 - 150
2423624	Silvex	89.3	91.1	P/P	40 - 150
2423624	Thiamethoxam	71.6	65.3	P/P	40 - 150
2423624	Tolfenpyrad	56.4	50.9	P/P	30 - 150
2423624	Triclopyr	93.3	94.3	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P432522

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2423690	Acesulfame K	113	118	P/P	40 - 150
2423690	AMPA	93.3	73.2	P/P	40 - 150
2423690	Endothall	90.6	93.4	P/P	40 - 150
2423690	Glufosinate	67.4	73.6	P/P	40 - 150
2423690	Glyphosate	73.8	74.9	P/P	40 - 150
2423690	Sucralose	96.3	99.5	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P432513

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2423624	2,4-D	9.87	Spike	P	0 - 30
2423624	2,4,5-T	11.7	Spike	P	0 - 30
2423624	Acetaminophen	5.63	Spike	P	0 - 30
2423624	Acetamiprid	1.54	Spike	P	0 - 30
2423624	Afidopyropen	7.09	Spike	P	0 - 30
2423624	Bentazon	0.403	Spike	P	0 - 30
2423624	Benzovindiflupyr	0.910	Spike	P	0 - 30
2423624	Carbamazepine	16.2	Spike	P	0 - 30
2423624	Clothianidin	8.82	Spike	P	0 - 30
2423624	Dinotefuran	8.90	Spike	P	0 - 30
2423624	Diuron	18.7	Spike	P	0 - 30
2423624	Fenuron	3.12	Spike	P	0 - 30
2423624	Fluridone	0.668	Spike	P	0 - 30
2423624	Hydrocodone	1.33	Spike	P	0 - 30
2423624	Ibuprofen	4.41	Spike	P	0 - 30
2423624	Imazapyr	12.7	Spike	P	0 - 30
2423624	Imidacloprid	6.98	Spike	P	0 - 30
2423624	Linuron	6.25	Spike	P	0 - 30
2423624	Mandestrobin	8.02	Spike	P	0 - 30
2423624	MCP	6.52	Spike	P	0 - 30
2423624	Naproxen	3.64	Spike	P	0 - 30
2423624	Primidone	4.10	Spike	P	0 - 30
2423624	Pyraclostrobin	4.19	Spike	P	0 - 30
2423624	Silvex	1.93	Spike	P	0 - 30
2423624	Thiamethoxam	9.16	Spike	P	0 - 30
2423624	Tolfenpyrad	10.3	Spike	P	0 - 30
2423624	Triclopyr	1.12	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P432522

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2423690	Acesulfame K	4.04	Spike	P	0 - 30
2423690	AMPA	24.1	Spike	P	0 - 30
2423690	Endothall	3.08	Spike	P	0 - 30
2423690	Glufosinate	8.77	Spike	P	0 - 30
2423690	Glyphosate	1.43	Spike	P	0 - 30
2423690	Sucralose	2.14	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2423765
Field Sample ID: G3SD0237

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	83.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	59.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	40.1	P	30 - 160
EPA 8321B	Diuron-d6	36.2	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	92.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	59.5	P	30 - 160
EPA 8321B	Primidone-d5	61.5	P	30 - 160
EPA 8321B	Sucralose-d6	96.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A120416
 Included Lab Sample IDs: 2423765

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	82.5	88.4	P/P	60 - 160
Endothall	90.9	84.1	P/P	60 - 160
Glufosinate	77.0	84.3	P/P	60 - 160
Glyphosate	89.7	92.6	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A120424
 Included Lab Sample IDs: 2423765

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	115	125	P/P	60 - 160
Sucralose	92.2	89.8	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A120445
 Included Lab Sample IDs: 2423765

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	101	88.5	P/P	50 - 150
2,4,5-T	96.3	98.5	P/P	50 - 150
Acetaminophen	84.7	82.2	P/P	60 - 160
Acetamiprid	114	122	P/P	50 - 150
Afidopyropen	108	104	P/P	50 - 150
Bentazon	146	129	P/P	50 - 160
Benzovindiflupyr	116	107	P/P	50 - 150
Carbamazepine	113	106	P/P	60 - 150
Clothianidin	108	105	P/P	60 - 150
Dinotefuran	122	122	P/P	50 - 150
Diuron	141	112	P/P	60 - 160
Fenuron	113	110	P/P	60 - 150
Fluridone	115	114	P/P	60 - 160
Hydrocodone	109	125	P/P	60 - 150
Ibuprofen	103	86.7	P/P	50 - 160
Imazapyr	98.2	99.4	P/P	50 - 150
Imidacloprid	98.6	98.6	P/P	60 - 150
Linuron	96.3	101	P/P	60 - 150
Mandestrobin	116	108	P/P	50 - 150
MCPP	100	101	P/P	50 - 150
Naproxen	118	134	P/P	50 - 160
Primidone	103	94.0	P/P	60 - 150
Pyraclostrobin	118	121	P/P	60 - 150
Silvex	105	104	P/P	50 - 150
Thiamethoxam	87.5	104	P/P	50 - 150
Tolfenpyrad	102	107	P/P	60 - 150
Triclopyr	99.5	92.5	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	87.3	100	90.6		9.87
	2,4,5-T	84.5	98.0	87.2		11.7
	Acesulfame K	90.2	113	118		4.04
	Acetaminophen	55.9	61.8	58.4		5.63
	Acetamiprid	58.4	86.6	88.0		1.54
	Afidopyropen	46.8	90.4	84.2		7.09
	AMPA	84.6	93.3	73.2		24.1
	Bentazon	108	111	112		0.403
	Benzovindiflupyr	72.7	79.8	80.5		0.910
	Carbamazepine	68.4	75.9	64.5		16.2
	Clothianidin	82.1	89.3	81.7		8.82
	Dinotefuran	94.7	89.6	81.9		8.90
	Diuron	47.3	49.9	60.2		18.7
	Endothall	87.2	90.6	93.4		3.08
	Fenuron	83.7	76.8	74.5		3.12
	Fluridone	75.4	88.2	87.6		0.668
	Glufosinate	91.6	67.4	73.6		8.77
	Glyphosate	98.1	73.8	74.9		1.43
	Hydrocodone	85.9	82.2	83.3		1.33
	Ibuprofen	63.7	75.2	72.0		4.41
	Imazapyr	76.3	99.0	87.2		12.7
	Imidacloprid	76.5	104	96.7		6.98
	Linuron	69.0	64.4	68.5		6.25
	Mandestrobin	70.9	85.2	78.6		8.02
	MCPP	88.8	108	101		6.52
	Naproxen	65.6	65.9	68.3		3.64
	Primidone	72.7	71.2	74.2		4.10
	Pyraclostrobin	76.5	87.0	83.4		4.19
	Silvex	85.5	89.3	91.1		1.93
	Sucralose	89.1	96.3	99.5		2.14
	Thiamethoxam	69.7	71.6	65.3		9.16
	Tolfenpyrad	53.5	56.4	50.9		10.3
	Triclopyr	83.1	93.3	94.3		1.12

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2423765

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	07/13/2023	07/15/2023 10:00	Hana Lee	07/15/2023 23:03	Tae K Lee	2423765
	07/13/2023	07/15/2023 10:00	Hana Lee	07/17/2023 00:32	Tae K Lee	2423765
	07/13/2023	07/17/2023 09:00	Hoor Shaik	07/18/2023 10:28	Juyoung Kim	2423765