Chemical Analysis Report

SO-DIST-2020-08-19-02

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

Event Description: **Hatchee Cricks PT1**
Request ID: **RQ-2020-08-17-46**
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: 28-AUG-2020 09:59

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: Popash Creek @ Pritchett Pkwy **Collection Date/Time: 08/18/2020 09:20**

Field ID: G3SD0079 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2191175	EPA 8321B	2,4-D	0.0020	U	ug/L	P386256	
		Acesulfame K**	0.13	I	ug/L	P386257	MS
		AMPA**	0.10	U	ug/L	P386257	
		Sucralose**	0.87		ug/L	P386257	
		Acetaminophen**	0.0080	U	ug/L	P386256	
		Acetamiprid**	0.0020	U	ug/L	P386256	
		Endothall**	0.25	U	ug/L	P386257	
		Glufosinate**	0.10	U	ug/L	P386257	
		Glyphosate**	0.10	U	ug/L	P386257	
		Afidopyropen**	0.0020	U	ug/L	P386256	
		Bentazon	8.0E-04	U	ug/L	P386256	
		Benzovindiflupyr**	0.0020	U	ug/L	P386256	
		Carbamazepine**	0.0012	I	ug/L	P386256	
		Clothianidin**	0.0020	U	ug/L	P386256	
		Dinotefuran**	0.0020	U	ug/L	P386256	
		Diuron	0.0020	I	ug/L	P386256	
		Fenuron	0.016	U	ug/L	P386256	
		Fluridone**	0.0031	I	ug/L	P386256	
		Imazapyr**	0.061		ug/L	P386256	
		Hydrocodone**	0.0020	U	ug/L	P386256	
		Ibuprofen**	0.020	U	ug/L	P386256	
		Imidacloprid	0.0020	U	ug/L	P386256	
		Linuron	0.0040	U	ug/L	P386256	
		Mandestrobin**	0.0020	U	ug/L	P386256	
		MCPP	0.0020	U	ug/L	P386256	
		Naproxen**	0.0080	U	ug/L	P386256	
		Primidone**	0.0066	I	ug/L	P386256	
		Pyraclostrobin**	0.0020	U	ug/L	P386256	
		Thiamethoxam**	0.0020	U	ug/L	P386256	
		Tolfenpyrad**	0.0020	U	ug/L	P386256	
		Triclopyr**	0.0040	U	ug/L	P386256	

Sample Location: Yellow Fever Creek @ Littleton Rd **Collection Date/Time: 08/18/2020 10:10**

Field ID: G3SD0149 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2191176	EPA 8321B	2,4-D	0.0020	U	ug/L	P386310	
		Acesulfame K**	0.10	U	ug/L	P386257	MS
		AMPA**	0.10	U	ug/L	P386257	
		Sucralose**	0.90		ug/L	P386257	
		Acetaminophen**	0.0080	U	ug/L	P386310	
		Acetamiprid**	0.0020	U	ug/L	P386310	
		Endothall**	0.25	U	ug/L	P386257	
		Glufosinate**	0.10	U	ug/L	P386257	
		Glyphosate**	0.10	U	ug/L	P386257	
		Afidopyropen**	0.0020	U	ug/L	P386310	
		Bentazon	0.0068		ug/L	P386310	
		Benzovindiflupyr**	0.0020	U	ug/L	P386310	
		Carbamazepine**	8.0E-04	U	ug/L	P386310	
		Clothianidin**	0.0020	U	ug/L	P386310	
		Dinotefuran**	0.0020	U	ug/L	P386310	
		Diuron	0.0020	U	ug/L	P386310	
		Fenuron	0.053	I J	ug/L	P386310	MS
		Fluridone**	0.17		ug/L	P386310	
		Imazapyr**	0.031		ug/L	P386310	
		Hydrocodone**	0.0020	U	ug/L	P386310	
		Ibuprofen**	0.020	U	ug/L	P386310	
		Imidacloprid	0.0058	I	ug/L	P386310	
		Linuron	0.0040	U	ug/L	P386310	
		Mandestrobin**	0.0020	U	ug/L	P386310	
		MCPP	0.0020	U	ug/L	P386310	
		Naproxen**	0.0080	U	ug/L	P386310	
		Primidone**	0.0042	I	ug/L	P386310	
		Pyraclostrobin**	0.0020	U	ug/L	P386310	
		Thiamethoxam**	0.0020	U	ug/L	P386310	
		Tolfenpyrad**	0.0020	U	ug/L	P386310	
		Triclopyr**	0.0040	U	ug/L	P386310	

Ref. Method and Comment:
EPA 8321B: MS accuracy for fluridone could not be assessed due to high concentration of parameter in the spiked sample. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Powell Creek **Collection Date/Time: 08/18/2020 09:55**

Field ID: G3SD0165 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2191177	EPA 8321B	2,4-D	0.0020	U	ug/L	P386310	
		Acesulfame K**	0.10	U	ug/L	P386257	MS
		AMPA**	2.7		ug/L	P386257	
		Sucralose**	0.88		ug/L	P386257	
		Acetaminophen**	0.0080	U	ug/L	P386310	
		Acetamiprid**	0.0020	U	ug/L	P386310	
		Endothall**	0.25	U	ug/L	P386257	
		Glufosinate**	0.10	U	ug/L	P386257	
		Glyphosate**	2.9		ug/L	P386257	
		Afidopyropen**	0.0020	U	ug/L	P386310	
		Bentazon	0.0053		ug/L	P386310	
		Benzovindiflupyr**	0.0020	U	ug/L	P386310	
		Carbamazepine**	0.0093		ug/L	P386310	
		Clothianidin**	0.0020	U	ug/L	P386310	
		Dinotefuran**	0.0020	U	ug/L	P386310	
		Diuron	0.0020	U	ug/L	P386310	
		Fenuron	0.016	U	ug/L	P386310	MS
		Fluridone**	0.0032		ug/L	P386310	
		Imazapyr**	0.18		ug/L	P386310	
		Hydrocodone**	0.0020	U	ug/L	P386310	
		Ibuprofen**	0.020	U	ug/L	P386310	
		Imidacloprid	0.0020	I	ug/L	P386310	
		Linuron	0.0040	U	ug/L	P386310	
		Mandestrobin**	0.0020	U	ug/L	P386310	
		MCPP	0.0020	U	ug/L	P386310	
		Naproxen**	0.0080	U	ug/L	P386310	
		Primidone**	0.0040	U	ug/L	P386310	
		Pyraclostrobin**	0.0020	U	ug/L	P386310	
		Thiamethoxam**	0.0020	U	ug/L	P386310	
		Tolfenpyrad**	0.0020	U	ug/L	P386310	
		Triclopyr**	0.0040	U	ug/L	P386310	

Ref. Method and Comment:
EPA 8321B: MS accuracy for fluridone could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Daughtrey Creek **Collection Date/Time: 08/18/2020 09:45**

Field ID: G3SD0164 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2191178	EPA 8321B	2,4-D	0.0073	I	ug/L	P386310	
		Acesulfame K**	0.10	U	ug/L	P386257	MS
		AMPA**	0.18	I	ug/L	P386257	
		Sucralose**	0.026	I	ug/L	P386257	
		Acetaminophen**	0.0080	U	ug/L	P386310	
		Acetamiprid**	0.0020	U	ug/L	P386310	
		Endothall**	0.25	U	ug/L	P386257	
		Glufosinate**	0.10	U	ug/L	P386257	
		Glyphosate**	0.10	U	ug/L	P386257	
		Afidopyropen**	0.0020	U	ug/L	P386310	
		Bentazon	8.0E-04	U	ug/L	P386310	
		Benzovindiflupyr**	0.0020	U	ug/L	P386310	
		Carbamazepine**	8.0E-04	U	ug/L	P386310	
		Clothianidin**	0.0035	I	ug/L	P386310	
		Dinotefuran**	0.0020	U	ug/L	P386310	
		Diuron	0.0020	U	ug/L	P386310	
		Fenuron	0.016	U	ug/L	P386310	MS
		Fluridone**	8.0E-04	U	ug/L	P386310	
		Imazapyr**	0.042		ug/L	P386310	
		Hydrocodone**	0.0020	U	ug/L	P386310	
		Ibuprofen**	0.020	U	ug/L	P386310	
		Imidacloprid	0.0020	U	ug/L	P386310	
		Linuron	0.0040	U	ug/L	P386310	
		Mandestrobin**	0.0020	U	ug/L	P386310	
		MCPP	0.0020	U	ug/L	P386310	
		Naproxen**	0.0080	U	ug/L	P386310	
		Primidone**	0.0040	U	ug/L	P386310	
		Pyraclostrobin**	0.0020	U	ug/L	P386310	
		Thiamethoxam**	0.0020	U	ug/L	P386310	
		Tolfenpyrad**	0.0020	U	ug/L	P386310	
		Triclopyr**	0.0040	U	ug/L	P386310	

Ref. Method and Comment:
EPA 8321B: MS accuracy for fluridone could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P386256

Component	Result	Code	Units
2,4-D	0.0020	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	0.016	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
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P386257

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: P386310

Component	Result	Code	Units
2,4-D	0.0020	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	0.016	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P386310

Component	Result	Code	Units
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
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: P386256

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	115		P	30 - 160
Acetaminophen	82.2		P	30 - 160
Acetamiprid	71.7		P	30 - 160
Afidopyropen	58.2		P	30 - 160
Bentazon	61.8		P	30 - 160
Benzovindiflupyr	67.6		P	30 - 160
Carbamazepine	64.2		P	30 - 160
Clothianidin	88.3		P	30 - 160
Dinotefuran	94.8		P	30 - 160
Diuron	54.8		P	30 - 160
Fenuron	89.4		P	30 - 160
Fluridone	73.6		P	30 - 160
Hydrocodone	83.2		P	30 - 160
Ibuprofen	75.1		P	30 - 160
Imazapyr	70.3		P	30 - 160
Imidacloprid	101		P	30 - 160
Linuron	62.7		P	30 - 160
Mandestrobin	78.2		P	30 - 160
MCPP	123		P	30 - 160
Naproxen	62.8		P	30 - 160
Primidone	83.1		P	30 - 160
Pyraclostrobin	66.4		P	30 - 160
Thiamethoxam	86.9		P	30 - 160
Tolfenpyrad	43.2		P	30 - 160
Triclopyr	107		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P386257

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	54.6		P	40 - 150
AMPA	86.6		P	40 - 150
Endothall	103		P	40 - 150
Glufosinate	91.9		P	40 - 150
Glyphosate	73.9		P	40 - 140
Sucralose	88.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P386310

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	113		P	30 - 160
Acetaminophen	86.9		P	30 - 160
Acetamiprid	73.9		P	30 - 160
Afidopyropen	49.7		P	30 - 160
Bentazon	59.9		P	30 - 160
Benzovindiflupyr	75.2		P	30 - 160
Carbamazepine	64.7		P	30 - 160
Clothianidin	87.1		P	30 - 160
Dinotefuran	92.0		P	30 - 160
Diuron	54.7		P	30 - 160
Fenuron	87.7		P	30 - 160

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P386310

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluridone	92.4		P	30 - 160
Hydrocodone	84.2		P	30 - 160
Ibuprofen	82.4		P	30 - 160
Imazapyr	83.4		P	30 - 160
Imidacloprid	92.0		P	30 - 160
Linuron	65.2		P	30 - 160
Mandestrobin	81.1		P	30 - 160
MCPP	116		P	30 - 160
Naproxen	62.3		P	30 - 160
Primidone	83.2		P	30 - 160
Pyraclostrobin	67.9		P	30 - 160
Thiamethoxam	76.8		P	30 - 160
Tolfenpyrad	45.0		P	30 - 160
Triclopyr	89.2		P	30 - 160

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P386256

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190698	2,4-D	112	108	P/P	30 - 160
2190698	Acetaminophen	96.7	88.8	P/P	30 - 160
2190698	Acetamiprid	80.6	74.1	P/P	30 - 160
2190698	Afidopyropen	51.6	51.3	P/P	30 - 160
2190698	Bentazon	54.6	48.0	P/P	30 - 160
2190698	Benzovindiflupyr	70.2	72.0	P/P	30 - 160
2190698	Carbamazepine	67.4	64.7	P/P	30 - 160
2190698	Clothianidin	96.7	87.6	P/P	30 - 160
2190698	Dinotefuran	106	98.9	P/P	30 - 160
2190698	Diuron	59.5	53.9	P/P	30 - 160
2190698	Fenuron	88.6	83.2	P/P	30 - 160
2190698	Fluridone	85.5	83.5	P/P	30 - 160
2190698	Hydrocodone	87.0	85.0	P/P	30 - 160
2190698	Ibuprofen	79.6	72.4	P/P	30 - 160
2190698	Imazapyr	102	71.9	P/P	30 - 160
2190698	Imidacloprid	131	98.3	P/P	30 - 160
2190698	Linuron	67.6	57.5	P/P	30 - 160
2190698	Mandestrobin	82.4	75.9	P/P	30 - 160
2190698	MCPP	121	112	P/P	30 - 160
2190698	Naproxen	74.2	88.0	P/P	30 - 160
2190698	Primidone	93.1	83.3	P/P	30 - 160
2190698	Pyraclostrobin	75.3	68.5	P/P	30 - 160
2190698	Thiamethoxam	105	96.9	P/P	30 - 160
2190698	Tolfenpyrad	47.0	42.0	P/P	30 - 160
2190698	Triclopyr	110	96.8	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P386257

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191061	Acesulfame K	34.9	36.1	F/F	40 - 150
2191061	AMPA	88.7	93.7	P/P	40 - 150
2191061	Endothall	100	110	P/P	40 - 150
2191061	Glufosinate	84.4	87.0	P/P	40 - 150
2191061	Glyphosate	66.2	72.1	P/P	40 - 140
2191061	Sucralose	71.6	61.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P386310

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191176	2,4-D	103	103	P/P	30 - 160
2191176	Acetaminophen	90.9	88.1	P/P	30 - 160
2191176	Acetamiprid	69.8	64.9	P/P	30 - 160
2191176	Afidopyropen	55.1	53.7	P/P	30 - 160
2191176	Bentazon	63.2	62.1	P/P	30 - 160
2191176	Benzovindiflupyr	73.0	69.7	P/P	30 - 160
2191176	Carbamazepine	57.7	57.0	P/P	30 - 160
2191176	Clothianidin	82.9	79.5	P/P	30 - 160
2191176	Dinotefuran	94.0	97.8	P/P	30 - 160
2191176	Diuron	49.1	48.9	P/P	30 - 160
2191176	Fenuron	6.98	6.19	F/F	30 - 160

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P386310

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191176	Hydrocodone	71.8	72.6	P/P	30 - 160
2191176	Ibuprofen	80.1	66.4	P/P	30 - 160
2191176	Imazapyr	64.9	91.5	P/P	30 - 160
2191176	Imidacloprid	144	127	P/P	30 - 160
2191176	Linuron	58.7	61.4	P/P	30 - 160
2191176	Mandestrobin	77.6	77.7	P/P	30 - 160
2191176	MCPP	107	107	P/P	30 - 160
2191176	Naproxen	57.0	67.7	P/P	30 - 160
2191176	Primidone	91.0	86.9	P/P	30 - 160
2191176	Pyraclostrobin	75.2	68.9	P/P	30 - 160
2191176	Thiamethoxam	90.7	87.6	P/P	30 - 160
2191176	Tolfenpyrad	46.0	41.6	P/P	30 - 160
2191176	Triclopyr	102	95.8	P/P	30 - 160

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P386256

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190698	2,4-D	3.11	Spike	P	0 - 30
2190698	Acetaminophen	8.48	Spike	P	0 - 30
2190698	Acetamiprid	8.42	Spike	P	0 - 30
2190698	Afidopyropen	0.549	Spike	P	0 - 30
2190698	Bentazon	13.0	Spike	P	0 - 30
2190698	Benzovindiflupyr	2.64	Spike	P	0 - 30
2190698	Carbamazepine	4.07	Spike	P	0 - 30
2190698	Clothianidin	9.84	Spike	P	0 - 30
2190698	Dinotefuran	6.54	Spike	P	0 - 30
2190698	Diuron	9.84	Spike	P	0 - 30
2190698	Fenuron	6.22	Spike	P	0 - 30
2190698	Fluridone	2.43	Spike	P	0 - 30
2190698	Hydrocodone	2.43	Spike	P	0 - 30
2190698	Ibuprofen	9.60	Spike	P	0 - 30
2190698	Imazapyr	29.1	Spike	P	0 - 30
2190698	Imidacloprid	28.4	Spike	P	0 - 30
2190698	Linuron	16.1	Spike	P	0 - 30
2190698	Mandestrobin	8.22	Spike	P	0 - 30
2190698	MCPP	7.98	Spike	P	0 - 30
2190698	Naproxen	16.9	Spike	P	0 - 30
2190698	Primidone	11.2	Spike	P	0 - 30
2190698	Pyraclostrobin	9.47	Spike	P	0 - 30
2190698	Thiamethoxam	7.73	Spike	P	0 - 30
2190698	Tolfenpyrad	11.3	Spike	P	0 - 30
2190698	Triclopyr	12.7	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P386257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191061	Acesulfame K	3.46	Spike	P	0 - 30
2191061	AMPA	3.96	Spike	P	0 - 30
2191061	Endothall	9.46	Spike	P	0 - 30
2191061	Glufosinate	3.08	Spike	P	0 - 30
2191061	Glyphosate	7.21	Spike	P	0 - 30
2191061	Sucralose	12.3	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P386310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191176	2,4-D	0.0328	Spike	P	0 - 30
2191176	Acetaminophen	3.07	Spike	P	0 - 30
2191176	Acetamiprid	7.17	Spike	P	0 - 30
2191176	Afidopyropen	2.63	Spike	P	0 - 30
2191176	Bentazon	0.743	Spike	P	0 - 30
2191176	Benzovindiflupyr	4.64	Spike	P	0 - 30
2191176	Carbamazepine	1.24	Spike	P	0 - 30
2191176	Clothianidin	4.10	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P386310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191176	Dinotefuran	4.02	Spike	P	0 - 30
2191176	Diuron	0.575	Spike	P	0 - 30
2191176	Fenuron	1.09	Spike	P	0 - 30
2191176	Fluridone	4.59	Spike	P	0 - 30
2191176	Hydrocodone	1.15	Spike	P	0 - 30
2191176	Ibuprofen	18.7	Spike	P	0 - 30
2191176	Imazapyr	22.7	Spike	P	0 - 30
2191176	Imidacloprid	12.5	Spike	P	0 - 30
2191176	Linuron	4.41	Spike	P	0 - 30
2191176	Mandestrobin	0.0768	Spike	P	0 - 30
2191176	MCPP	0.267	Spike	P	0 - 30
2191176	Naproxen	17.3	Spike	P	0 - 30
2191176	Primidone	4.28	Spike	P	0 - 30
2191176	Pyraclostrobin	8.72	Spike	P	0 - 30
2191176	Thiamethoxam	3.48	Spike	P	0 - 30
2191176	Tolfenpyrad	9.88	Spike	P	0 - 30
2191176	Triclopyr	6.56	Spike	P	0 - 30

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2191175
Field Sample ID: G3SD0079

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	88.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	73.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	49.5	P	30 - 160
EPA 8321B	Diuron-d6	45.0	P	30 - 160
EPA 8321B	Endothall-d6	110	P	30 - 160
EPA 8321B	Endothall-d6	110	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	50.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	50.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	67.2	P	30 - 160
EPA 8321B	Primidone-d5	71.5	P	30 - 160
EPA 8321B	Sucralose-d6	83.9	P	30 - 160
EPA 8321B	Sucralose-d6	83.9	P	30 - 160

Lab Sample ID: 2191176
Field Sample ID: G3SD0149

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	61.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	56.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	43.0	P	30 - 160
EPA 8321B	Diuron-d6	34.4	P	30 - 160
EPA 8321B	Endothall-d6	112	P	30 - 160
EPA 8321B	Endothall-d6	112	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	53.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	53.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	55.5	P	30 - 160
EPA 8321B	Primidone-d5	69.1	P	30 - 160
EPA 8321B	Sucralose-d6	91.6	P	30 - 160
EPA 8321B	Sucralose-d6	91.6	P	30 - 160

Lab Sample ID: 2191177
Field Sample ID: G3SD0165

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	84.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	67.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	48.0	P	30 - 160
EPA 8321B	Diuron-d6	44.5	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	51.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	51.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	67.2	P	30 - 160
EPA 8321B	Primidone-d5	71.2	P	30 - 160
EPA 8321B	Sucralose-d6	93.6	P	30 - 160
EPA 8321B	Sucralose-d6	93.6	P	30 - 160

Lab Sample ID: 2191178
Field Sample ID: G3SD0164

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	95.4	P	30 - 160

Quality Assurance Report
Surrogates

Lab Sample ID: 2191178
Field Sample ID: G3SD0164

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	67.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	48.4	P	30 - 160
EPA 8321B	Diuron-d6	42.8	P	30 - 160
EPA 8321B	Endothall-d6	101	P	30 - 160
EPA 8321B	Endothall-d6	101	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	51.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	51.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	64.8	P	30 - 160
EPA 8321B	Primidone-d5	67.0	P	30 - 160
EPA 8321B	Sucralose-d6	34.9	P	30 - 160
EPA 8321B	Sucralose-d6	34.9	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A100557
Included Lab Sample IDs: 2191175, 2191176, 2191177, 2191178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	80.1	88.3	P/P	60 - 160
AMPA	88.3	87.2	P/P	60 - 160
Glufosinate	89.8	89.3	P/P	60 - 160
Glufosinate	92.4	89.8	P/P	60 - 160
Glyphosate	81.4	83.7	P/P	60 - 160
Glyphosate	83.7	82.4	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A100586
Included Lab Sample IDs: 2191175, 2191176, 2191177, 2191178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	60.8	65.3	P/P	60 - 160
Acesulfame K	65.3	153	P/P	60 - 160
Endothall	107	110	P/P	60 - 160
Endothall	110	107	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A100611
Included Lab Sample IDs: 2191175, 2191176, 2191177, 2191178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	106	104	P/P	50 - 150
2,4-D	98.2	106	P/P	50 - 150
Acetaminophen	108	110	P/P	60 - 160
Acetaminophen	110	109	P/P	60 - 160
Acetamiprid	114	116	P/P	50 - 150
Acetamiprid	118	114	P/P	50 - 150
Afidopyropen	103	103	P/P	50 - 150
Afidopyropen	97.2	103	P/P	50 - 150
Bentazon	106	115	P/P	50 - 160
Bentazon	115	109	P/P	50 - 160
Benzovindiflupyr	101	109	P/P	50 - 150
Benzovindiflupyr	109	111	P/P	50 - 150
Carbamazepine	106	106	P/P	60 - 150
Carbamazepine	108	106	P/P	60 - 150
Clothianidin	103	115	P/P	60 - 150
Clothianidin	115	126	P/P	60 - 150
Dinotefuran	108	106	P/P	50 - 150
Dinotefuran	98.5	108	P/P	50 - 150
Diuron	108	117	P/P	60 - 160
Diuron	117	110	P/P	60 - 160
Fenuron	110	117	P/P	60 - 150
Fenuron	117	117	P/P	60 - 150
Fluridone	109	98.1	P/P	60 - 160
Fluridone	111	109	P/P	60 - 160
Hydrocodone	103	108	P/P	60 - 150
Hydrocodone	108	116	P/P	60 - 150
Ibuprofen	104	110	P/P	50 - 160
Ibuprofen	110	110	P/P	50 - 160
Imazapyr	79.1	85.4	P/P	50 - 150

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A100611
Included Lab Sample IDs: 2191175, 2191176, 2191177, 2191178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazapyr	97.3	79.1	P/P	50 - 150
Imidacloprid	106	106	P/P	60 - 150
Imidacloprid	91.5	106	P/P	60 - 150
Linuron	104	108	P/P	60 - 150
Linuron	108	105	P/P	60 - 150
Mandestrobin	123	123	P/P	50 - 150
Mandestrobin	123	116	P/P	50 - 150
MCPP	101	95.3	P/P	50 - 150
MCPP	96.7	101	P/P	50 - 150
Naproxen	105	112	P/P	50 - 160
Naproxen	112	118	P/P	50 - 160
Primidone	101	109	P/P	60 - 150
Primidone	109	116	P/P	60 - 150
Pyraclostrobin	106	97.8	P/P	60 - 150
Pyraclostrobin	97.8	107	P/P	60 - 150
Thiamethoxam	109	105	P/P	50 - 150
Thiamethoxam	91.9	109	P/P	50 - 150
Tolfenpyrad	93.6	97.9	P/P	60 - 150
Tolfenpyrad	99.2	93.6	P/P	60 - 150
Triclopyr	104	88.3	P/P	50 - 150
Triclopyr	88.8	104	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A100617
Included Lab Sample IDs: 2191175, 2191176, 2191177, 2191178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	92.4	86.7	P/P	60 - 160
Sucralose	93.3	92.4	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		
					LCS	SMP	MS
EPA 8321B	2,4-D	115	112	108			3.11
	2,4-D	113	103	103			0.0328
	Acesulfame K	54.6	34.9	36.1			3.46
	Acetaminophen	82.2	96.7	88.8			8.48
	Acetaminophen	86.9	90.9	88.1			3.07
	Acetamiprid	71.7	80.6	74.1			8.42
	Acetamiprid	73.9	69.8	64.9			7.17
	Afidopyropen	58.2	51.6	51.3			0.549
	Afidopyropen	49.7	55.1	53.7			2.63
	AMPA	86.6	88.7	93.7			3.96
	Bentazon	61.8	54.6	48.0			13.0
	Bentazon	59.9	63.2	62.1			0.743
	Benzovindiflupyr	67.6	70.2	72.0			2.64
	Benzovindiflupyr	75.2	73.0	69.7			4.64
	Carbamazepine	64.2	67.4	64.7			4.07
	Carbamazepine	64.7	57.7	57.0			1.24
	Clothianidin	88.3	96.7	87.6			9.84
	Clothianidin	87.1	82.9	79.5			4.10
	Dinotefuran	94.8	106	98.9			6.54
	Dinotefuran	92.0	94.0	97.8			4.02
	Diuron	54.8	59.5	53.9			9.84
	Diuron	54.7	49.1	48.9			0.575
	Endothall	103	100	110			9.46
	Fenuron	89.4	88.6	83.2			6.22
	Fenuron	87.7	6.98	6.19			1.09
	Fluridone	73.6	85.5	83.5			2.43
	Fluridone	92.4					4.59
	Glufosinate	91.9	84.4	87.0			3.08
	Glyphosate	73.9	66.2	72.1			7.21
	Hydrocodone	83.2	87.0	85.0			2.43
	Hydrocodone	84.2	71.8	72.6			1.15
	Ibuprofen	75.1	79.6	72.4			9.60
	Ibuprofen	82.4	80.1	66.4			18.7
	Imazapyr	70.3	102	71.9			29.1
	Imazapyr	83.4	64.9	91.5			22.7
	Imidacloprid	101	131	98.3			28.4
	Imidacloprid	92.0	144	127			12.5
	Linuron	62.7	67.6	57.5			16.1
	Linuron	65.2	58.7	61.4			4.41
	Mandestrobin	78.2	82.4	75.9			8.22
	Mandestrobin	81.1	77.6	77.7			0.0768
	MCPP	123	121	112			7.98
	MCPP	116	107	107			0.267
	Naproxen	62.8	74.2	88.0			16.9
	Naproxen	62.3	57.0	67.7			17.3
	Primidone	83.1	93.1	83.3			11.2
	Primidone	83.2	91.0	86.9			4.28
	Pyraclostrobin	66.4	75.3	68.5			9.47
	Pyraclostrobin	67.9	75.2	68.9			8.72
	Sucralose	88.8	71.6	61.6			12.3
	Thiamethoxam	86.9	105	96.9			7.73
	Thiamethoxam	76.8	90.7	87.6			3.48
	Tolfenpyrad	43.2	47.0	42.0			11.3
	Tolfenpyrad	45.0	46.0	41.6			9.88

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 8321B	Triclopyr	107	110	96.8			12.7
	Triclopyr	89.2	102	95.8			6.56

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2191175, 2191176, 2191177, 2191178
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2191175, 2191176, 2191177, 2191178

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	08/19/2020	08/19/2020 16:00	Rebecca Ware	08/19/2020 17:58	Rebecca Ware	2191175
	08/19/2020	08/19/2020 16:00	Rebecca Ware	08/19/2020 18:09	Rebecca Ware	2191176
	08/19/2020	08/19/2020 16:00	Rebecca Ware	08/19/2020 18:19	Rebecca Ware	2191177
	08/19/2020	08/19/2020 16:00	Rebecca Ware	08/19/2020 18:41	Rebecca Ware	2191178
	08/19/2020	08/19/2020 16:00	Rebecca Ware	08/20/2020 19:13	Rebecca Ware	2191175
	08/19/2020	08/19/2020 16:00	Rebecca Ware	08/20/2020 19:27	Rebecca Ware	2191176
	08/19/2020	08/19/2020 16:00	Rebecca Ware	08/20/2020 19:41	Rebecca Ware	2191177
	08/19/2020	08/19/2020 16:00	Rebecca Ware	08/20/2020 20:22	Rebecca Ware	2191178
	08/19/2020	08/19/2020 16:00	Rebecca Ware	08/22/2020 00:30	Rebecca Ware	2191175
	08/19/2020	08/19/2020 16:00	Rebecca Ware	08/22/2020 00:42	Rebecca Ware	2191176
	08/19/2020	08/19/2020 16:00	Rebecca Ware	08/22/2020 00:53	Rebecca Ware	2191177
	08/19/2020	08/19/2020 16:00	Rebecca Ware	08/22/2020 01:17	Rebecca Ware	2191178
	08/19/2020	08/20/2020 09:00	Hoor Shaik	08/21/2020 13:35	Juyoung Kim	2191175
	08/19/2020	08/21/2020 13:00	Hoor Shaik	08/21/2020 18:12	Juyoung Kim	2191176
	08/19/2020	08/21/2020 13:00	Hoor Shaik	08/21/2020 18:47	Juyoung Kim	2191177
	08/19/2020	08/21/2020 13:00	Hoor Shaik	08/21/2020 19:21	Juyoung Kim	2191178