Chemical Analysis Report

NW-DIST-2017-04-07-01

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

Event Description: **BacT Tracers Markers only**
Request ID: **RQ-2017-04-03-76**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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160 W Government St
Suite 208A
Pensacola, FL 32502-5794
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 21-APR-2017 11:54

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: Rest Area Run **Collection Date/Time: 04/06/2017 11:45**

Field ID: G5NW0068 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1886707	EPA 8321B	Sucralose**	0.41		ug/L	P322744	
	USGS O-2060-01	2,4-D	0.0040	U	ug/L	P322959	
		Diuron	0.0040	U	ug/L	P322959	MS
		Fenuron	0.0080	U	ug/L	P322959	
		Imidacloprid	0.0094	I	ug/L	P322959	
		Bentazon	0.059		ug/L	P322959	
		Linuron	0.0040	U	ug/L	P322959	MS
		Acetaminophen**	0.010	U	ug/L	P322959	
		MCPP	0.0040	U	ug/L	P322959	
		Carbamazepine**	0.0034		ug/L	P322959	MS
		Triclopyr**	0.010	U	ug/L	P322959	
		Primidone**	0.0080	U	ug/L	P322959	MS
		Fluridone**	4.0E-04	U	ug/L	P322959	

Ref. Method and Comment:
USGS O-2060-01: MS accuracy for bentazon and 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Elevenmile Creek **Collection Date/Time: 04/06/2017 13:10**

Field ID: G5NW0003 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1886708	EPA 8321B	Sucralose**	0.16		ug/L	P322744	
	USGS O-2060-01	2,4-D	0.0069	I	ug/L	P322959	
		Diuron	0.0040	U	ug/L	P322959	MS
		Fenuron	0.0080	U	ug/L	P322959	
		Imidacloprid	0.010	I	ug/L	P322959	
		Bentazon	0.059		ug/L	P322959	
		Linuron	0.0040	U	ug/L	P322959	MS
		Acetaminophen**	0.010	U	ug/L	P322959	
		MCPP	0.0040	U	ug/L	P322959	
		Carbamazepine**	4.7E-04	I	ug/L	P322959	MS
		Triclopyr**	0.010	U	ug/L	P322959	
		Primidone**	0.0080	U	ug/L	P322959	MS
		Fluridone**	4.0E-04	U	ug/L	P322959	

Ref. Method and Comment:
USGS O-2060-01: MS accuracy for bentazon and 2,4-D 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: P322744

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P322959

Component	Result	Code	Units
2,4-D	0.0040	U	ug/L
Acetaminophen	0.010	U	ug/L
Bentazon	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0040	U	ug/L
Primidone	0.0080	U	ug/L
Triclopyr	0.010	U	ug/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P322744

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	100		P	40 - 140

Reference Method: USGS O-2060-01
Batch ID: P322959

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	64.4		P	40 - 140
Acetaminophen	90.0		P	40 - 140
Bentazon	94.8		P	40 - 140
Carbamazepine	96.4		P	40 - 140
Diuron	75.2		P	40 - 140
Fenuron	96.4		P	40 - 140
Fluridone	103		P	40 - 140
Imidacloprid	77.2		P	40 - 160
Linuron	80.8		P	40 - 140
MCPP	72.8		P	40 - 140
Primidone	80.4		P	40 - 140
Triclopyr	88.0		P	40 - 140

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P322744

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1886134	Sucralose	83.0	73.0	P/P	40 - 140

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P322959

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1886675	Acetaminophen	53.2	51.6	P/P	40 - 140
1886675	Carbamazepine	37.4	40.2	F/P	40 - 140
1886675	Diuron	33.6	44.0	F/P	40 - 140
1886675	Fenuron	48.8	52.8	P/P	40 - 140
1886675	Fluridone	55.2	60.8	P/P	40 - 140
1886675	Imidacloprid	56.0	66.4	P/P	40 - 160
1886675	Linuron	136	143	P/F	40 - 140
1886675	MCPP	124	103	P/P	40 - 140
1886675	Primidone	39.6	52.0	F/P	40 - 140
1886675	Triclopyr	118	108	P/P	40 - 140

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P322744

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1886134	Sucralose	1.45	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P322959

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1886675	2,4-D	5.31	Spike	P	0 - 30
1886675	Acetaminophen	3.05	Spike	P	0 - 30
1886675	Bentazon	2.54	Spike	P	0 - 30
1886675	Carbamazepine	4.03	Spike	P	0 - 30
1886675	Diuron	23.3	Spike	P	0 - 30
1886675	Fenuron	7.87	Spike	P	0 - 30
1886675	Fluridone	5.45	Spike	P	0 - 30
1886675	Imidacloprid	6.79	Spike	P	0 - 30
1886675	Linuron	4.86	Spike	P	0 - 30
1886675	MCPP	17.0	Spike	P	0 - 30
1886675	Primidone	10.0	Spike	P	0 - 30
1886675	Triclopyr	8.31	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: 1886707
Field Sample ID: G5NW0068

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	73.0	P	40 - 150
USGS O-2060-01	2,4-D-d3	90.2	P	40 - 150

Quality Assurance Report
Surrogates

Lab Sample ID: 1886707
Field Sample ID: G5NW0068

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	Acetaminophen-d4	73.0	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	95.4	P	40 - 160
USGS O-2060-01	Diuron-d6	61.8	P	40 - 150
USGS O-2060-01	Primidone-d5	66.4	P	40 - 150

Lab Sample ID: 1886708
Field Sample ID: G5NW0003

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	86.5	P	40 - 150
USGS O-2060-01	2,4-D-d3	84.0	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	74.6	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	80.8	P	40 - 160
USGS O-2060-01	Diuron-d6	63.2	P	40 - 150
USGS O-2060-01	Primidone-d5	59.0	P	40 - 150

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A75673
Included Lab Sample IDs: 1886707, 1886708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	122	140	P/P	60 - 150

Reference Method: USGS O-2060-01
Run ID: A75776
Included Lab Sample IDs: 1886707, 1886708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	124	118	P/P	60 - 150
Carbamazepine	137	138	P/P	60 - 150
Diuron	124	131	P/P	60 - 150
Fenuron	130	128	P/P	60 - 150
Fluridone	140	138	P/P	60 - 150
Imidacloprid	109	111	P/P	60 - 150
Linuron	114	108	P/P	60 - 150
Primidone	110	112	P/P	60 - 150

Reference Method: USGS O-2060-01
Run ID: A75820
Included Lab Sample IDs: 1886707, 1886708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.6	112	P/P	50 - 150
Bentazon	81.8	89.2	P/P	50 - 150
MCPP	133	134	P/P	50 - 150
Triclopyr	114	118	P/P	50 - 150

Quality Assurance Report
Calibration Verification

* 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	Sucralose	100	83.0	73.0			1.45
USGS O-2060-01	2,4-D	64.4					5.31
	Acetaminophen	90.0	53.2	51.6			3.05
	Bentazon	94.8					2.54
	Carbamazepine	96.4	37.4	40.2			4.03
	Diuron	75.2	33.6	44.0			23.3
	Fenuron	96.4	48.8	52.8			7.87
	Fluridone	103	55.2	60.8			5.45
	Imidacloprid	77.2	56.0	66.4			6.79
	Linuron	80.8	136	143			4.86
	MCPP	72.8	124	103			17.0
	Primidone	80.4	39.6	52.0			10.0
	Triclopyr	88.0	118	108			8.31

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1886707, 1886708
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1886707, 1886708
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1886707, 1886708

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	04/07/2017	04/07/2017	Mohammad Ghaffari	04/07/2017	Mohammad Ghaffari	1886707, 1886708
USGS O-2060-01	04/07/2017	04/12/2017	Hoor Shaik	04/13/2017	Juyoung Kim	1886707, 1886708
	04/07/2017	04/12/2017	Hoor Shaik	04/16/2017	Juyoung Kim	1886707, 1886708