

Chemical Analysis Report

NE-DIST-2017-10-11-01

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

Event Description: **LSJR SOUTH 1**
Request ID: **RQ-2017-10-09-30**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 20-OCT-2017 14:59

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored 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 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: Julington Creek @ US1

Collection Date/Time: 10/10/2017 09:00

Field ID: G2NE0604 10102017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1935639	EPA 8321B	Sucralose**	0.11		ug/L	P333049	
	USGS O-2060-01	2,4-D	0.028		ug/L	P333050	
		Diuron	0.0023	I	ug/L	P333050	
		Fenuron	0.0080	U	ug/L	P333050	
		Imidacloprid	0.13		ug/L	P333050	MS
		Bentazon	0.015		ug/L	P333050	MS
		Linuron	0.0040	U	ug/L	P333050	
		Acetaminophen**	0.0080	U	ug/L	P333050	
		MCP	0.0020	U	ug/L	P333050	
		Carbamazepine**	4.0E-04	U	ug/L	P333050	
		Triclopyr**	0.0040	U	ug/L	P333050	MS
		Primidone**	0.0040	U	ug/L	P333050	
		Fluridone**	0.0034		ug/L	P333050	

Ref. Method and Comment:

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

Sample Location: Big Davis Creek @ US1

Collection Date/Time: 10/10/2017 09:15

Field ID: G2NE0613 10102017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1935640	EPA 8321B	Sucralose**	0.038	I	ug/L	P333049	
	USGS O-2060-01	2,4-D	0.019		ug/L	P333050	
		Diuron	8.0E-04	U	ug/L	P333050	
		Fenuron	0.0080	U	ug/L	P333050	
		Imidacloprid	0.0012	I	ug/L	P333050	MS
		Bentazon	8.0E-04	U	ug/L	P333050	MS
		Linuron	0.0040	U	ug/L	P333050	
		Acetaminophen**	0.0080	U	ug/L	P333050	
		MCP	0.0020	U	ug/L	P333050	
		Carbamazepine**	4.0E-04	U	ug/L	P333050	
		Triclopyr**	0.0040	U	ug/L	P333050	MS
		Primidone**	0.0040	U	ug/L	P333050	
		Fluridone**	4.0E-04	U	ug/L	P333050	

Ref. Method and Comment:

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

Sample Location: Mill Creek @ SR 16

Collection Date/Time: 10/10/2017 10:30

Field ID: G2NE0481 10102017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1935641	EPA 8321B	Sucralose**	4.5		ug/L	P333049	
	USGS O-2060-01	2,4-D	0.021		ug/L	P333050	
		Diuron	0.0010	I	ug/L	P333050	
		Fenuron	0.0080	U	ug/L	P333050	
		Imidacloprid	0.12		ug/L	P333050	MS

Field ID: G2NE0481 10102017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1935641	USGS O-2060-01	Bentazon	0.014		ug/L	P333050	MS
		Linuron	0.0040	U	ug/L	P333050	
		Acetaminophen**	0.0080	U	ug/L	P333050	
		MCP	0.0025	I	ug/L	P333050	
		Carbamazepine**	0.0023		ug/L	P333050	
		Triclopyr**	0.0040	U	ug/L	P333050	MS
		Primidone**	0.018		ug/L	P333050	
		Fluridone**	5.6E-04	I	ug/L	P333050	

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for 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: P333049

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P333050

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	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P333049

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	116		P	40 - 150

Reference Method: USGS O-2060-01

Batch ID: P333050

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	63.2		P	40 - 150
Acetaminophen	111		P	30 - 150
Bentazon	30.3		P	30 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P333050

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Carbamazepine	104		P	40 - 150
Diuron	99.7		P	40 - 150
Fenuron	93.4		P	40 - 150
Fluridone	109		P	40 - 150
Imidacloprid	92.6		P	40 - 160
Linuron	94.7		P	40 - 150
MCPP	63.8		P	40 - 150
Primidone	97.1		P	40 - 150
Triclopyr	62.7		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P333049

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1935016	Sucralose	66.8	86.8	P/P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P333050

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1935465	Acetaminophen	98.9	96.0	P/P	30 - 150
1935465	Bentazon	18.5	18.0	F/F	30 - 150
1935465	Carbamazepine	83.5	78.7	P/P	40 - 150
1935465	Diuron	58.1	56.6	P/P	40 - 150
1935465	Fenuron	88.5	85.1	P/P	40 - 150
1935465	Fluridone	82.4	80.9	P/P	40 - 150
1935465	Imidacloprid	177	168	F/F	40 - 160
1935465	Linuron	76.8	75.3	P/P	40 - 150
1935465	MCPP	44.5	44.8	P/P	40 - 150
1935465	Primidone	114	116	P/P	40 - 150
1935465	Triclopyr	38.5	37.2	F/F	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P333049

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1935016	Sucralose	17.9	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P333050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1935465	2,4-D	3.65	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P333050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1935465	Acetaminophen	2.98	Spike	P	0 - 30
1935465	Bentazon	2.52	Spike	P	0 - 30
1935465	Carbamazepine	5.92	Spike	P	0 - 30
1935465	Diuron	1.45	Spike	P	0 - 30
1935465	Fenuron	3.92	Spike	P	0 - 30
1935465	Fluridone	1.69	Spike	P	0 - 30
1935465	Imidacloprid	3.80	Spike	P	0 - 30
1935465	Linuron	1.97	Spike	P	0 - 30
1935465	MCPP	0.672	Spike	P	0 - 30
1935465	Primidone	1.83	Spike	P	0 - 30
1935465	Triclopyr	3.33	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: 1935639
Field Sample ID: G2NE0604 10102017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	83.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	73.9	P	30 - 160
EPA 8321B	Diuron-d6	51.5	P	30 - 160
EPA 8321B	Primidone-d5	78.4	P	30 - 160
EPA 8321B	Sucralose-d6	88.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	56.7	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	83.2	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	73.9	P	30 - 160
USGS O-2060-01	Diuron-d6	51.5	P	30 - 160
USGS O-2060-01	Primidone-d5	78.4	P	30 - 160
USGS O-2060-01	Sucralose-d6	88.0	P	40 - 160

Lab Sample ID: 1935640
Field Sample ID: G2NE0613 10102017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	113	P	30 - 160
EPA 8321B	Carbamazepine-d10	76.8	P	30 - 160
EPA 8321B	Diuron-d6	52.1	P	30 - 160
EPA 8321B	Primidone-d5	71.6	P	30 - 160
EPA 8321B	Sucralose-d6	138	P	40 - 160
USGS O-2060-01	2,4-D-d3	66.4	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	113	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	76.8	P	30 - 160
USGS O-2060-01	Diuron-d6	52.1	P	30 - 160
USGS O-2060-01	Primidone-d5	71.6	P	30 - 160
USGS O-2060-01	Sucralose-d6	138	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1935641
 Field Sample ID: G2NE0481 10102017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	86.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.0	P	30 - 160
EPA 8321B	Diuron-d6	45.9	P	30 - 160
EPA 8321B	Primidone-d5	74.4	P	30 - 160
EPA 8321B	Sucralose-d6	138	P	40 - 160
USGS O-2060-01	2,4-D-d3	62.3	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	86.5	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	69.0	P	30 - 160
USGS O-2060-01	Diuron-d6	45.9	P	30 - 160
USGS O-2060-01	Primidone-d5	74.4	P	30 - 160
USGS O-2060-01	Sucralose-d6	138	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
 Run ID: A79478
 Included Lab Sample IDs: 1935639, 1935640, 1935641

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	95.9	85.6	P/P	50 - 150
Acetaminophen	91.4	91.9	P/P	60 - 150
Bentazon	90.6	62.2	P/P	50 - 150
Carbamazepine	97.3	87.0	P/P	60 - 150
Diuron	98.9	92.4	P/P	60 - 150
Fenuron	95.2	90.4	P/P	60 - 150
Fluridone	109	108	P/P	60 - 160
Imidacloprid	96.2	92.6	P/P	60 - 150
Linuron	103	102	P/P	60 - 150
MCPP	97.7	86.4	P/P	50 - 150
Primidone	98.3	88.7	P/P	60 - 150
Triclopyr	101	84.4	P/P	50 - 150

Reference Method: EPA 8321B
 Run ID: A79590
 Included Lab Sample IDs: 1935639, 1935640, 1935641

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	109	109	P/P	60 - 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	LCS	Precision SMP	MS
EPA 8321B	Sucralose	116	66.8 86.8			17.9
USGS O-2060-01	2,4-D	63.2				3.65

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
USGS O-2060-01	Acetaminophen	111	98.9	96.0		2.98
	Bentazon	30.3	18.5	18.0		2.52
	Carbamazepine	104	83.5	78.7		5.92
	Diuron	99.7	58.1	56.6		1.45
	Fenuron	93.4	88.5	85.1		3.92
	Fluridone	109	82.4	80.9		1.69
	Imidacloprid	92.6	177	168		3.80
	Linuron	94.7	76.8	75.3		1.97
	MCP	63.8	44.5	44.8		0.672
	Primidone	97.1	114	116		1.83
	Triclopyr	62.7	38.5	37.2		3.33

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1935639, 1935640, 1935641
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1935639, 1935640, 1935641
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1935639, 1935640, 1935641

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	10/11/2017	10/12/2017	Juyoung Kim	10/12/2017	Juyoung Kim	1935639, 1935640, 1935641
USGS O-2060-01	10/11/2017	10/12/2017	Hoor Shaik	10/13/2017	Julie Michelle Frank	1935639, 1935640, 1935641