Chemical Analysis Report

CEN-DIST-2017-05-16-02

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

Event Description: **Salt Creek / Haynes Creek**
Request ID: **RQ-2017-05-15-45**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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3319 Maguire Blvd., Suite 232
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 05-JUN-2017 16:43

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: Haynes Creek @ 300m DS of CR44 **Collection Date/Time: 05/15/2017 11:02**

Field ID: G1CE0023 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1899561	EPA 8321B	Sucralose**	0.16		ug/L	P325291	
	USGS O-2060-01	2,4-D	0.048		ug/L	P325285	
		Diuron	8.0E-04	U	ug/L	P325285	
		Fenuron	0.0040	U	ug/L	P325285	
		Imidacloprid	8.0E-04	U	ug/L	P325285	MS
		Bentazon	9.6E-04	I	ug/L	P325285	
		Linuron	0.0040	U	ug/L	P325285	
		Acetaminophen**	0.0080	U	ug/L	P325285	
		MCPP	8.0E-04	U	ug/L	P325285	
		Carbamazepine**	4.0E-04	U	ug/L	P325285	
		Triclopyr**	0.0040	U	ug/L	P325285	
		Primidone**	0.0040	U	ug/L	P325285	
		Fluridone**	0.0044		ug/L	P325285	

Sample Location: Salt Creek @ Packard Ave **Collection Date/Time: 05/15/2017 13:46**

Field ID: G2CE0088 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1899562	EPA 8321B	Sucralose**	0.010	U	ug/L	P325291	
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P325285	
		Diuron	8.0E-04	U	ug/L	P325285	
		Fenuron	0.0040	U	ug/L	P325285	
		Imidacloprid	0.0014	I	ug/L	P325285	MS
		Bentazon	8.0E-04	U	ug/L	P325285	
		Linuron	0.0040	U	ug/L	P325285	
		Acetaminophen**	0.0080	U	ug/L	P325285	
		MCPP	8.0E-04	U	ug/L	P325285	
		Carbamazepine**	4.0E-04	U	ug/L	P325285	
		Triclopyr**	0.0040	U	ug/L	P325285	
		Primidone**	0.0040	U	ug/L	P325285	
		Fluridone**	4.0E-04	U	ug/L	P325285	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P325291

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01
Batch ID: P325285

Component	Result	Code	Units
2,4-D	8.0E-04	U	ug/L
Acetaminophen	0.0080	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P325285

Component	Result	Code	Units
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0040	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	8.0E-04	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: P325291

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	78.3		P	40 - 140

Reference Method: USGS O-2060-01
Batch ID: P325285

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	88.4		P	40 - 140
Acetaminophen	86.2		P	40 - 140
Bentazon	70.6		P	40 - 140
Carbamazepine	107		P	40 - 140
Diuron	108		P	40 - 140
Fenuron	93.2		P	40 - 140
Fluridone	103		P	40 - 140
Imidacloprid	92.0		P	40 - 160
Linuron	100		P	40 - 140
MCPP	91.4		P	40 - 140
Primidone	98.0		P	40 - 140
Triclopyr	94.8		P	40 - 140

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P325291

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1898904	Sucralose	59.7	55.5	P/P	40 - 140

Reference Method: USGS O-2060-01
Batch ID: P325285

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1898769	2,4-D	81.2	80.8	P/P	40 - 140

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P325285

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1898769	Acetaminophen	97.0	95.4	P/P	40 - 140
1898769	Bentazon	45.6	45.4	P/P	40 - 140
1898769	Carbamazepine	110	122	P/P	40 - 140
1898769	Diuron	111	97.2	P/P	40 - 140
1898769	Fenuron	85.0	88.2	P/P	40 - 140
1898769	Fluridone	46.0	45.0	P/P	40 - 140
1898769	Imidacloprid	156	161	P/F	40 - 160
1898769	Linuron	97.6	102	P/P	40 - 140
1898769	MCPP	82.0	75.4	P/P	40 - 140
1898769	Primidone	102	112	P/P	40 - 140
1898769	Triclopyr	83.2	82.4	P/P	40 - 140

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P325291

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1898904	Sucralose	6.94	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P325285

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1898769	2,4-D	0.480	Spike	P	0 - 30
1898769	Acetaminophen	1.66	Spike	P	0 - 30
1898769	Bentazon	0.440	Spike	P	0 - 30
1898769	Carbamazepine	10.4	Spike	P	0 - 30
1898769	Diuron	12.9	Spike	P	0 - 30
1898769	Fenuron	3.70	Spike	P	0 - 30
1898769	Fluridone	2.20	Spike	P	0 - 30
1898769	Imidacloprid	2.81	Spike	P	0 - 30
1898769	Linuron	4.21	Spike	P	0 - 30
1898769	MCPP	8.39	Spike	P	0 - 30
1898769	Primidone	9.74	Spike	P	0 - 30
1898769	Triclopyr	0.966	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: 1899561
Field Sample ID: G1CE0023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	103	P	40 - 150

Quality Assurance Report
Surrogates

Lab Sample ID: 1899561
Field Sample ID: G1CE0023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	2,4-D-d3	67.7	P	30 - 150
USGS O-2060-01	Acetaminophen-d4	95.6	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	91.0	P	30 - 160
USGS O-2060-01	Diuron-d6	78.1	P	30 - 150
USGS O-2060-01	Primidone-d5	49.5	P	30 - 150

Lab Sample ID: 1899562
Field Sample ID: G2CE0088

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	122	P	40 - 150
USGS O-2060-01	2,4-D-d3	74.2	P	30 - 150
USGS O-2060-01	Acetaminophen-d4	78.8	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	95.4	P	30 - 160
USGS O-2060-01	Diuron-d6	92.6	P	30 - 150
USGS O-2060-01	Primidone-d5	85.9	P	30 - 150

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A76559
Included Lab Sample IDs: 1899561

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	80.8	65.2	P/P	60 - 150

Reference Method: USGS O-2060-01
Run ID: A76569
Included Lab Sample IDs: 1899561, 1899562

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.0	91.6	P/P	50 - 150
Acetaminophen	74.0	101	P/P	60 - 150
Bentazon	90.8	98.0	P/P	50 - 150
Carbamazepine	80.4	92.8	P/P	60 - 150
Diuron	80.0	94.0	P/P	60 - 150
Fenuron	78.0	100	P/P	60 - 150
Fluridone	81.6	95.2	P/P	60 - 150
Imidacloprid	71.2	88.0	P/P	60 - 150
Linuron	78.8	76.0	P/P	60 - 150
MCPP	86.0	84.4	P/P	50 - 150
Primidone	82.0	89.6	P/P	60 - 150
Triclopyr	88.0	92.8	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A76745
Included Lab Sample IDs: 1899562

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	114	106	P/P	60 - 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	78.3	59.7	55.5			6.94
USGS O-2060-01	2,4-D	88.4	81.2	80.8			0.480
	Acetaminophen	86.2	97.0	95.4			1.66
	Bentazon	70.6	45.6	45.4			0.440
	Carbamazepine	107	110	122			10.4
	Diuron	108	111	97.2			12.9
	Fenuron	93.2	85.0	88.2			3.70
	Fluridone	103	46.0	45.0			2.20
	Imidacloprid	92.0	156	161			2.81
	Linuron	100	97.6	102			4.21
	MCPP	91.4	82.0	75.4			8.39
	Primidone	98.0	102	112			9.74
	Triclopyr	94.8	83.2	82.4			0.966

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1899561, 1899562
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1899561, 1899562
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1899561, 1899562

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	05/16/2017	05/18/2017	Mohammad Ghaffari	05/18/2017	Mohammad Ghaffari	1899561
	05/16/2017	05/18/2017	Mohammad Ghaffari	05/27/2017	Mohammad Ghaffari	1899562
USGS O-2060-01	05/16/2017	05/17/2017	Hoor Shaik	05/21/2017	Juyoung Kim	1899561, 1899562