

Chemical Analysis Report

NE-DIST-2017-08-09-02

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

Event Description: **Egan Creek-PO 8/7/17**

Request ID: **RQ-2017-08-07-31**

Customer: **NE-DIST**

Project ID: **SMP**

Send Reports to:
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 06-SEP-2017 11:30



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: Egan Creek @ Sadler Rd.

Collection Date/Time: 08/08/2017 13:55

Field ID: 123456

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919962	EPA 8321B	Sucralose**	0.15		ug/L	P330674	
	USGS O-2060-01	2,4-D	0.013		ug/L	P329841	
		Diuron	0.0016	I	ug/L	P329841	
		Fenuron	0.0089	I	ug/L	P329841	
		Imidacloprid	0.22		ug/L	P329841	
		Bentazon	0.027		ug/L	P329841	MS
		Linuron	0.0040	U	ug/L	P329841	
		Acetaminophen**	0.0080	U	ug/L	P329841	
		MCP	0.014		ug/L	P329841	
		Carbamazepine**	4.0E-04	U	ug/L	P329841	
		Triclopyr**	0.0040	U	ug/L	P329841	
		Primidone**	0.0040	U	ug/L	P329841	
		Fluridone**	0.050		ug/L	P329841	

Ref. Method and Comment:

EPA 8321B: MS recoveries are not available due to technical difficulties.

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: Egan Creek @ Atlantic

Collection Date/Time: 08/08/2017 14:30

Field ID: 123456

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919963	EPA 8321B	Sucralose**	0.098		ug/L	P330674	
	USGS O-2060-01	2,4-D	0.012		ug/L	P329841	
		Diuron	0.0044		ug/L	P329841	
		Fenuron	0.0080	U	ug/L	P329841	
		Imidacloprid	0.027		ug/L	P329841	
		Bentazon	0.015		ug/L	P329841	MS
		Linuron	0.0040	U	ug/L	P329841	
		Acetaminophen**	0.0080	U	ug/L	P329841	
		MCP	0.0028	I	ug/L	P329841	
		Carbamazepine**	4.0E-04	U	ug/L	P329841	
		Triclopyr**	0.0040	U	ug/L	P329841	
		Primidone**	0.0040	U	ug/L	P329841	
		Fluridone**	0.039		ug/L	P329841	

Ref. Method and Comment:

EPA 8321B: MS recoveries are not available due to technical difficulties.

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: P330674

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P329841

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0080	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P330674

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	90.3	92.2	P/P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P329841

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	103		P	40 - 150
Acetaminophen	76.0		P	30 - 150
Bentazon	101		P	40 - 150
Carbamazepine	88.2		P	40 - 150
Diuron	81.5		P	40 - 150
Fenuron	82.1		P	40 - 150
Fluridone	111		P	40 - 150
Imidacloprid	81.2		P	40 - 160
Linuron	83.1		P	40 - 150
MCPP	91.6		P	40 - 150
Primidone	84.5		P	40 - 150
Triclopyr	90.3		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P329841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1919076	Acetaminophen	98.2	96.7	P/P	30 - 150
1919076	Bentazon	38.2	38.8	F/F	40 - 150
1919076	Carbamazepine	83.9	72.7	P/P	40 - 150
1919076	Diuron	48.5	53.8	P/P	40 - 150
1919076	Fenuron	73.4	64.3	P/P	40 - 150
1919076	Fluridone	67.7	55.6	P/P	40 - 150
1919076	Imidacloprid	139	123	P/P	40 - 160
1919076	Linuron	62.3	65.5	P/P	40 - 150
1919076	MCP	121	111	P/P	40 - 150
1919076	Primidone	102	80.3	P/P	40 - 150
1919076	Triclopyr	112	123	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P330674

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Sucralose	2.12	LCS	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P329841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919076	2,4-D	0.984	Spike	P	0 - 30
1919076	Acetaminophen	1.46	Spike	P	0 - 30
1919076	Bentazon	0.907	Spike	P	0 - 30
1919076	Carbamazepine	13.8	Spike	P	0 - 30
1919076	Diuron	7.89	Spike	P	0 - 30
1919076	Fenuron	13.2	Spike	P	0 - 30
1919076	Fluridone	11.9	Spike	P	0 - 30
1919076	Imidacloprid	9.50	Spike	P	0 - 30
1919076	Linuron	4.98	Spike	P	0 - 30
1919076	MCP	9.09	Spike	P	0 - 30
1919076	Primidone	24.0	Spike	P	0 - 30
1919076	Triclopyr	8.97	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: 1919962
Field Sample ID: 123456

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	81.0	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1919962

Field Sample ID: 123456

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Carbamazepine-d10	72.8	P	30 - 160
EPA 8321B	Diuron-d6	65.6	P	30 - 160
EPA 8321B	Primidone-d5	77.9	P	30 - 160
EPA 8321B	Sucralose-d6	56.6	P	40 - 160
USGS O-2060-01	2,4-D-d3	143	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	81.0	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	72.8	P	30 - 160
USGS O-2060-01	Diuron-d6	65.6	P	30 - 160
USGS O-2060-01	Primidone-d5	77.9	P	30 - 160
USGS O-2060-01	Sucralose-d6	56.6	P	40 - 160

Lab Sample ID: 1919963

Field Sample ID: 123456

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	99.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	78.7	P	30 - 160
EPA 8321B	Diuron-d6	76.0	P	30 - 160
EPA 8321B	Primidone-d5	74.8	P	30 - 160
EPA 8321B	Sucralose-d6	60.5	P	40 - 160
USGS O-2060-01	2,4-D-d3	134	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	99.0	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	78.7	P	30 - 160
USGS O-2060-01	Diuron-d6	76.0	P	30 - 160
USGS O-2060-01	Primidone-d5	74.8	P	30 - 160
USGS O-2060-01	Sucralose-d6	60.5	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A78403

Included Lab Sample IDs: 1919962, 1919963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	112	132	P/P	50 - 150
Acetaminophen	77.7	82.7	P/P	60 - 150
Bentazon	110	117	P/P	50 - 150
Carbamazepine	81.9	87.0	P/P	60 - 150
Diuron	86.2	87.0	P/P	60 - 150
Fenuron	85.4	87.1	P/P	60 - 150
Fluridone	120	116	P/P	60 - 160
Imidacloprid	82.5	82.0	P/P	60 - 150
Linuron	117	87.0	P/P	60 - 150
MCP	93.0	114	P/P	50 - 150
Primidone	100	105	P/P	60 - 150
Triclopyr	151	144	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A78750

Included Lab Sample IDs: 1919962, 1919963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	114	121	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	90.3	92.2			2.12		
USGS O-2060-01	2,4-D	103						0.984
	Acetaminophen	76.0		96.7	98.2			1.46
	Bentazon	101		38.2	38.8			0.907
	Carbamazepine	88.2		83.9	72.7			13.8
	Diuron	81.5		48.5	53.8			7.89
	Fenuron	82.1		64.3	73.4			13.2
	Fluridone	111		67.7	55.6			11.9
	Imidacloprid	81.2		123	139			9.50
	Linuron	83.1		62.3	65.5			4.98
	MCP	91.6		121	111			9.09
	Primidone	84.5		80.3	102			24.0
	Triclopyr	90.3		112	123			8.97

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1919962, 1919963
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1919962, 1919963
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1919962, 1919963

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	08/09/2017	08/23/2017	Julie Michelle Frank	08/31/2017	Julie Michelle Frank	1919962, 1919963
USGS O-2060-01	08/09/2017	08/10/2017	Hoor Shaik	08/11/2017	Juyoung Kim	1919962, 1919963