

Chemical Analysis Report

NE-DIST-2017-06-08-01

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

Event Description: **Egon Creek**
Request ID: **RQ-2017-06-05-71**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way W
Suite 100
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Attn: Nicole Frederick

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 30-JUN-2017 12:00

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: Egan Creek @ Atlantic

Collection Date/Time: 06/07/2017 11:30

Field ID: 123456

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1904436	EPA 8321B	Sucralose**	0.15		ug/L	P326509	
	USGS O-2060-01	2,4-D	0.0046		ug/L	P326471	
		Diuron	0.0029	I	ug/L	P326471	
		Fenuron	0.0040	U	ug/L	P326471	
		Imidacloprid	0.016	J	ug/L	P326471	MS
		Bentazon	0.0053	J	ug/L	P326471	MS
		Linuron	0.0040	U	ug/L	P326471	
		Acetaminophen**	0.0080	U	ug/L	P326471	
		MCP	0.0020	U	ug/L	P326471	
		Carbamazepine**	4.0E-04	U	ug/L	P326471	
		Triclopyr**	0.0040	U	ug/L	P326471	
		Primidone**	0.0040	U	ug/L	P326471	
		Fluridone**	0.0022		ug/L	P326471	

Ref. Method and Comment:
 USGS O-2060-01: Refer to the narrative for an explanation of QC Codes.

Sample Location: Egan Creek @ Sadler Rd.

Collection Date/Time: 06/07/2017 10:50

Field ID: 123456

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1904437	EPA 8321B	Sucralose**	0.18		ug/L	P326509	
	USGS O-2060-01	2,4-D	0.012		ug/L	P326471	
		Diuron	8.0E-04	U	ug/L	P326471	
		Fenuron	0.0040	U	ug/L	P326471	
		Imidacloprid	0.015		ug/L	P326471	MS
		Bentazon	0.0058		ug/L	P326471	MS
		Linuron	0.0040	U	ug/L	P326471	
		Acetaminophen**	0.0080	U	ug/L	P326471	
		MCP	0.0020	U	ug/L	P326471	
		Carbamazepine**	4.0E-04	U	ug/L	P326471	
		Triclopyr**	0.0040	U	ug/L	P326471	
		Primidone**	0.0040	U	ug/L	P326471	
		Fluridone**	5.8E-04	I	ug/L	P326471	

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
 Batch ID: P326509

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01
 Batch ID: P326471

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
 Batch ID: P326471

Component	Result	Code	Units
2,4-D	8.0E-04	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	0.0040	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: P326509

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	77.2		P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P326471

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	90.0		P	40 - 140
Acetaminophen	70.4		P	40 - 140
Bentazon	77.4		P	40 - 140
Carbamazepine	132		P	40 - 140
Diuron	120		P	40 - 140
Fenuron	113		P	40 - 140
Fluridone	115		P	40 - 140
Imidacloprid	110		P	40 - 160
Linuron	119		P	40 - 140
MCP	95.6		P	40 - 140
Primidone	110		P	40 - 140
Triclopyr	94.2		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P326509

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904523	Sucralose	76.5	76.4	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P326471

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904436	2,4-D	93.2	87.4	P/P	40 - 140
1904436	Acetaminophen	99.2	115	P/P	40 - 140
1904436	Bentazon	32.4	29.6	F/F	40 - 140
1904436	Carbamazepine	116	111	P/P	40 - 140
1904436	Diuron	88.5	79.9	P/P	40 - 140
1904436	Fenuron	86.9	83.2	P/P	40 - 140
1904436	Fluridone	79.1	71.8	P/P	40 - 140
1904436	Imidacloprid	197	187	F/F	40 - 160
1904436	Linuron	112	98.7	P/P	40 - 140
1904436	MCP	71.4	65.2	P/P	40 - 140
1904436	Primidone	98.8	95.1	P/P	40 - 140
1904436	Triclopyr	75.2	72.4	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P326509

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904523	Sucralose	0.193	Spike	P	0 - 30

Reference Method: USGS O-2060-01
 Batch ID: P326471

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904436	2,4-D	5.69	Spike	P	0 - 30
1904436	Acetaminophen	14.5	Spike	P	0 - 30
1904436	Bentazon	6.33	Spike	P	0 - 30
1904436	Carbamazepine	4.41	Spike	P	0 - 30
1904436	Diuron	9.47	Spike	P	0 - 30
1904436	Fenuron	4.33	Spike	P	0 - 30
1904436	Fluridone	8.95	Spike	P	0 - 30
1904436	Imidacloprid	4.13	Spike	P	0 - 30
1904436	Linuron	12.4	Spike	P	0 - 30
1904436	MCP	9.08	Spike	P	0 - 30
1904436	Primidone	3.80	Spike	P	0 - 30
1904436	Triclopyr	3.79	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: 1904436
 Field Sample ID: 123456

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
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Quality Assurance Report Surrogates

Lab Sample ID: 1904436
 Field Sample ID: 123456

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	154	P	40 - 160
USGS O-2060-01	2,4-D-d3	96.0	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	120	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	118	P	30 - 160
USGS O-2060-01	Diuron-d6	90.0	P	30 - 160
USGS O-2060-01	Primidone-d5	93.2	P	30 - 150

Lab Sample ID: 1904437
 Field Sample ID: 123456

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	132	P	40 - 160
USGS O-2060-01	2,4-D-d3	99.4	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	123	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	113	P	30 - 160
USGS O-2060-01	Diuron-d6	77.3	P	30 - 160
USGS O-2060-01	Primidone-d5	87.3	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
 Run ID: A77208
 Included Lab Sample IDs: 1904436, 1904437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.2	90.8	P/P	50 - 150
Bentazon	109	98.0	P/P	50 - 150
MCP	94.8	84.4	P/P	50 - 150
Triclopyr	91.6	83.6	P/P	50 - 150

Reference Method: EPA 8321B
 Run ID: A77273
 Included Lab Sample IDs: 1904436

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	115	88.2	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A77276
 Included Lab Sample IDs: 1904437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	112	85.0	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		LCS	Precision	MS
						SMP	
EPA 8321B	Sucralose	77.2	76.5	76.4			0.193
USGS O-2060-01	2,4-D	90.0	93.2	87.4			5.69
	Acetaminophen	70.4	99.2	115			14.5
	Bentazon	77.4	32.4	29.6			6.33
	Carbamazepine	132	116	111			4.41
	Diuron	120	88.5	79.9			9.47
	Fenuron	113	86.9	83.2			4.33
	Fluridone	115	79.1	71.8			8.95
	Imidacloprid	110	197	187			4.13
	Linuron	119	112	98.7			12.4
	MCP	95.6	71.4	65.2			9.08
	Primidone	110	98.8	95.1			3.80
	Triclopyr	94.2	75.2	72.4			3.79

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1904436, 1904437
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1904436, 1904437
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1904436, 1904437

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	06/08/2017	06/15/2017	Mohammad Ghaffari	06/21/2017	Mohammad Ghaffari	1904436, 1904437
USGS O-2060-01	06/08/2017	06/14/2017	Hoor Shaik	06/17/2017	Juyoung Kim	1904436, 1904437