

Chemical Analysis Report

SW-DIST-2018-04-03-03

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

Event Description: **Pinellas LR3- Bishop Creek**
Request ID: **RQ-2018-04-02-11**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 18-APR-2018 13:54

A handwritten signature in black ink, appearing to read "Liang Lin", is shown 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: BISHOP CREEK @ HARBOR LAKES DR

Collection Date/Time: 04/02/2018 13:16

Field ID: G1SW0061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1980255	EPA 8321B	2,4-D	0.0030	I	ug/L	P342539	
		Sucralose**	0.11	U	ug/L	P342825	
		Bentazon	0.036		ug/L	P342539	
		MCP	0.0020	U	ug/L	P342539	
		Triclopyr**	0.0040	U	ug/L	P342539	
		Imidacloprid	0.0085		ug/L	P342539	MS
		Diuron	0.0020	U	ug/L	P342539	
		Pyraclostrobin**	0.0020	U	ug/L	P342539	
		Primidone**	0.0040	U	ug/L	P342539	
		Linuron	0.0040	U	ug/L	P342539	
		Acetaminophen**	0.0080	U	ug/L	P342539	
		Fenuron	0.016	U	ug/L	P342539	
		Imazapyr**	0.11		ug/L	P342539	
		Carbamazepine**	4.0E-04	U	ug/L	P342539	
		Fluridone**	0.26		ug/L	P342408	
		Hydrocodone**	8.0E-04	U	ug/L	P342539	

Ref. Method and Comment:

EPA 8321B: MS accuracy for 2,4-D and imazapyr 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: P342408

Component	Result	Code	Units
Fluridone	8.0E-04	U	ug/L

Reference Method: EPA 8321B

Batch ID: P342539

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	0.0020	U	ug/L
Fenuron	0.017	I	ug/L
Hydrocodone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P342825

Component	Result	Code	Units
Sucralose	0.11	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P342408

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluridone	56.1		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P342539

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	64.8		P	40 - 150
Acetaminophen	99.8		P	30 - 150
Bentazon	68.3		P	30 - 150
Carbamazepine	83.6		P	40 - 150
Diuron	66.7		P	40 - 150
Fenuron	114		P	40 - 150
Hydrocodone	118		P	40 - 150
Imazapyr	73.4		P	40 - 150
Imidacloprid	106		P	40 - 160
Linuron	79.8		P	40 - 150
MCPP	61.0		P	40 - 150
Primidone	110		P	40 - 150
Pyraclostrobin	66.6		P	40 - 150
Triclopyr	56.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P342825

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	117		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P342408

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1978945	Fluridone	53.5	63.3	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P342539

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979892	Acetaminophen	127	125	P/P	30 - 150
1979892	Bentazon	37.7	33.9	P/P	30 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P342539

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979892	Carbamazepine	94.2	92.9	P/P	40 - 150
1979892	Diuron	72.4	79.4	P/P	40 - 150
1979892	Fenuron	101	106	P/P	40 - 150
1979892	Hydrocodone	139	140	P/P	40 - 150
1979892	Imidacloprid	185	197	F/F	40 - 160
1979892	Linuron	82.6	91.5	P/P	40 - 150
1979892	MCP	55.2	56.7	P/P	40 - 150
1979892	Primidone	132	132	P/P	40 - 150
1979892	Pyraclostrobin	75.7	73.6	P/P	40 - 150
1979892	Triclopyr	59.3	54.8	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P342825

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979892	Sucralose	69.9	75.2	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P342408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1978945	Fluridone	16.4	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P342539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979892	2,4-D	3.02	Spike	P	0 - 30
1979892	Acetaminophen	1.33	Spike	P	0 - 30
1979892	Bentazon	9.31	Spike	P	0 - 30
1979892	Carbamazepine	1.36	Spike	P	0 - 30
1979892	Diuron	9.25	Spike	P	0 - 30
1979892	Fenuron	5.30	Spike	P	0 - 30
1979892	Hydrocodone	0.429	Spike	P	0 - 30
1979892	Imazapyr	7.98	Spike	P	0 - 30
1979892	Imidacloprid	5.04	Spike	P	0 - 30
1979892	Linuron	10.2	Spike	P	0 - 30
1979892	MCP	2.68	Spike	P	0 - 30
1979892	Primidone	0.439	Spike	P	0 - 30
1979892	Pyraclostrobin	2.75	Spike	P	0 - 30
1979892	Triclopyr	7.82	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P342825

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979892	Sucralose	4.85	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: 1980255
Field Sample ID: G1SW0061

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	91.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	137	P	30 - 160
EPA 8321B	Carbamazepine-d10	115	P	30 - 160
EPA 8321B	Diuron-d6	94.4	P	30 - 160
EPA 8321B	Primidone-d5	125	P	30 - 160
EPA 8321B	Sucralose-d6	59.3	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A83110
Included Lab Sample IDs: 1980255

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.1	89.9	P/P	50 - 150
Acetaminophen	114	103	P/P	60 - 150
Bentazon	104	96.6	P/P	50 - 150
Carbamazepine	108	106	P/P	60 - 150
Diuron	121	122	P/P	60 - 150
Fenuron	108	103	P/P	60 - 150
Fluridone	119	112	P/P	60 - 160
Hydrocodone	120	104	P/P	60 - 150
Imazapyr	90.5	85.0	P/P	50 - 150
Imidacloprid	107	103	P/P	60 - 150
Linuron	118	129	P/P	60 - 150
MCPP	100	97.4	P/P	50 - 150
Primidone	118	106	P/P	60 - 150
Pyraclostrobin	117	111	P/P	60 - 150
Triclopyr	95.1	83.5	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A83192
Included Lab Sample IDs: 1980255

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	108	101	P/P	60 - 130

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 SMP	MS
					LCS	
EPA 8321B	2,4-D	64.8				3.02
	Acetaminophen	99.8	127	125		1.33
	Bentazon	68.3	37.7	33.9		9.31
	Carbamazepine	83.6	94.2	92.9		1.36
	Diuron	66.7	72.4	79.4		9.25
	Fenuron	114	101	106		5.30
	Fluridone	56.1	53.5	63.3		16.4
	Hydrocodone	118	139	140		0.429
	Imazapyr	73.4				7.98
	Imidacloprid	106	185	197		5.04
	Linuron	79.8	82.6	91.5		10.2
	MCPP	61.0	55.2	56.7		2.68
	Primidone	110	132	132		0.439
	Pyraclostrobin	66.6	75.7	73.6		2.75
	Sucralose	117	69.9	75.2		4.85
	Triclopyr	56.8	59.3	54.8		7.82

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1980255
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1980255

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	04/03/2018	04/04/2018 12:00	Hoor Shaik	04/05/2018 07:51	Julie Michelle Frank	1980255
	04/03/2018	04/04/2018 12:00	Hoor Shaik	04/05/2018 23:26	Julie Michelle Frank	1980255
	04/03/2018	04/04/2018 12:00	Hoor Shaik	04/06/2018 21:56	Julie Michelle Frank	1980255
	04/03/2018	04/05/2018 14:30	Julie Michelle Frank	04/10/2018 20:45	Julie Michelle Frank	1980255