

Chemical Analysis Report

NW-DIST-2018-08-09-02

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

Event Description: **Perdido/Chico Run**
Request ID: **RQ-2018-08-06-34**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 27-AUG-2018 17:25

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: Bridge Creek (Tidal Portion)

Collection Date/Time: 08/08/2018 10:50

Field ID: G5NW0129

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2015762	EPA 8321B	2,4-D	0.0020	U	ug/L	P349630	
		Bentazon	8.0E-04	U	ug/L	P349630	
		MCP	0.0020	U	ug/L	P349630	
		Triclopyr**	0.0040	U	ug/L	P349630	
		Imidacloprid	0.015		ug/L	P349630	
		Diuron	0.0034	I	ug/L	P349630	
		Pyraclostrobin**	0.0020	U	ug/L	P349630	
		Primidone**	0.0040	U	ug/L	P349630	
		Linuron	0.0040	U	ug/L	P349630	
		Acetaminophen**	0.0080	U	ug/L	P349630	
		Fenuron	0.016	U	ug/L	P349630	
		Imazapyr**	0.011	I	ug/L	P349630	
		Carbamazepine**	0.0011	I	ug/L	P349630	
		Fluridone**	4.0E-04	U	ug/L	P349630	
		Hydrocodone**	8.0E-04	U	ug/L	P349630	
		Naproxen**	0.0080	U	ug/L	P349630	
		Ibuprofen**	0.020	U	ug/L	P349630	
		Sucralose**	0.58		ug/L	P349850	

Sample Location: Perdido Bay (upper segment) off Double Point Collection Date/Time: 08/08/2018 11:10

Field ID: G5NW0127

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2015763	EPA 8321B	2,4-D	0.0036	I	ug/L	P349630	
		Bentazon	8.0E-04	U	ug/L	P349630	
		MCP	0.0020	U	ug/L	P349630	
		Triclopyr**	0.0040	U	ug/L	P349630	
		Imidacloprid	0.0032	I	ug/L	P349630	
		Diuron	0.0044	I	ug/L	P349630	
		Pyraclostrobin**	0.0020	U	ug/L	P349630	
		Primidone**	0.0040	U	ug/L	P349630	
		Linuron	0.0040	U	ug/L	P349630	
		Acetaminophen**	0.0080	U	ug/L	P349630	
		Fenuron	0.016	U	ug/L	P349630	
		Imazapyr**	0.017		ug/L	P349630	
		Carbamazepine**	0.0011	I	ug/L	P349630	
		Fluridone**	4.0E-04	U	ug/L	P349630	
		Hydrocodone**	8.0E-04	U	ug/L	P349630	
		Naproxen**	0.0080	U	ug/L	P349630	
		Ibuprofen**	0.020	U	ug/L	P349630	
		Sucralose**	0.51		ug/L	P349850	

Sample Location: Perdido Bay (upper segment) NW of Millview Rd.

Collection Date/Time: 08/08/2018 11:20

Field ID: G5NW0022

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2015764	EPA 8321B	2,4-D	0.0037	I	ug/L	P349630	
		Bentazon	8.0E-04	U	ug/L	P349630	
		MCP	0.0020	U	ug/L	P349630	
		Triclopyr**	0.0040	U	ug/L	P349630	
		Imidacloprid	0.0034	I	ug/L	P349630	
		Diuron	0.0042	I	ug/L	P349630	
		Pyraclostrobin**	0.0020	U	ug/L	P349630	
		Primidone**	0.0040	U	ug/L	P349630	
		Linuron	0.0040	U	ug/L	P349630	
		Acetaminophen**	0.0080	U	ug/L	P349630	
		Fenuron	0.016	U	ug/L	P349630	
		Imazapyr**	0.011	I	ug/L	P349630	
		Carbamazepine**	9.3E-04	I	ug/L	P349630	
		Fluridone**	4.0E-04	U	ug/L	P349630	
		Hydrocodone**	8.0E-04	U	ug/L	P349630	
		Naproxen**	0.0080	U	ug/L	P349630	
		Ibuprofen**	0.020	U	ug/L	P349630	
		Sucralose**	0.47		ug/L	P349850	

Sample Location: Perdido Bay 500M SE of Mouth Elevenmile

Collection Date/Time: 08/08/2018 11:35

Field ID: G5NW0128

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2015765	EPA 8321B	2,4-D	0.0043	I	ug/L	P349630	
		Bentazon	8.0E-04	U	ug/L	P349630	
		MCP	0.0020	U	ug/L	P349630	
		Triclopyr**	0.0040	U	ug/L	P349630	
		Imidacloprid	0.0039	I	ug/L	P349630	
		Diuron	0.0040	I	ug/L	P349630	
		Pyraclostrobin**	0.0020	U	ug/L	P349630	
		Primidone**	0.0040	U	ug/L	P349630	
		Linuron	0.0040	U	ug/L	P349630	
		Acetaminophen**	0.0080	U	ug/L	P349630	
		Fenuron	0.016	U	ug/L	P349630	
		Imazapyr**	0.010	I	ug/L	P349630	
		Carbamazepine**	0.0014	I	ug/L	P349630	
		Fluridone**	4.0E-04	U	ug/L	P349630	
		Hydrocodone**	8.0E-04	U	ug/L	P349630	
		Naproxen**	0.0080	U	ug/L	P349630	
		Ibuprofen**	0.020	U	ug/L	P349630	
		Sucralose**	0.63		ug/L	P349850	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P349630

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	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Ibuprofen	0.020	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
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P349850

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P349630

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	103		P	40 - 150
Acetaminophen	91.7		P	30 - 150
Bentazon	66.8		P	30 - 150
Carbamazepine	80.0		P	40 - 150
Diuron	74.5		P	40 - 150
Fenuron	96.3		P	40 - 150
Fluridone	77.1		P	40 - 150
Hydrocodone	87.1		P	40 - 150
Ibuprofen	64.0		P	40 - 150
Imazapyr	90.6		P	40 - 150
Imidacloprid	109		P	40 - 160
Linuron	60.8		P	40 - 150
MCP	90.9		P	40 - 150
Naproxen	59.3		P	40 - 150
Primidone	97.8		P	40 - 150
Pyraclostrobin	73.7		P	40 - 150
Triclopyr	89.1		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P349850

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	105		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P349630

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2014187	2,4-D	114	133	P/P	40 - 150
2014187	Acetaminophen	86.5	91.5	P/P	30 - 150
2014187	Bentazon	51.1	49.5	P/P	30 - 150
2014187	Carbamazepine	61.8	66.1	P/P	40 - 150
2014187	Diuron	54.3	56.3	P/P	40 - 150
2014187	Fenuron	72.8	72.7	P/P	40 - 150
2014187	Fluridone	67.8	72.4	P/P	40 - 150
2014187	Hydrocodone	75.6	74.0	P/P	40 - 150
2014187	Ibuprofen	68.7	77.3	P/P	40 - 150
2014187	Imazapyr	90.3	93.7	P/P	40 - 150
2014187	Imidacloprid	138	145	P/P	40 - 160
2014187	Linuron	55.3	58.4	P/P	40 - 150
2014187	MCP	112	130	P/P	40 - 150
2014187	Naproxen	65.3	71.7	P/P	40 - 150
2014187	Primidone	88.1	89.6	P/P	40 - 150
2014187	Pyraclostrobin	65.7	71.4	P/P	40 - 150
2014187	Triclopyr	141	144	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P349850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2015730	Sucralose	117	109	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P349630

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2014187	2,4-D	15.2	Spike	P	0 - 30
2014187	Acetaminophen	5.64	Spike	P	0 - 30
2014187	Bentazon	3.09	Spike	P	0 - 30
2014187	Carbamazepine	6.67	Spike	P	0 - 30
2014187	Diuron	3.55	Spike	P	0 - 30
2014187	Fenuron	0.173	Spike	P	0 - 30
2014187	Fluridone	6.58	Spike	P	0 - 30
2014187	Hydrocodone	2.18	Spike	P	0 - 30
2014187	Ibuprofen	11.7	Spike	P	0 - 30
2014187	Imazapyr	3.70	Spike	P	0 - 30
2014187	Imidacloprid	5.38	Spike	P	0 - 30
2014187	Linuron	5.47	Spike	P	0 - 30
2014187	MCPP	14.3	Spike	P	0 - 30
2014187	Naproxen	9.26	Spike	P	0 - 30
2014187	Primidone	1.73	Spike	P	0 - 30
2014187	Pyraclostrobin	8.43	Spike	P	0 - 30
2014187	Triclopyr	2.08	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P349850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2015730	Sucralose	5.90	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: 2015762

Field Sample ID: G5NW0129

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	86.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	94.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	72.4	P	30 - 160
EPA 8321B	Diuron-d6	66.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	51.8	P	30 - 160
EPA 8321B	Primidone-d5	92.4	P	30 - 160
EPA 8321B	Sucralose-d6	92.7	P	40 - 160

Lab Sample ID: 2015763

Field Sample ID: G5NW0127

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	107	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	72.0	P	30 - 160
EPA 8321B	Diuron-d6	68.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	54.6	P	30 - 160
EPA 8321B	Primidone-d5	86.9	P	30 - 160
EPA 8321B	Sucralose-d6	94.5	P	40 - 160

Lab Sample ID: 2015764

Field Sample ID: G5NW0022

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	71.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	96.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	70.4	P	30 - 160
EPA 8321B	Diuron-d6	62.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	47.0	P	30 - 160
EPA 8321B	Primidone-d5	93.6	P	30 - 160
EPA 8321B	Sucralose-d6	98.4	P	40 - 160

Lab Sample ID: 2015765

Field Sample ID: G5NW0128

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	93.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	93.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	70.6	P	30 - 160
EPA 8321B	Diuron-d6	63.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	61.6	P	30 - 160
EPA 8321B	Primidone-d5	88.4	P	30 - 160
EPA 8321B	Sucralose-d6	88.9	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A85816

Included Lab Sample IDs: 2015762, 2015763, 2015764, 2015765

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	83.0	93.7	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A85823

Included Lab Sample IDs: 2015762, 2015763, 2015764, 2015765

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	123	110	P/P	50 - 150
Bentazon	103	86.8	P/P	50 - 160
Ibuprofen	127	91.3	P/P	50 - 160
MCP	101	108	P/P	50 - 150
Naproxen	76.9	66.7	P/P	50 - 160
Triclopyr	113	109	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A85967

Included Lab Sample IDs: 2015762, 2015763, 2015764, 2015765

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	108	107	P/P	60 - 150
Carbamazepine	112	113	P/P	60 - 150
Diuron	98.9	100	P/P	60 - 150
Fenuron	105	104	P/P	60 - 150
Fluridone	98.5	102	P/P	60 - 160
Hydrocodone	100	103	P/P	60 - 150
Imazapyr	89.2	80.2	P/P	50 - 150
Imidacloprid	113	109	P/P	60 - 150
Linuron	96.9	97.4	P/P	60 - 150
Primidone	99.0	99.6	P/P	60 - 150
Pyraclostrobin	97.5	96.3	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		Precision SMP	MS
			LCS			
EPA 8321B	2,4-D	103	114	133		15.2
	Acetaminophen	91.7	86.5	91.5		5.64
	Bentazon	66.8	51.1	49.5		3.09
	Carbamazepine	80.0	61.8	66.1		6.67
	Diuron	74.5	54.3	56.3		3.55
	Fenuron	96.3	72.8	72.7		0.173
	Fluridone	77.1	67.8	72.4		6.58
	Hydrocodone	87.1	75.6	74.0		2.18
	Ibuprofen	64.0	68.7	77.3		11.7
	Imazapyr	90.6	90.3	93.7		3.70
	Imidacloprid	109	138	145		5.38
	Linuron	60.8	55.3	58.4		5.47
	MCPP	90.9	112	130		14.3
	Naproxen	59.3	65.3	71.7		9.26
	Primidone	97.8	88.1	89.6		1.73
	Pyraclostrobin	73.7	65.7	71.4		8.43
	Sucralose	105	117	109		5.90
	Triclopyr	89.1	141	144		2.08

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2015762, 2015763, 2015764, 2015765

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	08/09/2018	08/09/2018 14:00	Hoor Shaik	08/12/2018 08:49	Juyoung Kim	2015762
	08/09/2018	08/09/2018 14:00	Hoor Shaik	08/12/2018 09:23	Juyoung Kim	2015763
	08/09/2018	08/09/2018 14:00	Hoor Shaik	08/12/2018 09:58	Juyoung Kim	2015764
	08/09/2018	08/09/2018 14:00	Hoor Shaik	08/12/2018 10:33	Juyoung Kim	2015765
	08/09/2018	08/09/2018 14:00	Hoor Shaik	08/14/2018 19:06	Juyoung Kim	2015762
	08/09/2018	08/09/2018 14:00	Hoor Shaik	08/14/2018 19:41	Juyoung Kim	2015763
	08/09/2018	08/09/2018 14:00	Hoor Shaik	08/14/2018 20:16	Juyoung Kim	2015764
	08/09/2018	08/09/2018 14:00	Hoor Shaik	08/14/2018 20:50	Juyoung Kim	2015765
	08/09/2018	08/09/2018 15:30	Mohammad Ghaffari	08/11/2018 22:01	Mohammad Ghaffari	2015762
	08/09/2018	08/09/2018 15:30	Mohammad Ghaffari	08/11/2018 22:16	Mohammad Ghaffari	2015763
	08/09/2018	08/09/2018 15:30	Mohammad Ghaffari	08/11/2018 22:30	Mohammad Ghaffari	2015764
	08/09/2018	08/09/2018 15:30	Mohammad Ghaffari	08/11/2018 22:45	Mohammad Ghaffari	2015765