

Chemical Analysis Report

SW-DIST-2020-07-31-01

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

Event Description: **Bear Creek Tidal**
Request ID: **RQ-2020-07-27-54**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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Date Certified: 14-AUG-2020 14:45



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 by the Florida Department of Health Environmental Laboratory Certification Program 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: Bear Creek @ Gulf Port Blvd

Collection Date/Time: 07/30/2020 13:51

Field ID: G5SW0051

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2187679	EPA 8321B	2,4-D	0.019		ug/L	P385439	
		Acesulfame K**	0.10	UJ	ug/L	P385502	SUR
		AMPA**	1.0	U	ug/L	P385502	
		Sucralose**	0.29	I	ug/L	P385502	
		Acetaminophen**	0.0080	U	ug/L	P385439	
		Acetamiprid**	0.0020	U	ug/L	P385439	
		Endothall**	0.25	UJ	ug/L	P385502	SUR
		Glufosinate**	1.0	U	ug/L	P385502	
		Glyphosate**	1.0	U	ug/L	P385502	
		Afidopyropen**	0.0020	U	ug/L	P385439	
		Bentazon	0.012		ug/L	P385439	
		Benzovindiflupyr**	0.0020	U	ug/L	P385439	
		Carbamazepine**	8.0E-04	U	ug/L	P385439	
		Clothianidin**	0.0045	I	ug/L	P385439	
		Dinotefuran**	0.0020	U	ug/L	P385439	
		Diuron	0.0020	U	ug/L	P385439	
		Fenuron	0.016	U	ug/L	P385439	
		Fluridone**	0.0029	I	ug/L	P385439	
		Imazapyr**	0.015	I	ug/L	P385439	
		Hydrocodone**	0.0020	U	ug/L	P385439	
		Ibuprofen**	0.020	U	ug/L	P385439	
		Imidacloprid	0.011		ug/L	P385439	
		Linuron	0.0040	U	ug/L	P385439	
		Mandestrobin**	0.0020	U	ug/L	P385439	
		MCPP	0.0037	I	ug/L	P385439	
		Naproxen**	0.0080	U	ug/L	P385439	
		Primidone**	0.018		ug/L	P385439	
		Pyraclostrobin**	0.0020	U	ug/L	P385439	
		Thiamethoxam**	0.0020	U	ug/L	P385439	
		Tolfenpyrad**	0.0020	U	ug/L	P385439	
		Triclopyr**	0.0040	U	ug/L	P385439	

Ref. Method and Comment:

EPA 8321B: MDL for some parameters elevated due to matrix interference. Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 8321B: MDL elevated due to matrix interference.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P385439

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	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
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P385502

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P385439

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	112		P	30 - 160
Acetaminophen	85.5		P	30 - 160
Acetamiprid	77.6		P	30 - 160
Afidopyropen	72.0		P	30 - 160
Bentazon	67.8		P	30 - 160
Benzovindiflupyr	68.9		P	30 - 160
Carbamazepine	62.0		P	30 - 160
Clothianidin	74.2		P	30 - 160
Dinotefuran	91.8		P	30 - 160
Diuron	46.4		P	30 - 160
Fenuron	89.3		P	30 - 160
Fluridone	80.7		P	30 - 160
Hydrocodone	84.4		P	30 - 160
Ibuprofen	75.9		P	30 - 160
Imazapyr	89.5		P	30 - 160
Imidacloprid	101		P	30 - 160
Linuron	57.8		P	30 - 160
Mandestrobin	77.1		P	30 - 160
MCPP	121		P	30 - 160
Naproxen	67.9		P	30 - 160
Primidone	75.2		P	30 - 160
Pyraclostrobin	71.0		P	30 - 160
Thiamethoxam	79.3		P	30 - 160
Tolfenpyrad	48.7		P	30 - 160
Triclopyr	90.6		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P385502

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	104		P	40 - 150
AMPA	97.5		P	40 - 150
Endothall	93.4		P	40 - 150
Glufosinate	96.6		P	40 - 150
Glyphosate	96.4		P	40 - 140
Sucralose	96.0		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P385439

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187411	2,4-D	121	128	P/P	30 - 160
2187411	Acetaminophen	115	117	P/P	30 - 160
2187411	Acetamiprid	93.9	83.9	P/P	30 - 160
2187411	Afidopyropen	52.8	47.0	P/P	30 - 160
2187411	Bentazon	54.3	53.7	P/P	30 - 160
2187411	Benzovindiflupyr	72.9	68.8	P/P	30 - 160
2187411	Carbamazepine	63.8	61.2	P/P	30 - 160
2187411	Clothianidin	95.3	93.1	P/P	30 - 160
2187411	Dinotefuran	122	116	P/P	30 - 160
2187411	Diuron	54.2	52.4	P/P	30 - 160
2187411	Fenuron	92.6	93.4	P/P	30 - 160
2187411	Fluridone	82.0	82.2	P/P	30 - 160
2187411	Hydrocodone	63.0	78.8	P/P	30 - 160
2187411	Ibuprofen	81.9	71.5	P/P	30 - 160
2187411	Imazapyr	119	106	P/P	30 - 160
2187411	Imidacloprid	156	150	P/P	30 - 160
2187411	Linuron	69.9	60.9	P/P	30 - 160
2187411	Mandestrobin	80.5	79.8	P/P	30 - 160
2187411	MCP	123	127	P/P	30 - 160
2187411	Naproxen	52.9	54.6	P/P	30 - 160
2187411	Primidone	97.6	91.3	P/P	30 - 160
2187411	Pyraclostrobin	74.8	74.5	P/P	30 - 160
2187411	Thiamethoxam	111	109	P/P	30 - 160
2187411	Tolfenpyrad	48.3	47.1	P/P	30 - 160
2187411	Triclopyr	97.6	112	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P385502

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187277	Acesulfame K	88.6	75.7	P/P	40 - 150
2187277	AMPA	102	108	P/P	40 - 150
2187277	Endothall	95.0	98.5	P/P	40 - 150
2187277	Glufosinate	91.8	86.6	P/P	40 - 150
2187277	Glyphosate	91.9	87.8	P/P	40 - 140
2187277	Sucralose	52.6	51.6	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P385439

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187411	2,4-D	5.56	Spike	P	0 - 30
2187411	Acetaminophen	2.23	Spike	P	0 - 30
2187411	Acetamiprid	11.2	Spike	P	0 - 30
2187411	Afidopyropen	11.5	Spike	P	0 - 30
2187411	Bentazon	1.13	Spike	P	0 - 30
2187411	Benzovindiflupyr	5.67	Spike	P	0 - 30
2187411	Carbamazepine	4.24	Spike	P	0 - 30
2187411	Clothianidin	2.32	Spike	P	0 - 30
2187411	Dinotefuran	4.87	Spike	P	0 - 30
2187411	Diuron	3.45	Spike	P	0 - 30
2187411	Fenuron	0.831	Spike	P	0 - 30
2187411	Fluridone	0.245	Spike	P	0 - 30
2187411	Hydrocodone	22.2	Spike	P	0 - 30
2187411	Ibuprofen	13.6	Spike	P	0 - 30
2187411	Imazapyr	11.7	Spike	P	0 - 30
2187411	Imidacloprid	4.00	Spike	P	0 - 30
2187411	Linuron	13.8	Spike	P	0 - 30
2187411	Mandestrobin	0.971	Spike	P	0 - 30
2187411	MCPP	3.34	Spike	P	0 - 30
2187411	Naproxen	3.19	Spike	P	0 - 30
2187411	Primidone	6.70	Spike	P	0 - 30
2187411	Pyraclostrobin	0.364	Spike	P	0 - 30
2187411	Thiamethoxam	1.61	Spike	P	0 - 30
2187411	Tolfenpyrad	2.65	Spike	P	0 - 30
2187411	Triclopyr	14.0	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P385502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187277	Acesulfame K	15.7	Spike	P	0 - 30
2187277	AMPA	5.76	Spike	P	0 - 30
2187277	Endothall	3.58	Spike	P	0 - 30
2187277	Glufosinate	5.78	Spike	P	0 - 30
2187277	Glyphosate	4.62	Spike	P	0 - 30
2187277	Sucralose	1.75	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2187679

Field Sample ID: G5SW0051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	104	P	30 - 160
EPA 8321B	Acetaminophen-d4	84.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	57.2	P	30 - 160
EPA 8321B	Diuron-d6	53.7	P	30 - 160
EPA 8321B	Endothall-d6	389	F	30 - 160
EPA 8321B	Endothall-d6	389	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	34.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	34.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	70.3	P	30 - 160
EPA 8321B	Primidone-d5	76.3	P	30 - 160
EPA 8321B	Sucralose-d6	62.9	P	30 - 160
EPA 8321B	Sucralose-d6	62.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A100248
 Included Lab Sample IDs: 2187679

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	92.2	89.6	P/P	60 - 160
Glufosinate	94.7	89.8	P/P	60 - 160
Glyphosate	95.7	93.6	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A100280
 Included Lab Sample IDs: 2187679

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	89.8	92.6	P/P	60 - 160
Endothall	99.2	100	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A100283
 Included Lab Sample IDs: 2187679

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	104	104	P/P	50 - 150
Acetaminophen	148	145	P/P	60 - 160
Acetamiprid	134	133	P/P	50 - 150
Afidopyropen	115	125	P/P	50 - 150
Bentazon	86.8	94.2	P/P	50 - 160
Benzovindiflupyr	115	112	P/P	50 - 150
Carbamazepine	133	131	P/P	60 - 150
Clothianidin	127	129	P/P	60 - 150
Dinotefuran	116	122	P/P	50 - 150
Diuron	119	118	P/P	60 - 160
Fenuron	125	123	P/P	60 - 150
Fluridone	108	114	P/P	60 - 160
Hydrocodone	127	125	P/P	60 - 150
Ibuprofen	104	116	P/P	50 - 160
Imazapyr	105	99.3	P/P	50 - 150
Imidacloprid	137	138	P/P	60 - 150
Linuron	118	115	P/P	60 - 150
Mandestrobin	123	124	P/P	50 - 150
MCPP	110	117	P/P	50 - 150
Naproxen	79.5	61.1	P/P	50 - 160
Primidone	117	128	P/P	60 - 150
Pyraclostrobin	103	107	P/P	60 - 150
Thiamethoxam	133	136	P/P	50 - 150
Tolfenpyrad	110	107	P/P	60 - 150
Triclopyr	93.8	97.1	P/P	50 - 150

Reference Method: EPA 8321B
 Run ID: A100390
 Included Lab Sample IDs: 2187679

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	101	99.2	P/P	60 - 160

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	112	128	121		5.56
	Acesulfame K	104	88.6	75.7		15.7
	Acetaminophen	85.5	115	117		2.23
	Acetamiprid	77.6	93.9	83.9		11.2
	Afidopyropen	72.0	52.8	47.0		11.5
	AMPA	97.5	102	108		5.76
	Bentazon	67.8	53.7	54.3		1.13
	Benzovindiflupyr	68.9	72.9	68.8		5.67
	Carbamazepine	62.0	63.8	61.2		4.24
	Clothianidin	74.2	95.3	93.1		2.32
	Dinotefuran	91.8	122	116		4.87
	Diuron	46.4	54.2	52.4		3.45
	Endothall	93.4	95.0	98.5		3.58
	Fenuron	89.3	92.6	93.4		0.831
	Fluridone	80.7	82.0	82.2		0.245
	Glufosinate	96.6	91.8	86.6		5.78
	Glyphosate	96.4	91.9	87.8		4.62
	Hydrocodone	84.4	63.0	78.8		22.2
	Ibuprofen	75.9	71.5	81.9		13.6
	Imazapyr	89.5	106	119		11.7
	Imidacloprid	101	156	150		4.00
	Linuron	57.8	69.9	60.9		13.8
	Mandestrobin	77.1	80.5	79.8		0.971
	MCPP	121	127	123		3.34
	Naproxen	67.9	54.6	52.9		3.19
	Primidone	75.2	97.6	91.3		6.70
	Pyraclostrobin	71.0	74.8	74.5		0.364
	Sucralose	96.0	52.6	51.6		1.75
	Thiamethoxam	79.3	111	109		1.61
	Tolfenpyrad	48.7	48.3	47.1		2.65
	Triclopyr	90.6	112	97.6		14.0

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2187679
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2187679

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	07/31/2020	08/03/2020 11:30	Rebecca Ware	08/03/2020 16:03	Rebecca Ware	2187679
	07/31/2020	08/03/2020 11:30	Rebecca Ware	08/04/2020 14:12	Rebecca Ware	2187679
	07/31/2020	08/03/2020 11:30	Rebecca Ware	08/11/2020 09:21	Rebecca Ware	2187679
	07/31/2020	08/04/2020 09:00	Hoor Shaik	08/05/2020 20:46	Juyoung Kim	2187679