

Chemical Analysis Report

SW-DIST-2019-02-13-02

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

Event Description: **McKay Creek Pinellas Site#27-11**

Request ID: **RQ-2019-02-11-31**

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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Date Certified: 26-FEB-2019 12:05



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: McKAY CREEK @ BLUFF DR. (PC27-11)

Collection Date/Time: 02/12/2019 13:42

Field ID: G5SW0145

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2062228	EPA 8321B	2,4-D	0.0020	U	ug/L	P358820	
		Acesulfame K**	0.10	U	ug/L	P358749	
		AMPA**	0.10	U	ug/L	P358749	
		Sucralose**	0.66		ug/L	P358749	
		Acetaminophen**	0.0080	U	ug/L	P358820	
		Endothall**	0.25	U	ug/L	P358749	MS
		Glufosinate**	0.10	U	ug/L	P358749	
		Bentazon	0.036		ug/L	P358820	
		Glyphosate**	0.14	I	ug/L	P358749	
		Carbamazepine**	8.0E-04	U	ug/L	P358820	
		Diuron	0.0020	U	ug/L	P358820	
		Fenuron	0.016	U	ug/L	P358820	
		Imazapyr**	0.038		ug/L	P358820	
		Imidacloprid	0.022		ug/L	P358820	MS
		Linuron	0.0040	U	ug/L	P358820	
		MCPP	0.0023	I	ug/L	P358820	
		Primidone**	0.0046	I	ug/L	P358820	
		Pyraclostrobin**	0.0020	U	ug/L	P358820	
		Triclopyr**	0.0040	U	ug/L	P358820	
		Fluridone**	0.049		ug/L	P358820	
		Hydrocodone**	0.0020	U	ug/L	P358820	
		Naproxen**	0.0080	U	ug/L	P358820	
		Ibuprofen**	0.020	U	ug/L	P358820	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P358749

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

Reference Method: EPA 8321B
Batch ID: P358820

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	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
MCPP	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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P358749

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	112		P	40 - 150
AMPA	103		P	40 - 150
Endothall	100		P	40 - 150
Glufosinate	94.1		P	40 - 150
Glyphosate	107		P	40 - 140
Sucralose	99.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P358820

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	74.1		P	40 - 150
Acetaminophen	99.9		P	30 - 150
Bentazon	79.2		P	30 - 150
Carbamazepine	85.4		P	40 - 150
Diuron	76.2		P	40 - 150
Fenuron	116		P	40 - 150
Fluridone	111		P	40 - 150
Hydrocodone	99.0		P	40 - 150
Ibuprofen	104		P	40 - 150
Imazapyr	89.6		P	40 - 150
Imidacloprid	101		P	40 - 150
Linuron	75.1		P	40 - 150
MCPP	113		P	40 - 150
Naproxen	79.8		P	40 - 150
Primidone	107		P	40 - 150
Pyraclostrobin	82.0		P	40 - 150
Triclopyr	75.7		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P358749

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2061239	Acesulfame K	71.3	72.6	P/P	40 - 150
2061239	Endothall	25.1	20.9	F/F	40 - 150
2061239	Sucralose	101	109	P/P	40 - 150
2061887	AMPA	94.0	92.8	P/P	40 - 150
2061887	Glufosinate	80.5	85.4	P/P	40 - 150
2061887	Glyphosate	89.8	89.1	P/P	40 - 140

Reference Method: EPA 8321B
 Batch ID: P358820

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062398	2,4-D	88.2	91.8	P/P	40 - 150
2062398	Acetaminophen	113	126	P/P	30 - 150
2062398	Bentazon	60.0	65.0	P/P	30 - 150
2062398	Carbamazepine	80.9	88.6	P/P	40 - 150
2062398	Diuron	72.3	79.6	P/P	40 - 150
2062398	Fenuron	101	112	P/P	40 - 150
2062398	Fluridone	91.6	104	P/P	40 - 150
2062398	Hydrocodone	74.6	85.0	P/P	40 - 150
2062398	Ibuprofen	89.2	107	P/P	40 - 150
2062398	Imazapyr	118	122	P/P	40 - 150
2062398	Imidacloprid	174	191	F/F	40 - 150
2062398	Linuron	77.3	81.9	P/P	40 - 150
2062398	MCP	117	131	P/P	40 - 150
2062398	Naproxen	98.6	81.2	P/P	40 - 150
2062398	Primidone	118	139	P/P	40 - 150
2062398	Pyraclostrobin	81.8	93.4	P/P	40 - 150
2062398	Triclopyr	60.7	68.3	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P358749

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2061239	Acesulfame K	1.72	Spike	P	0 - 30
2061239	Endothall	18.5	Spike	P	0 - 30
2061239	Sucralose	5.41	Spike	P	0 - 30
2061887	AMPA	1.37	Spike	P	0 - 30
2061887	Glufosinate	5.80	Spike	P	0 - 30
2061887	Glyphosate	0.769	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P358820

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062398	2,4-D	3.99	Spike	P	0 - 30
2062398	Acetaminophen	10.8	Spike	P	0 - 30
2062398	Bentazon	7.94	Spike	P	0 - 30
2062398	Carbamazepine	9.13	Spike	P	0 - 30
2062398	Diuron	9.56	Spike	P	0 - 30
2062398	Fenuron	10.2	Spike	P	0 - 30
2062398	Fluridone	12.4	Spike	P	0 - 30
2062398	Hydrocodone	13.0	Spike	P	0 - 30
2062398	Ibuprofen	17.7	Spike	P	0 - 30
2062398	Imazapyr	3.66	Spike	P	0 - 30
2062398	Imidacloprid	9.12	Spike	P	0 - 30
2062398	Linuron	5.88	Spike	P	0 - 30
2062398	MCP	11.3	Spike	P	0 - 30
2062398	Naproxen	19.3	Spike	P	0 - 30
2062398	Primidone	16.3	Spike	P	0 - 30
2062398	Pyraclostrobin	13.3	Spike	P	0 - 30
2062398	Triclopyr	11.8	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: 2062228
Field Sample ID: G5SW0145

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	88.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	86.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	66.8	P	30 - 160
EPA 8321B	Diuron-d6	62.7	P	30 - 160
EPA 8321B	Endothall-d6	121	P	40 - 160
EPA 8321B	Endothall-d6	121	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	46.9	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	46.9	P	40 - 160
EPA 8321B	Ibuprofen-d3	93.2	P	30 - 160
EPA 8321B	Primidone-d5	112	P	30 - 160
EPA 8321B	Sucralose-d6	119	P	40 - 160
EPA 8321B	Sucralose-d6	119	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A89461
Included Lab Sample IDs: 2062228

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	97.5	98.2	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A89502
Included Lab Sample IDs: 2062228

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.6	125	P/P	50 - 150
Acetaminophen	114	120	P/P	60 - 160
Bentazon	92.5	85.1	P/P	50 - 160
Carbamazepine	101	90.8	P/P	60 - 150
Diuron	101	101	P/P	60 - 150
Fenuron	99.3	101	P/P	60 - 150
Fluridone	101	103	P/P	60 - 160
Hydrocodone	98.8	97.5	P/P	60 - 150
Ibuprofen	113	109	P/P	50 - 160
Imazapyr	83.3	85.5	P/P	50 - 150
Imidacloprid	96.9	94.6	P/P	60 - 150
Linuron	105	99.2	P/P	60 - 150
MCPP	90.6	93.5	P/P	50 - 150
Naproxen	76.2	113	P/P	50 - 160
Primidone	102	91.6	P/P	60 - 150
Pyraclostrobin	119	115	P/P	60 - 150
Triclopyr	96.4	91.9	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A89578
Included Lab Sample IDs: 2062228

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	99.0	97.7	P/P	60 - 160
Glufosinate	98.3	99.2	P/P	60 - 160
Glyphosate	113	112	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A89585
Included Lab Sample IDs: 2062228

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	104	108	P/P	60 - 160
Endothall	90.1	103	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		Precision LCS	SMP	MS
EPA 8321B	2,4-D	74.1	88.2	91.8			3.99
	Acesulfame K	112	71.3	72.6			1.72
	Acetaminophen	99.9	113	126			10.8
	AMPA	103	94.0	92.8			1.37
	Bentazon	79.2	60.0	65.0			7.94
	Carbamazepine	85.4	80.9	88.6			9.13
	Diuron	76.2	72.3	79.6			9.56
	Endothall	100	25.1	20.9			18.5
	Fenuron	116	101	112			10.2
	Fluridone	111	91.6	104			12.4
	Glufosinate	94.1	80.5	85.4			5.80
	Glyphosate	107	89.8	89.1			0.769
	Hydrocodone	99.0	74.6	85.0			13.0
	Ibuprofen	104	89.2	107			17.7
	Imazapyr	89.6	118	122			3.66
	Imidacloprid	101	174	191			9.12
	Linuron	75.1	77.3	81.9			5.88
	MCPP	113	117	131			11.3
	Naproxen	79.8	98.6	81.2			19.3
	Primidone	107	118	139			16.3
	Pyraclostrobin	82.0	81.8	93.4			13.3
	Sucralose	99.4	101	109			5.41
	Triclopyr	75.7	60.7	68.3			11.8

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2062228
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2062228

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	02/13/2019	02/13/2019 14:30	Rebecca Ware	02/13/2019 22:44	Mohammad Ghaffari	2062228
	02/13/2019	02/13/2019 14:30	Rebecca Ware	02/14/2019 16:22	Mohammad Ghaffari	2062228
	02/13/2019	02/13/2019 14:30	Rebecca Ware	02/16/2019 16:41	Mohammad Ghaffari	2062228
	02/13/2019	02/15/2019 10:00	Hoor Shaik	02/21/2019 00:32	Juyoung Kim	2062228