

Biological Analysis Report

SW-DIST-2018-07-06-01

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

Event Description: **Joe's Crk-Pinellas co.**
Request ID: **RQ-2018-06-25-04**
Customer: **SW-DIST**
Project ID: **SMP**

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Date Certified: 22-AUG-2018 10:19



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: Molecular.

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: Joe's Creek @ 62nd & 42nd

Collection Date/Time: 07/05/2018 10:13

Field ID: G5SW0137

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2005027	SOP-PCR-1.0	HF183-qPCR**	94	U	GEU/100 mL	P349885	
	SOP-PCR-1.2	GULL2-qPCR**	5.6E+03	U	TSC/100 mL	P349885	
	SOP-PCR-1.3	GFD-purified-qPCR**	120	IJ	TSC/100 mL	P350112	LCS, RPD
	SOP-PCR-1.4	BacR-qPCR**	1.0E+03	U	TSC/100 mL	P349885	LCS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Ref. Method and Comment:

SOP-PCR-1.2: Precision data unavailable for Analysis Batch A85870

SOP-PCR-1.3: Duplicate was analyzed and result is 110 U. Quality control failure(s) observed. See QA report for details.

SOP-PCR-1.4: Precision data unavailable for Analysis Batch A85857

SOP-PCR-4.0: Bacterial results for threshold obtained from county lab.

Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.0

Batch ID: P349885

Component	Result	Code	Units
HF183-qPCR	280	U	GEU/100 mL

Reference Method: SOP-PCR-1.2

Batch ID: P349885

Component	Result	Code	Units
GULL2-qPCR	1.7E+04	U	TSC/100 mL

Reference Method: SOP-PCR-1.3

Batch ID: P350112

Component	Result	Code	Units
GFD-purified-qPCR	340	U	TSC/100 mL

Reference Method: SOP-PCR-1.4

Batch ID: P349885

Component	Result	Code	Units
BacR-qPCR	3.0E+03	U	TSC/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.0

Batch ID: P349885

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	92.9	124	P/P	50 - 175

Reference Method: SOP-PCR-1.2

Batch ID: P349885

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	108	92.5	P/P	50 - 300

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.3
Batch ID: P350112

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	128	42.2	P/F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P349885

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	104	233	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P349885

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2005027	HF183-qPCR	76.7		P	50 - 175
2012175	HF183-qPCR	80.8	90.9	P/P	50 - 175
2012177	HF183-qPCR	106		P	50 - 175
2012178	HF183-qPCR	93.1		P	50 - 175
2012391	HF183-qPCR	90.8		P	50 - 175
2012392	HF183-qPCR	96.0		P	50 - 175
2012393	HF183-qPCR	86.8		P	50 - 175
2016356	HF183-qPCR	91.0		P	50 - 175
2016357	HF183-qPCR	90.5		P	50 - 175
2016358	HF183-qPCR	87.1		P	50 - 175
2016359	HF183-qPCR	81.2		P	50 - 175
2016360	HF183-qPCR	91.6		P	50 - 175
2016361	HF183-qPCR	91.3		P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P349885

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2005027	GULL2-qPCR	80.2		P	50 - 300
2012391	GULL2-qPCR	85.1		P	50 - 300
2012392	GULL2-qPCR	106		P	50 - 300
2012393	GULL2-qPCR	92.3		P	50 - 300
2016356	GULL2-qPCR	107		P	50 - 300
2016357	GULL2-qPCR	122		P	50 - 300
2016358	GULL2-qPCR	103		P	50 - 300
2016359	GULL2-qPCR	95.5		P	50 - 300
2016360	GULL2-qPCR	112		P	50 - 300
2016361	GULL2-qPCR	127		P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P350112

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2005027	GFD-purified-qPCR	88.4	51.4	P/P	50 - 175
2007462	GFD-purified-qPCR	82.1		P	50 - 175
2007463	GFD-purified-qPCR	81.6		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.3
Batch ID: P350112

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2008534	GFD-purified-qPCR	81.2		P	50 - 175
2012391	GFD-purified-qPCR	101		P	50 - 175
2012392	GFD-purified-qPCR	148		P	50 - 175
2012393	GFD-purified-qPCR	116		P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P349885

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2005027	BacR-qPCR	74.3		P	50 - 175
2012391	BacR-qPCR	85.2		P	50 - 175
2012392	BacR-qPCR	109		P	50 - 175
2012393	BacR-qPCR	70.0		P	50 - 175

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P349885

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2012175	HF183-qPCR	11.7	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
Batch ID: P350112

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2005027	GFD-purified-qPCR	52.9	Spike	F	0 - 25

* 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: 2005027
Field Sample ID: G5SW0137

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	101	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	106	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	97.2	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision	MS
				LCS SMP	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
SOP-PCR-1.0	HF183-qPCR	124	92.9	80.8	90.9	106			11.7
SOP-PCR-1.2	GULL2-qPCR	92.5	108	85.1	106	92.3			
SOP-PCR-1.3	GFD-purified-qPCR	42.2	128	88.4	51.4	101			52.9
SOP-PCR-1.4	BacR-qPCR	233	104	85.2	109	70.0			
				74.3					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2005027
SOP-PCR-1.2 / E31780	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2005027
SOP-PCR-1.3 / E31780	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2005027
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2005027
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	2005027

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SOP-PCR-1.0	07/06/2018	07/06/2018 12:35	Sarah Menz	08/13/2018 15:54	Mailin Lopez	2005027
SOP-PCR-1.2	07/06/2018	07/06/2018 12:35	Sarah Menz	08/14/2018 17:03	Mailin Lopez	2005027
SOP-PCR-1.3	07/06/2018	07/06/2018 12:35	Mailin Lopez	08/16/2018 11:54	Sarah Menz	2005027
SOP-PCR-1.4	07/06/2018	07/06/2018 12:35	Sarah Menz	08/14/2018 09:07	Mailin Lopez	2005027
SOP-PCR-4.0	07/06/2018	07/06/2018 12:35	Angela Smith	08/13/2018 09:19	Puja Jasrotia	2005027