

Biological Analysis Report

SO-DIST-2024-01-25-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Overflow Analyses Performed By:
Sanders Laboratories
10090 Bavaria Road
Ft. Myers, FL 33913
DOH Accreditation E85457

Event Description: **2024 SMP: Desoto Branches**
Request ID: **RQ-2024-01-29-21**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
Attn: Nicole Reistad

For additional information please contact
Cheryl Swanson - Administrator
Sarah Menz, Ph.D. - Bench Biology & Aquatic
Toxicity
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Certified by: Puja Jasrotia, Environmental Administrator

Date Certified: 08-MAR-2024 09:24



NON-CONFORMANCE REPORT INCLUDED

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 groups are included in this report: Chlorophyll/Grain Size/BOD, Molecular and Overflow.

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: BRANDY BRANCH AT SR 70

Collection Date/Time: 01/24/2024 09:00

Field ID: G3SD0083

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2463154	SM 10150 B	Chlorophyll-a, Corrected	1.9	U	ug/L	P440850	
		Phaeophytin-a	2.1	U	ug/L	P440850	
		Chlorophyll-a, Uncorrected	2.3	I	ug/L	P440850	
2463166	SOP-PCR-1.0	HF183-qPCR**	1.1E+03	U	TSC/100 mL	P440262	
	SOP-PCR-1.4	BacR-qPCR**	6.99E+04		TSC/100 mL	P440262	
	SOP-PCR-1.5	DG3-qPCR**	860	U	TSC/100 mL	P440262	
2463167	Colilert-18	Escherichia Coli-Quanti-Tray	411		MPN/100 mL		

Ref. Method and Comment:
SM 10150 B: Precision data is not available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for available precision data.

Sample Location: BUZZARD ROOST BRANCH AT SR70

Collection Date/Time: 01/24/2024 09:30

Field ID: G3SD0173

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2463156	SM 10150 B	Chlorophyll-a, Corrected	8.1		ug/L	P440850	
		Phaeophytin-a	2.2	I	ug/L	P440850	
		Chlorophyll-a, Uncorrected	9.8		ug/L	P440850	
2463168	Colilert-18	Escherichia Coli-Quanti-Tray	579		MPN/100 mL		

Ref. Method and Comment:
SM 10150 B: Precision data is not available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for available precision data.

Sample Location: BUD SLOUGH CLAY GULLY RD

Collection Date/Time: 01/24/2024 10:25

Field ID: G3SD0243

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2463157	SM 10150 B	Chlorophyll-a, Corrected	2.1	U	ug/L	P440850	
		Phaeophytin-a	2.2	U	ug/L	P440850	
		Chlorophyll-a, Uncorrected	1.5	U	ug/L	P440850	
2463169	Colilert-18	Escherichia Coli-Quanti-Tray	93.3		MPN/100 mL		

Ref. Method and Comment:
SM 10150 B: Precision data is not available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for available precision data.

Sample Location: BUD SLOUGH SUGAR BOWL RD

Collection Date/Time: 01/24/2024 10:40

Field ID: G3SD0244

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2463171	Colilert-18	Escherichia Coli-Quanti-Tray	83.3		MPN/100 mL		

Sample Location: LAKE MYAKKA (LOWER) AT MIDDLE

Collection Date/Time: 01/24/2024 11:50

Field ID: G3SD0107

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2463158	SM 10150 B	Chlorophyll-a, Corrected	8.8		ug/L	P440850	
		Phaeophytin-a	1.0	I	ug/L	P440850	
		Chlorophyll-a, Uncorrected	9.7		ug/L	P440850	

Field ID: G3SD0107

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2463170	Colilert-18	Escherichia Coli-Quanti-Tray	36.9		MPN/100 mL		

Ref. Method and Comment:
SM 10150 B: Precision data is not available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for available precision data.

Non-Conformance Report

NCR ID: 10286

Event(s)	Job(s)	Sample(s)	Test(s)
SO-DIST-2024-01-25-01			
NCR Type: SHIPPING/RECEIVING		NCR Category: Sample Integrity	
Observation: Sample container arrived empty.			
	Site: G3SD0083 Tests: W-E8321-DI, W-E8321-MS		
Resolution: Unable to log in sample.			
Authorized by/Date: Kyle Klug 1/29/2024			

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry Colin Wright (850) 245-8085
Biology Cheryl Swanson (850) 245-8177

Quality Assurance Report
Method Blank Results

Reference Method: SM 10150 B
Batch ID: P440850

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.82	U	ug/L
Chlorophyll-a, Uncorrected	0.60	U	ug/L
Phaeophytin-a	0.90	U	ug/L

Reference Method: SOP-PCR-1.0
Batch ID: P440262

Component	Result	Code	Units
HF183-qPCR	3.3E+03	U	TSC/100 mL

Reference Method: SOP-PCR-1.4
Batch ID: P440262

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

Reference Method: SOP-PCR-1.5
Batch ID: P440262

Component	Result	Code	Units
DG3-qPCR	2.6E+03	U	TSC/100 mL

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 10150 B
Batch ID: P440850

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	101		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P440262

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	88.5	89.0	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P440262

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	106	86.8	P/P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P440262

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	95.1	88.0	P/P	50 - 175

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P440262

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2462430	HF183-qPCR	87.3		P	50 - 175
2462693	HF183-qPCR	95.5	93.5	P/P	50 - 175
2463166	HF183-qPCR	99.9		P	50 - 175
2463301	HF183-qPCR	93.5		P	50 - 175
2463302	HF183-qPCR	96.0		P	50 - 175
2463303	HF183-qPCR	90.0		P	50 - 175
2463304	HF183-qPCR	90.9		P	50 - 175
2463305	HF183-qPCR	93.3		P	50 - 175
2463306	HF183-qPCR	94.3		P	50 - 175
2463570	HF183-qPCR	85.1		P	50 - 175
2463571	HF183-qPCR	90.0		P	50 - 175
2463643	HF183-qPCR	95.5		P	50 - 175
2463737	HF183-qPCR	99.4		P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P440262

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2462430	BacR-qPCR	83.1		P	50 - 175
2462693	BacR-qPCR	97.0	98.9	P/P	50 - 175
2463166	BacR-qPCR	73.6		P	50 - 175
2463301	BacR-qPCR	85.0		P	50 - 175
2463302	BacR-qPCR	94.3		P	50 - 175
2463303	BacR-qPCR	80.0		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.4
Batch ID: P440262

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463304	BacR-qPCR	84.1		P	50 - 175
2463305	BacR-qPCR	83.0		P	50 - 175
2463306	BacR-qPCR	84.6		P	50 - 175
2463570	BacR-qPCR	77.5		P	50 - 175
2463571	BacR-qPCR	87.5		P	50 - 175
2463643	BacR-qPCR	82.8		P	50 - 175
2463737	BacR-qPCR	78.6		P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P440262

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2462430	DG3-qPCR	85.3		P	50 - 175
2462693	DG3-qPCR	97.6	99.5	P/P	50 - 175
2463166	DG3-qPCR	81.1		P	50 - 175
2463301	DG3-qPCR	90.5		P	50 - 175
2463302	DG3-qPCR	90.5		P	50 - 175
2463303	DG3-qPCR	91.7		P	50 - 175
2463304	DG3-qPCR	92.3		P	50 - 175
2463305	DG3-qPCR	91.3		P	50 - 175
2463306	DG3-qPCR	88.1		P	50 - 175
2463570	DG3-qPCR	82.7		P	50 - 175
2463571	DG3-qPCR	92.8		P	50 - 175
2463643	DG3-qPCR	91.9		P	50 - 175
2463737	DG3-qPCR	85.3		P	50 - 175

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P440262

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2462693	HF183-qPCR	2.14	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P440262

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2462693	BacR-qPCR	1.93	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
Batch ID: P440262

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2462693	DG3-qPCR	1.85	Spike	P	0 - 25

Quality Assurance Report

Precision

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

Quality Assurance Report

Surrogates

Lab Sample ID: 2463166

Field Sample ID: G3SD0083

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	62.3	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	93.9	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	73.6	P	50 - 300

Quality Assurance Report

Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			Precision SMP	MS
SM 10150 B	Chlorophyll-a, Corrected	101						
SOP-PCR-1.0	HF183-qPCR	89.0	88.5	87.3	95.5	93.5		2.14
				99.9				
SOP-PCR-1.4	BacR-qPCR	86.8	106	83.1	97.0	98.9		1.93
				73.6				
SOP-PCR-1.5	DG3-qPCR	88.0	95.1	85.3	97.6	99.5		1.85
				81.1				

Reference Method Descriptions

Method	Description	Associated Samples
Colilert-18	E. coli by Colilert-18/QT by Sanders in Fort Myers	2463167, 2463168, 2463169, 2463170, 2463171
SM 10150 B	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2463154, 2463156, 2463157, 2463158
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2463166
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2463166
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2463166

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Colilert-18	01/24/2024	01/24/2024 15:49		01/25/2024 10:09	Sanders-Fort Myers	2463167, 2463168, 2463169, 2463170, 2463171
SM 10150 B	01/25/2024	01/25/2024 12:26	Keanu Thijm	01/31/2024 09:00	Megan Higbee	2463154, 2463156, 2463157, 2463158
SOP-PCR-1.0	01/25/2024	01/25/2024 13:36	Lily Gregson	02/02/2024 08:42	Roberta Tatti	2463166
SOP-PCR-1.4	01/25/2024	01/25/2024 13:36	Lily Gregson	02/05/2024 08:33	Roberta Tatti	2463166
SOP-PCR-1.5	01/25/2024	01/25/2024 13:36	Lily Gregson	02/05/2024 09:29	Roberta Tatti	2463166