

Biological Analysis Report

NE-DIST-2024-04-25-02

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

Overflow Analyses Performed By:
Diversified Environmental Laboratories, Inc.
3653 Regent Boulevard
Suite 509
Jacksonville, FL 32224
DOH Accreditation E821059

Event Description: **Suwannee East 2024**
Request ID: **RQ-2024-04-15-14**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
Cheryl Swanson - Administrator
Sarah Menz, Ph.D. - Bench Biology & Aquatic
Toxicity
Puja Jasrotia, Ph.D. - Molecular Biology & Taxonomy
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8177

Certified by: Sarah Menz, Environmental Administrator

Date Certified: 10-JUN-2024 13:15

A handwritten signature in dark ink, appearing to be 'Sarah Menz', written in a cursive style.

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: 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: ROCKY CREEK AT 156TH AV

Collection Date/Time: 04/24/2024 10:00

Field ID: G1NE0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2484905	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	816.4		MPN/100 mL		

Sample Location: HAGUE BRANCH TRIBAT US441 80M W 77TH TERR

Collection Date/Time: 04/24/2024 10:30

Field ID: 21030152

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2484906	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	1553.1		MPN/100 mL		

Sample Location: MILL CREEK AT OLD BELLAMY ALLIGATOR ROAD

Collection Date/Time: 04/24/2024 11:35

Field ID: 21030126

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2484908	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	579.4		MPN/100 mL		
2484916	SOP-PCR-1.0	HF183-qPCR**	3.3E+03	U	TSC/100 mL	P444452	
	SOP-PCR-1.4	BacR-qPCR**	3.0E+03	U	TSC/100 mL	P444452	
	SOP-PCR-1.5	DG3-qPCR**	No result	0	TSC/100 mL	P444452	

Ref. Method and Comment:
SOP-PCR-1.5: See non-conformance report # 10478

Sample Location: PARENERS BR UPSTREAM OF CULVERTS UNDER CR1491

Collection Date/Time: 04/24/2024 11:55

Field ID: G1NE0906

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2484904	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	770.1		MPN/100 mL		
2484915	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P444452	
	SOP-PCR-1.4	BacR-qPCR**	1.91E+05		TSC/100 mL	P444452	
	SOP-PCR-1.5	DG3-qPCR**	No result	0	TSC/100 mL	P444452	

Ref. Method and Comment:
SOP-PCR-1.5: See non-conformance report # 10478

Sample Location: OLUSTEE CR AT CR 238

Collection Date/Time: 04/24/2024 12:25

Field ID: 21020009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2484903	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	38.1		MPN/100 mL		

Sample Location: CELLON CREEK AT SAN FELASCO SP

Collection Date/Time: 04/24/2024 11:15

Field ID: G1NE0960

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2484907	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	325.5		MPN/100 mL		

Non-Conformance Report

Non-Conformance Report

NCR ID: 10478

Event(s)	Job(s)	Sample(s)	Test(s)
NE-DIST-2024-04-25-02	TLH-2024-04-25-55	2484915	
NE-DIST-2024-04-25-02	TLH-2024-04-25-55	2484916	

NCR Type: PREPARATIONNCR Category: Sample Preservation

Observation: Samples exceeded the required temperature during storage due to power outage.
Resolution: Per customer request, remaining tests of affected samples will not be analyzed. The data will be reported as "No Result" with an "O" qualifier.

Authorized by/Date: Cheryl A. Swanson 5/28/2024

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: SOP-PCR-1.0
Batch ID: P444452

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

Reference Method: SOP-PCR-1.4
Batch ID: P444452

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: P444452

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	77.9	84.0	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P444452

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	108	96.9	P/P	50 - 175

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P444452

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2483537	HF183-qPCR	77.5	88.0	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P444452

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2483538	HF183-qPCR	89.0		P	50 - 175
2483539	HF183-qPCR	91.6		P	50 - 175
2484559	HF183-qPCR	92.0		P	50 - 175
2484792	HF183-qPCR	80.9		P	50 - 175
2484915	HF183-qPCR	87.1		P	50 - 175
2484916	HF183-qPCR	87.1		P	50 - 175
2485242	HF183-qPCR	89.3		P	50 - 175
2485243	HF183-qPCR	83.6		P	50 - 175
2485244	HF183-qPCR	77.8		P	50 - 175
2485245	HF183-qPCR	98.0		P	50 - 175
2485246	HF183-qPCR	81.6		P	50 - 175
2485411	HF183-qPCR	83.9		P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P444452

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2483537	BacR-qPCR	73.3	73.1	P/P	50 - 175
2483538	BacR-qPCR	73.4		P	50 - 175
2483539	BacR-qPCR	61.3		P	50 - 175
2484559	BacR-qPCR	78.1		P	50 - 175
2484792	BacR-qPCR	56.5		P	50 - 175
2484915	BacR-qPCR	92.9		P	50 - 175
2484916	BacR-qPCR	87.2		P	50 - 175
2485242	BacR-qPCR	78.1		P	50 - 175
2485243	BacR-qPCR	77.4		P	50 - 175
2485244	BacR-qPCR	38.0		F	50 - 175
2485245	BacR-qPCR	71.6		P	50 - 175
2485246	BacR-qPCR	35.6		F	50 - 175
2485411	BacR-qPCR	75.4		P	50 - 175

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P444452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2483537	HF183-qPCR	12.7	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P444452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2483537	BacR-qPCR	0.302	Spike	P	0 - 25

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

Quality Assurance Report

Surrogates

Lab Sample ID: 2484915

Field Sample ID: G1NE0906

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	105	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	99.5	P	50 - 300

Lab Sample ID: 2484916

Field Sample ID: 21030126

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	101	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	97.9	P	50 - 300

Quality Assurance Report

Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			Precision SMP	MS
SOP-PCR-1.0	HF183-qPCR	84.0	77.9	77.5	88.0	89.0		12.7
SOP-PCR-1.4	BacR-qPCR	96.9	108	73.3	73.1	73.4		0.302

Reference Method Descriptions

Method	Description	Associated Samples
SM 9223 B Quanti-Tray	E. coli by Colilert/QT by Diversified Environmental Laboratories in Jacksonville	2484903, 2484904, 2484905, 2484906, 2484907, 2484908
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2484915, 2484916
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2484915, 2484916
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2484915, 2484916

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 9223 B Quanti-Tray	04/24/2024	04/24/2024 15:32		04/25/2024 09:54	Diversified-Jacksonville	2484903, 2484904, 2484905, 2484906, 2484907, 2484908
SOP-PCR-1.0	04/25/2024	04/25/2024 14:10	Madeline Gruver	05/07/2024 14:06	Roberta Tatti	2484915, 2484916
SOP-PCR-1.4	04/25/2024	04/25/2024 14:10	Madeline Gruver	05/08/2024 09:42	Roberta Tatti	2484915, 2484916
SOP-PCR-1.5	04/25/2024	04/25/2024 14:10	Madeline Gruver	05/29/2024 11:31	Roberta Tatti	2484915, 2484916