Biological Analysis Report

NE-DIST-2019-07-10-02

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

Overflow Analyses Performed By:
ALS Environmental - Jacksonville
9143 Philips Highway, Suite 200
Jacksonville, FL 32256
DOH Accreditation E82502

Event Description: **Suwannee North**
Request ID: **RQ-2019-06-03-26**
Customer: **NE-DIST**
Project ID: **SMP**

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8800 Baymeadows Way West
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Certified by: Puja Jasrotia, Environmental Manager

Date Certified: 07-AUG-2019 15:27

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: PEACOCK LAKE CENTER **Collection Date/Time: 07/09/2019 09:55**

Field ID: 21020097 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2101214	SM 10200 H (mod.)	Chlorophyll-a, Corrected	11		ug/L	P367675	
		Phaeophytin-a	1.5	U	ug/L	P367675	
		Chlorophyll-a, Uncorrected	12		ug/L	P367675	

Ref. Method and Comment:
SM 10200 H (mod.): 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: CANNON CR @ CANNON CR RD/BUSINESS PARK POINT W CR 47 **Collection Date/Time: 07/09/2019 10:55**

Field ID: 21030138 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2101212	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.5	I	ug/L	P367675	
		Phaeophytin-a	1.6	U	ug/L	P367675	
		Chlorophyll-a, Uncorrected	2.5	I	ug/L	P367675	
2101215	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	754		MPN/100 mL		
2101217	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P367377	LCS
	SOP-PCR-1.4	BacR-qPCR**	3.9E+03	I	TSC/100 mL	P367377	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold			P366861	

Ref. Method and Comment:
SM 10200 H (mod.): 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.
SOP-PCR-1.4: Precision data unavailable for Analysis Batch A93236

Sample Location: LITTLE CREEK AT US 441 **Collection Date/Time: 07/09/2019 11:50**

Field ID: 21010033 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2101213	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.8	I	ug/L	P367675	
		Phaeophytin-a	2.2	U	ug/L	P367675	
		Chlorophyll-a, Uncorrected	2.8	I	ug/L	P367675	
2101216	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	187		MPN/100 mL		
2101218	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold			P366861	

Ref. Method and Comment:
SM 10200 H (mod.): 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.

Quality Assurance Report
Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P367675

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

Quality Assurance Report
Method Blank Results

Reference Method: SOP-PCR-1.0
Batch ID: P367377

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

Reference Method: SOP-PCR-1.4
Batch ID: P367377

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P367675

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	87.5		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P367377

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	148	258	P/F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P367377

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	88.9	93.9	P/P	50 - 175

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P367377

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2100794	HF183-qPCR	126		P	50 - 175
2100796	HF183-qPCR	124		P	50 - 175
2101217	HF183-qPCR	133		P	50 - 175
2103714	HF183-qPCR	142	125	P/P	50 - 175
2103715	HF183-qPCR	142		P	50 - 175
2103716	HF183-qPCR	140		P	50 - 175
2103717	HF183-qPCR	130		P	50 - 175
2104382	HF183-qPCR	121		P	50 - 175
2104383	HF183-qPCR	112		P	50 - 175
2104384	HF183-qPCR	134		P	50 - 175
2104641	HF183-qPCR	111		P	50 - 175
2104642	HF183-qPCR	124		P	50 - 175
2104643	HF183-qPCR	132		P	50 - 175

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SOP-PCR-1.4
Batch ID: P367377

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2101217	BacR-qPCR	78.1		P	50 - 175
2104382	BacR-qPCR	68.1		P	50 - 175
2104383	BacR-qPCR	60.7		P	50 - 175
2104384	BacR-qPCR	81.7		P	50 - 175

Quality Assurance Report
Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P367675

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2101333	Chlorophyll-a, Corrected	3.70	Sample	P	0 - 25
2101333	Chlorophyll-a, Uncorrected	4.36	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P367377

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103714	HF183-qPCR	12.7	Spike	P	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: 2101217
Field Sample ID: 21030138

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	108	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	107	P	50 - 300

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision		
				LCS	SMP	MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	87.5			3.70	
	Chlorophyll-a, Uncorrected				4.36	
SOP-PCR-1.0	HF183-qPCR	258 148	142 125 142 140			12.7
SOP-PCR-1.4	BacR-qPCR	93.9 88.9	78.1 68.1 60.7 81.7			

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2101212, 2101213, 2101214
SM 9223 B Quanti-Tray / E82502	E. coli by Colilert/QT by ALS in Jacksonville	2101215, 2101216
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2101217
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2101217
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	2101217, 2101218

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	07/10/2019	07/10/2019 13:01	Yuliya Danyuk	07/18/2019 11:15	Yuliya Danyuk	2101212, 2101213, 2101214
SM 9223 B Quanti-Tray	07/09/2019	07/09/2019 14:48		07/10/2019 15:48	ALS Environmental, Jax	2101215, 2101216
SOP-PCR-1.0	07/10/2019	07/10/2019 15:20	Angela Smith	08/01/2019 15:05	Mailin Lopez	2101217
SOP-PCR-1.4	07/10/2019	07/10/2019 15:20	Angela Smith	08/02/2019 13:03	Mailin Lopez	2101217
SOP-PCR-4.0	07/10/2019	07/10/2019 15:20	Angela Smith	07/23/2019 11:29	Sarah Menz	2101217, 2101218