

Biological Analysis Report

NE-DIST-2022-07-12-02

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

Event Description: **GTM NERR-Guana River SMP-7 site&blank**
Request ID: **RQ-2022-07-11-09**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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This Report replaces the previous Report Serial Number: 0139379

Report Comment: Entero samples unauthorized to re-calculate to add "Q" qualifier.

Revision certified by: Sarah Menz, Environmental Administrator

Date Certified: 19-OCT-2022 12:58

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

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 and Microbiology.

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: DEPGR3

Collection Date/Time: 07/11/2022 08:05

Field ID: GTMGR3NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2340547	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.6		ug/L	P416890	
		Phaeophytin-a	1.1	I	ug/L	P416890	
		Chlorophyll-a, Uncorrected	7.5		ug/L	P416890	
2340554	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P416715	
2340561	SM 9222 D	Fecal Coliforms-Membrane Filter	4	BQ	cfu/100 mL	P416700	

Ref. Method and Comment:

Enterolert/QT: Laboratory duplicate precision is not within criteria limits.

SM 9222 D: Laboratory duplicate result is 3 U. Precision data for this duplicate is unavailable due to the colony count falling outside of method acceptable range.

Sample Location: DEPGR2

Collection Date/Time: 07/11/2022 08:28

Field ID: GTMGRNUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2340548	SM 10200 H (mod.)	Chlorophyll-a, Corrected	11		ug/L	P416890	
		Phaeophytin-a	1.2	I	ug/L	P416890	
		Chlorophyll-a, Uncorrected	12		ug/L	P416890	
2340555	Enterolert/QT	Enterococci-Quanti-Tray	10.0	Q	MPN/100 mL	P416715	
2340562	SM 9222 D	Fecal Coliforms-Membrane Filter	3	UQ	cfu/100 mL	P416700	

Ref. Method and Comment:

Enterolert/QT: Laboratory duplicate precision is not within criteria limits.

SM 9222 D: Precision data for QC sample is unavailable due to the colony count falling outside of method acceptable range.

Sample Location: DEPGR1

Collection Date/Time: 07/11/2022 08:44

Field ID: GTMGR1NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2340549	SM 10200 H (mod.)	Chlorophyll-a, Corrected	7.4		ug/L	P416890	
		Phaeophytin-a	1.5	U	ug/L	P416890	
		Chlorophyll-a, Uncorrected	8.5		ug/L	P416890	
2340556	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P416715	
2340563	SM 9222 D	Fecal Coliforms-Membrane Filter	6	BQ	cfu/100 mL	P416700	

Ref. Method and Comment:

Enterolert/QT: Laboratory duplicate precision is not within criteria limits.

SM 9222 D: Precision data for QC sample is unavailable due to the colony count falling outside of method acceptable range.

Sample Location: DEPGL4

Collection Date/Time: 07/11/2022 10:15

Field ID: GTMGL4NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2340550	SM 10200 H (mod.)	Chlorophyll-a, Corrected	21		ug/L	P416890	
		Phaeophytin-a	2.6	U	ug/L	P416890	
		Chlorophyll-a, Uncorrected	22		ug/L	P416890	
2340557	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P416715	
2340564	SM 9222 D	Fecal Coliforms-Membrane Filter	3	BQ	cfu/100 mL	P416700	

Ref. Method and Comment:

Enterolert/QT: Laboratory duplicate precision is not within criteria limits.

SM 9222 D: Precision data for QC sample is unavailable due to the colony count falling outside of method acceptable range.

Sample Location: DEPGL3

Collection Date/Time: 07/11/2022 10:42

Field ID: GTMLMNUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2340551	SM 10200 H (mod.)	Chlorophyll-a, Corrected	16		ug/L	P416868	
		Phaeophytin-a	2.5	U	ug/L	P416868	
		Chlorophyll-a, Uncorrected	17		ug/L	P416868	
2340558	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P416715	
2340565	SM 9222 D	Fecal Coliforms-Membrane Filter	6	BQ	cfu/100 mL	P416700	

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.

Enterolert/QT: Laboratory duplicate precision is not within criteria limits.

SM 9222 D: Precision data for QC sample is unavailable due to the colony count falling outside of method acceptable range.

Sample Location: DEPGL2

Collection Date/Time: 07/11/2022 11:02

Field ID: GTMGL2NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2340552	SM 10200 H (mod.)	Chlorophyll-a, Corrected	26		ug/L	P416868	
		Phaeophytin-a	6.7		ug/L	P416868	
		Chlorophyll-a, Uncorrected	31		ug/L	P416868	
2340559	Enterolert/QT	Enterococci-Quanti-Tray	10.0	Q	MPN/100 mL	P416715	
2340566	SM 9222 D	Fecal Coliforms-Membrane Filter	3	UQ	cfu/100 mL	P416700	

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.

Enterolert/QT: Laboratory duplicate precision is not within criteria limits.

SM 9222 D: Precision data for QC sample is unavailable due to the colony count falling outside of method acceptable range.

Sample Location: DEPGL1

Collection Date/Time: 07/11/2022 11:25

Field ID: GTMGL1NUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2340553	SM 10200 H (mod.)	Chlorophyll-a, Corrected	52	A	ug/L	P416868	
		Phaeophytin-a	3.9		ug/L	P416868	
		Chlorophyll-a, Uncorrected	56	A	ug/L	P416868	
2340560	Enterolert/QT	Enterococci-Quanti-Tray	158.0	Q	MPN/100 mL	P416715	
2340567	SM 9222 D	Fecal Coliforms-Membrane Filter	160	Q	cfu/100 mL	P416700	

Ref. Method and Comment:

SM 10200 H (mod.): Lab dup result is 3.2 I for Phaeophytin-a. Precision data is unavailable due to the small amount of analyte in the QC sample.

Enterolert/QT: Laboratory duplicate precision is not within criteria limits.

SM 9222 D: Precision data for QC sample is unavailable due to the colony count falling outside of method acceptable range.

Quality Assurance Report

Method Blank Results

Reference Method: Enterolert/QT

Batch ID: P416715

Component	Result	Code	Units
Enterococci-Quanti-Tray	1.0	U	MPN/100 mL

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P416868

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.89	U	ug/L
Chlorophyll-a, Uncorrected	0.65	U	ug/L
Phaeophytin-a	0.98	U	ug/L

Reference Method: SM 10200 H (mod.)
Batch ID: P416890

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.89	U	ug/L
Chlorophyll-a, Uncorrected	0.65	U	ug/L
Phaeophytin-a	0.98	U	ug/L

Reference Method: SM 9222 D
Batch ID: P416700

Component	Result	Code	Units
Fecal Coliforms-Membrane Filter	2	U	cfu/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P416868

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	95.0		P	84 - 116

Reference Method: SM 10200 H (mod.)
Batch ID: P416890

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	95.5		P	84 - 116

Quality Assurance Report Precision

Reference Method: Enterolert/QT
Batch ID: P416715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340340	Enterococci-Quanti-Tray	54.0	Sample	P	0 - 80

Reference Method: SM 10200 H (mod.)
Batch ID: P416868

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340553	Chlorophyll-a, Corrected	2.72	Sample	P	0 - 25
2340553	Chlorophyll-a, Uncorrected	1.99	Sample	P	0 - 25

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
 Batch ID: P416890

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340242	Chlorophyll-a, Corrected	22.9	Sample	P	0 - 25
2340242	Chlorophyll-a, Uncorrected	3.53	Sample	P	0 - 25
2340242	Phaeophytin-a	3.07	Sample	P	0 - 25

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
Enterolert/QT	Enterococci-Quanti-Tray				54.0	
SM 10200 H (mod.)	Chlorophyll-a, Corrected	95.0			2.72	
	Chlorophyll-a, Corrected	95.5			22.9	
	Chlorophyll-a, Uncorrected				1.99	
	Chlorophyll-a, Uncorrected				3.53	
	Phaeophytin-a				3.07	

Reference Method Descriptions

Method	Description	Associated Samples
Enterolert/QT	Enterococci by Enterolert Quanti-Tray method - non-chlorinated water systems	2340554, 2340555, 2340556, 2340557, 2340558, 2340559, 2340560
SM 10200 H (mod.)	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2340547, 2340548, 2340549, 2340550, 2340551, 2340552, 2340553
SM 9222 D	Fecal coliforms by membrane filter method - non-chlorinated water systems	2340561, 2340562, 2340563, 2340564, 2340565, 2340566, 2340567

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	07/12/2022	07/12/2022 15:56	Austin Nolan	07/13/2022 16:38	Ethan Wickline	2340554, 2340555, 2340556, 2340557, 2340558, 2340559, 2340560
SM 10200 H (mod.)	07/12/2022	07/12/2022 13:51	Tynan A Branch	07/15/2022 10:58	Jillian G Hanley	2340547, 2340548, 2340549, 2340550
	07/12/2022	07/12/2022 13:51	Tynan A Branch	07/18/2022 09:27	Ethan Wickline	2340551, 2340552, 2340553
SM 9222 D	07/12/2022	07/12/2022 15:28	Carina A. Tull	07/13/2022 15:33	Amber S. Eells	2340561, 2340562, 2340563
	07/12/2022	07/12/2022 15:59	Carina A. Tull	07/13/2022 15:33	Amber S. Eells	2340564, 2340565, 2340566, 2340567