

Biological Analysis Report

NW-DIST-2021-07-30-01

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

Overflow Analyses Performed By:
University of West Florida
11000 University Parkway
Pensacola, FL 32514
DOH Accreditation E71969

Event Description: **Twin Lakes Run**
Request ID: **RQ-2021-07-26-15**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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160 Government Center
Suite 208
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Certified by: Puja Jasrotia, Environmental Administrator

Date Certified: 24-AUG-2021 09:31



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, Microbiology 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: Allen Lake Input

Collection Date/Time: 07/29/2021 10:02

Field ID: G3NW0177

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2266237	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	459		MPN/100 mL		

Sample Location: Twin Lake South Lobe

Collection Date/Time: 07/29/2021 11:08

Field ID: G3NW0448

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2266222	SM 10200 H (mod.)	Chlorophyll-a, Corrected	9.3		ug/L	P402321	
		Phaeophytin-a	21		ug/L	P402321	
		Chlorophyll-a, Uncorrected	22		ug/L	P402321	
2266227	SM 9222 D	Fecal Coliforms-Membrane Filter	22	BQ	cfu/100 mL	P402133	
2266232	Enterolert/QT	Enterococci-Quanti-Tray	10		MPN/100 mL		
	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	10		MPN/100 mL		

Ref. Method and Comment:

SM 9222 D: Laboratory duplicate result is 10 B. Precision data for this duplicate is unavailable due to the colony count falling outside of method acceptable range.

Sample Location: Twin Lake Eastern Lake

Collection Date/Time: 07/29/2021 11:37

Field ID: G3NW0449

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2266223	SM 10200 H (mod.)	Chlorophyll-a, Corrected	320		ug/L	P402321	
		Phaeophytin-a	270		ug/L	P402321	
		Chlorophyll-a, Uncorrected	500		ug/L	P402321	
2266228	SM 9222 D	Fecal Coliforms-Membrane Filter	21	BQ	cfu/100 mL	P402133	
2266233	Enterolert/QT	Enterococci-Quanti-Tray	10		MPN/100 mL		
	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	10		MPN/100 mL		

Ref. Method and Comment:

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

Sample Location: Kell-Aire Lake

Collection Date/Time: 07/29/2021 12:19

Field ID: G3NW0217

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2266224	SM 10200 H (mod.)	Chlorophyll-a, Corrected	64		ug/L	P402321	
		Phaeophytin-a	32		ug/L	P402321	
		Chlorophyll-a, Uncorrected	86		ug/L	P402321	
2266229	SM 9222 D	Fecal Coliforms-Membrane Filter	84	Q	cfu/100 mL	P402133	
2266234	Enterolert/QT	Enterococci-Quanti-Tray	10	U	MPN/100 mL		
	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	109		MPN/100 mL		

Ref. Method and Comment:

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

Sample Location: Coleman Lake

Collection Date/Time: 07/29/2021 12:10

Field ID: G3NW0216

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2266225	SM 10200 H (mod.)	Chlorophyll-a, Corrected	130	A	ug/L	P402321	

Field ID: G3NW0216

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2266225	SM 10200 H (mod.)	Phaeophytin-a	19	A	ug/L	P402321	
		Chlorophyll-a, Uncorrected	150	A	ug/L	P402321	
2266230	SM 9222 D	Fecal Coliforms-Membrane Filter	7	BQ	cfu/100 mL	P402133	
2266235	Enterolert/QT	Enterococci-Quanti-Tray	10	U	MPN/100 mL		
	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	20		MPN/100 mL		

Ref. Method and Comment:

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

Sample Location: Twin Lake

Collection Date/Time: 07/29/2021 10:55

Field ID: G3NW0215

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2266226	SM 10200 H (mod.)	Chlorophyll-a, Corrected	7.6		ug/L	P402321	
		Phaeophytin-a	2.3	I	ug/L	P402321	
		Chlorophyll-a, Uncorrected	9.4		ug/L	P402321	
2266231	SM 9222 D	Fecal Coliforms-Membrane Filter	280	Q	cfu/100 mL	P402133	
2266236	Enterolert/QT	Enterococci-Quanti-Tray	318		MPN/100 mL		
	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	288		MPN/100 mL		

Ref. Method and Comment:

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: SM 10200 H (mod.)

Batch ID: P402321

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: SM 9222 D

Batch ID: P402133

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: P402321

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	102		P	84 - 116

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
 Batch ID: P402321

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2266225	Chlorophyll-a, Corrected	3.81	Sample	P	0 - 25
2266225	Chlorophyll-a, Uncorrected	4.60	Sample	P	0 - 25
2266225	Phaeophytin-a	14.0	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
SM 10200 H (mod.)	Chlorophyll-a, Corrected	102			3.81	
	Chlorophyll-a, Uncorrected				4.60	
	Phaeophytin-a				14.0	

Reference Method Descriptions

Method	Description	Associated Samples
Enterolert/QT	Enterococci by Enterolert/QT by UWF in Pensacola	2266232, 2266233, 2266234, 2266235, 2266236
SM 10200 H (mod.)	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2266222, 2266223, 2266224, 2266225, 2266226
SM 9222 D	Fecal coliforms by membrane filter method - non-chlorinated water systems	2266227, 2266228, 2266229, 2266230, 2266231
SM 9223 B Quanti-Tray	E. coli by Colilert-18/QT by UWF in Pensacola	2266232, 2266233, 2266234, 2266235, 2266236, 2266237

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	07/29/2021	07/29/2021 16:30		07/30/2021 17:00	UWF Lab	2266232, 2266233, 2266234, 2266235, 2266236
SM 10200 H (mod.)	07/30/2021	07/30/2021 14:45	Joel Wharton	08/10/2021 09:35	Jessica Fetgatter	2266222, 2266223, 2266224, 2266225, 2266226
SM 9222 D	07/30/2021	07/30/2021 14:38	Mia Jane Harrell	07/31/2021 14:30	Carina A. Tull	2266227, 2266228, 2266229, 2266230
	07/30/2021	07/30/2021 14:48	Mia Jane Harrell	07/31/2021 14:30	Carina A. Tull	2266231
SM 9223 B Quanti-Tray	07/29/2021	07/29/2021 16:50		07/30/2021 11:50	UWF Lab	2266232, 2266233, 2266234, 2266235, 2266236, 2266237