

Biological Analysis Report

NW-DIST-2016-10-18-01

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: **Bayou Chico BMAP**
Request ID: **RQ-2016-09-19-16**
Customer: **NW-DIST**
Project ID: **BMAP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 308
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

For additional information please contact
Cheryl Swanson - Administrator
J. Marshall Faircloth - Aquatic Toxicology
Jacqueline Savage - Bench Biology
Jacqueline Savage - Microbiology
Daisys Matthews - Molecular Biology
Cheryl Swanson - Taxonomy (Invertebrate & Algal)
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8177

Certified by: Cheryl A. Swanson, Environmental Manager

Date Certified: 02-NOV-2016 11:52



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 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 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: Pensacola Bay at Sanders Beach

Collection Date/Time: 10/17/2016 10:10

Field ID: A

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1841349	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.3		ug/L	P314103	
		Phaeophytin-a	1.2	I	ug/L	P314103	
		Chlorophyll/Phaeophytin Ratio	1.5			P314103	
		Chlorophyll-a, Uncorrected	3.1		ug/L	P314103	
1841356	SM 9222 D	Fecal Coliforms-Membrane Filter	8	B	cfu/100 mL		

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: Bayou Chico at Mandalay Park

Collection Date/Time: 10/17/2016 10:35

Field ID: B

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1841350	SM 10200 H (mod.)	Chlorophyll-a, Corrected	8.4		ug/L	P314103	
		Phaeophytin-a	0.84	I	ug/L	P314103	
		Chlorophyll/Phaeophytin Ratio	1.6			P314103	
		Chlorophyll-a, Uncorrected	9.2		ug/L	P314103	
1841357	EPA 1600 (MF)	Enterococci-Membrane Filter	70		cfu/100 mL		
	SM 9222 D	Fecal Coliforms-Membrane Filter	78		cfu/100 mL		

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: Jones Creek at Old Corry Road

Collection Date/Time: 10/17/2016 11:10

Field ID: C

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1841351	SM 10200 H (mod.)	Chlorophyll-a, Corrected	8.7		ug/L	P314103	
		Phaeophytin-a	1.7		ug/L	P314103	
		Chlorophyll/Phaeophytin Ratio	1.6			P314103	
		Chlorophyll-a, Uncorrected	10		ug/L	P314103	
1841358	EPA 1600 (MF)	Enterococci-Membrane Filter	280		cfu/100 mL		
	SM 9222 D	Fecal Coliforms-Membrane Filter	1600	B	cfu/100 mL		
	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	211		MPN/100 mL		

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.

EPA 1600 (MF): Verified

Sample Location: Jackson Creek at Old Corry Road

Collection Date/Time: 10/17/2016 11:40

Field ID: D

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1841352	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.83	I	ug/L	P314103	
		Phaeophytin-a	0.40	U	ug/L	P314103	
		Chlorophyll/Phaeophytin Ratio	1.5			P314103	
		Chlorophyll-a, Uncorrected	1.1	I	ug/L	P314103	
1841359	SM 9222 D	Fecal Coliforms-Membrane Filter	141	B	cfu/100 mL		

Field ID: D

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1841359	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	120		MPN/100 mL		

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: Jackson Creek at New Warrington Road

Collection Date/Time: 10/17/2016 12:00

Field ID: E

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1841353	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.7		ug/L	P314103	
		Phaeophytin-a	0.40	U	ug/L	P314103	
		Chlorophyll/Phaeophytin Ratio	1.6			P314103	
		Chlorophyll-a, Uncorrected	1.9		ug/L	P314103	
1841360	SM 9222 D	Fecal Coliforms-Membrane Filter	200		cfu/100 mL		
	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	238		MPN/100 mL		

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: Bayou Chico at Navy Blvd Bridge

Collection Date/Time: 10/17/2016 13:25

Field ID: F

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1841354	SM 10200 H (mod.)	Chlorophyll-a, Corrected	8.5		ug/L	P314103	
		Phaeophytin-a	0.47	I	ug/L	P314103	
		Chlorophyll/Phaeophytin Ratio	1.7			P314103	
		Chlorophyll-a, Uncorrected	9.1		ug/L	P314103	
1841361	EPA 1600 (MF)	Enterococci-Membrane Filter	22	B	cfu/100 mL		
	SM 9222 D	Fecal Coliforms-Membrane Filter	74		cfu/100 mL		

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.

SM 9222 D: Verified

Sample Location: Bayou Chico at W Street

Collection Date/Time: 10/17/2016 13:45

Field ID: G

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1841355	SM 10200 H (mod.)	Chlorophyll-a, Corrected	18		ug/L	P314103	
		Phaeophytin-a	3.9		ug/L	P314103	
		Chlorophyll/Phaeophytin Ratio	1.6			P314103	
		Chlorophyll-a, Uncorrected	21		ug/L	P314103	
1841362	EPA 1600 (MF)	Enterococci-Membrane Filter	12	B	cfu/100 mL		
	SM 9222 D	Fecal Coliforms-Membrane Filter	44		cfu/100 mL		

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

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P314103

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L
Chlorophyll-a, Uncorrected	0.40	U	ug/L
Phaeophytin-a	0.40	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P314103

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	94.5		P	84 - 116

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P314103

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1841386	Chlorophyll/Phaeophytin Ratio	0.0	Sample	P	0 - 25
1841386	Chlorophyll-a, Corrected	7.50	Sample	P	0 - 25
1841386	Chlorophyll-a, Uncorrected	5.93	Sample	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 Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
SM 10200 H (mod.)	Chlorophyll/Phaeophytin Ratio				0.0	
	Chlorophyll-a, Corrected	94.5			7.50	
	Chlorophyll-a, Uncorrected				5.93	

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 1600 (MF) / E71969	Enterococci by membrane filter method by UWF Overflow Laboratory for NWD	1841357, 1841358, 1841361, 1841362
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, phaeophytin and ratio by spectrophotometry	1841349, 1841350, 1841351, 1841352, 1841353, 1841354, 1841355
SM 9222 D / E71969	Fecal coliforms by membrane filter method by UWF Overflow Laboratory for NWD	1841356, 1841357, 1841358, 1841359, 1841360, 1841361, 1841362
SM 9223 Quanti-Tray / E71969	Escherichia coli by Colilert 18 Quanti-Tray method by UWF Overflow Laboratory for NWD	1841358, 1841359, 1841360

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 1600 (MF)	10/17/2016			10/17/2016 15:32	UWF Lab	1841357
	10/17/2016			10/17/2016 15:36	UWF Lab	1841358
	10/17/2016			10/17/2016 15:39	UWF Lab	1841361
	10/17/2016			10/17/2016 15:43	UWF Lab	1841362
SM 10200 H (mod.)	10/18/2016	10/18/2016 13:30	Carina A. Tull	10/27/2016	Brian Cumbie	1841349, 1841350, 1841351, 1841352, 1841353, 1841354, 1841355
SM 9222 D	10/17/2016			10/17/2016 16:02	UWF Lab	1841356
	10/17/2016			10/17/2016 16:09	UWF Lab	1841357
	10/17/2016			10/17/2016 16:12	UWF Lab	1841358
	10/17/2016			10/17/2016 16:16	UWF Lab	1841359
	10/17/2016			10/17/2016 16:19	UWF Lab	1841360
	10/17/2016			10/17/2016 16:23	UWF Lab	1841361
	10/17/2016			10/17/2016 16:26	UWF Lab	1841362
SM 9223 Quanti-Tray	10/17/2016			10/17/2016 16:45	UWF Lab	1841358
	10/17/2016			10/17/2016 16:47	UWF Lab	1841359
	10/17/2016			10/17/2016 16:51	UWF Lab	1841360