



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8 LABORATORY**

16194 W 45th Drive
GOLDEN, CO 80403-1790
Phone 303-312-7700

Ref: 8TMS-L

MEMORANDUM

SUBJECT: Analytical Results--- **HAB Emergency Bloom 2016 / 1609018**

FROM: Jeff McPherson, Biologist
William H. Batschelet, PhD, Laboratory Quality Assurance Officer

THRU: Mark Burkhardt, PhD, Director
Laboratory Services Program

TO: Tina Laidlaw, 8MO
Clean Water Act

Attached are the analytical results for HAB Emergency Bloom 2016 1609018. The table below shows the number of containers received , the work order number(s) assigned, and the date received:

	1609018	Total
09-Sep-2016	3	3

These samples were prepared, analyzed, and verified by the Region 8 Laboratory according to the requirements of the Laboratory Services Request (LSR) and procedures found in the laboratory Quality Assurance Manual (QSP-001) dated June 16, 2016.

Sample Receipt

All samples were received in acceptable condition except as noted in the Analyst Comments or Appendix A. The number of samples received and analyses are listed in Appendix B.

Sample Analysis

All sample results are reported on an as-received basis except as noted in the Analyst Comments. All samples were analyzed within holding times except as noted in Appendix A. All analyses met QC acceptance criteria except as noted in the Analyst Comments or Appendix A.

Field Measurements

All field measurements met QC acceptance criteria except as noted in the Analyst Comments or Appendix A.

QC Note

Routine sample quality control results such as blanks, matrix spikes, and laboratory duplicates, etc. are reported on the quality control pages of this report. Certain of the reported QC criteria may not be applicable or otherwise affect the data usability. Appendix C summarizes the guidelines used by the Region 8 Laboratory to qualify data. This is a general table and may or may not be applicable to this project.

Analyst Comments

Microcystins by ELISA

Station ID: 5930970 **Date / Time Sampled:** 09/06/16 12:10 **Workorder** 1609018
Comment: Scofield Reservoir **Matrix:** Water **Lab Number:** 1609018-01 A

Method	Parameter	Results	Units	Qual- ifier	Report Limit	Dilution Factor	Analyzed	By	Batch
Reg. 8 Lab	Total Microcystin	9.16	ug/L	J	1.50	10	09/12/2016	JWM	1600361

Station ID: 5931234 **Date / Time Sampled:** 09/06/16 12:00 **Workorder** 1609018
Comment: Scofield Reservoir **Matrix:** Water **Lab Number:** 1609018-02 A

Method	Parameter	Results	Units	Qual- ifier	Report Limit	Dilution Factor	Analyzed	By	Batch
Reg. 8 Lab	Total Microcystin	25.8	ug/L	J	1.50	10	09/12/2016	JWM	1600361

Station ID: 5930960 **Date / Time Sampled:** 09/06/16 13:00 **Workorder** 1609018
Comment: Scofield Reservoir **Matrix:** Water **Lab Number:** 1609018-03 A

Method	Parameter	Results	Units	Qual- ifier	Report Limit	Dilution Factor	Analyzed	By	Batch
Reg. 8 Lab	Total Microcystin	23.1	ug/L	J	1.50	10	09/12/2016	JWM	1600361

Note: "J" Qualifier indicates an estimated value.

Microcystins by ELISA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1600361 - General Prep									
Method Blank (1600361-BLK1)					Prepared & Analyzed: 09/12/16				
Total Microcystin	< 0.15	0.15	ug/L						
Method Blank (1600361-BLK2)					Prepared & Analyzed: 09/12/16				
Total Microcystin	< 0.15	0.15	ug/L						
Duplicate (1600361-DUP2)					Prepared & Analyzed: 09/12/16				
Source: 1609018-01									
Total Microcystin	8.16	1.50	ug/L		9.16			11.5	40
Reference (1600361-SRM1)					Prepared & Analyzed: 09/12/16				
Total Microcystin	0.83	0.15	ug/L	0.750		110	70-130		

J

NOTE:
 %REC is percent recovery, Result (less sample contribution) divided by the Spike Level
 RPD is the Relative Percent Difference (difference between the Result and the Source Result) divided by their average



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HAB

Sample Submission Form

Instructions: Fill out the station ID, station description, date and time in the chain of custody section (the bottle ID column is for lab use only). Print and sign your name and date the sampler block. Note discrepancies to the sampling/shipping protocols or additional information that may be pertinent in the comments block (backside).

Chain of Custody

Waterbody: Scofield Reservoir		LSR#: 1609018		
Station ID	Station Description	Date	Time	Bottle ID (lab)
5430970	SCOFIELD RES AB DAM 01	9/6/16	1210	U: 1609018-01 P:
5431234	SCOFIELD RES WADSWORTH BAY RAMP	9/6/16	1200	U: " -02 P:
5430960	PRICE RIVER BELOW SCOFIELD RES	9/6/16	1300	U: " -03 P:
				U: P:
				U: P:

Samples are algal toxin (LC-MS/MS and ELISA) (one unpreserved (U) and one preserved (P) 30 mL PETG container per station, water matrix. Preservative is 10x sample diluent concentrate. All samples are kept on ice in the dark. Note any discrepancies or deviations to this statement in the comments section.

Sampler Name: Jim Harris	Signature:	Date and time: 9/7/16 13:00
Received by Name: Jeff McPherson	Signature:	Date and time: 9/9/16 1000
		Cooler Temp (°C): 14.0C*
		FLAG

Appendix A - Exceptions Report

<u>Lab Number</u>	<u>Sample Name</u>	<u>Analysis</u>	<u>Analyte Name</u>	<u>Explanation</u>
1609018-01	5930970	Microcystin by ELISA - Total	*ALL*	Temperature outside of criteria.
1609018-02	5931234	Microcystin by ELISA - Total	*ALL*	Temperature outside of criteria.
1609018-03	5930960	Microcystin by ELISA - Total	*ALL*	Temperature outside of criteria.

Appendix B - Samples and Analysis

<u>Work Order #</u>	<u># Samples</u>	<u>Analysis</u>	<u>Method Name</u>	<u>Lab SOP</u>
1609018	3	Microcystin by ELISA - Total	Reg. 8 Lab	BIOLM-004v10_Microcystin_Abraxis

Appendix C - Data Assessment Guidelines

QC Check (Symbol)	Flagging Criteria
Initial Calibration (ICAL)	All failing analytes for all samples are qualified as estimated.
Initial Calibration Verification (ICV) or Standard Reference Material (SRM)	High failure: All detections for failing analytes for all samples are qualified as estimated. Low failure: All failing analytes for all samples are qualified as estimated.
Continuing Calibration Verification (CCV)	High failure: All detections for failing analytes for all associated samples are qualified as estimated. Low failure: All failing analytes for all associated samples are qualified as estimated.
Continuing Calibration Blank (CCB)	All detections for failing analytes for all associated samples where the concentration in the blank is greater than 1/10 the amount measured in the sample OR the blank contamination otherwise affects the sample results are qualified as estimated.
Blanks (BLK) Preparation Blank, Method, Trip, Storage, etc.	All detections for failing analytes for all samples where the concentration in the blank is greater than 1/10 the amount measured in the sample OR the blank contamination otherwise affects the sample results are qualified as estimated.
Lab Control Sample (LCS) or Standard Reference Material (SRM) or Blank Spike (BS)	High failure: All detections for failing analytes for all associated samples are qualified as estimated. Low failure: All failing analytes for all associated samples are qualified as estimated.
Matrix Spike (MS)	High failure: All detections for failing analytes in the parent sample are qualified as estimated. Low failure: All failing analytes in the parent sample are qualified as estimated. No qualification if the native concentration is greater than or equal to 4x the spike concentration.
Matrix Spike Duplicate (MSD)	%R Failure: Same as matrix spike. RPD Failure: All failing analytes in the parent sample are qualified as estimated.
Duplicate Sample (DUP)	All failing analytes in the parent sample are qualified as estimated. No qualification if the native concentration is less than the RL.
Serial Dilution (SD)	All failing analytes in the parent sample are qualified as estimated. No qualification if native concentration is less than or equal to 50x the RL.
Detection Limit Standard (CRA) or (CRL)	High failure: All detections for failing analytes less than or equal to 5x the concentration in the CRL for all associated samples are qualified as estimated. Low failure: All failing analytes less than or equal to 5x the RL for all associated samples are qualified as estimated.
Internal Standard (IS)	All analytes associated with the failing IS are qualified as estimated.
Surrogate Spike (SURRE)	High failure: All detections for all analytes associated with the failing surrogate are qualified as estimated. Low failure: All analytes associated with the failing surrogate are qualified as estimated. If obvious chromatographic interference with the surrogate is present, qualification may not be necessary and will be based on the professional judgment of the analyst.

Note: The J Qualifier is used to indicate an estimated value.