



IFCB Algal Analysis Report - HAB Taxa

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PLEASE READ ALL INFORMATION BEFORE INTERPRETING DATA

IFCB Analysis Overview:

The Imaging FlowCytobot (IFCB, McLane Research Laboratories, Inc.) is an automated submersible imaging flow cytometer that generates high-resolution images of suspended particles in-flow. At PhycoTech, Inc. we use the IFCB as a bench instrument to provide a rapid, high-level picture of algal assemblage. The IFCB can trigger on image particulates between 2-250 µm, however, it most reliably tallies particulates 8-250 µm. The average overall algal GALD across all phytoplankton analyzed at PhycoTech (n>10K) is approximately 50 µm. IFCB captured images are classified using a random forest classifier model that we are constantly building and improving.

Important Analysis Information:

1. Live samples are tallied more accurately than preserved samples.
2. Unpreserved samples received more than 24 hours after sampling will provide unreliable results.
3. 'Unclassified' images (see below) are included in 'Total Algae' counts (1 NU as 1 cell per image).
4. Picoplankton may be entrained in 'Detritus'. These cells are not counted and biovolume is not calculated.
5. Although not included in the Taste and Odor (TO) functional group, some diatoms may cause taste and odor events.
6. IFCB data is semi-quantitative. Concentration and total biovolume have not yet been fully compared to manual measurements for validation or calibration for all systems and system types. The data produced has the most utility comparing dominant taxa groups, functional class and thresholds of critical water quality indicators.
7. The processing of your sample with the IFCB produces an abundant number of images, more than a manual counter would be able to see. Due to differences in counting methods, the data in this report cannot be directly compared to a manual count.
8. IFCB images for your samples are archived at PhycoTech, Inc., and are available via a 'box' link upon request (please allow 7 business days for delivery).

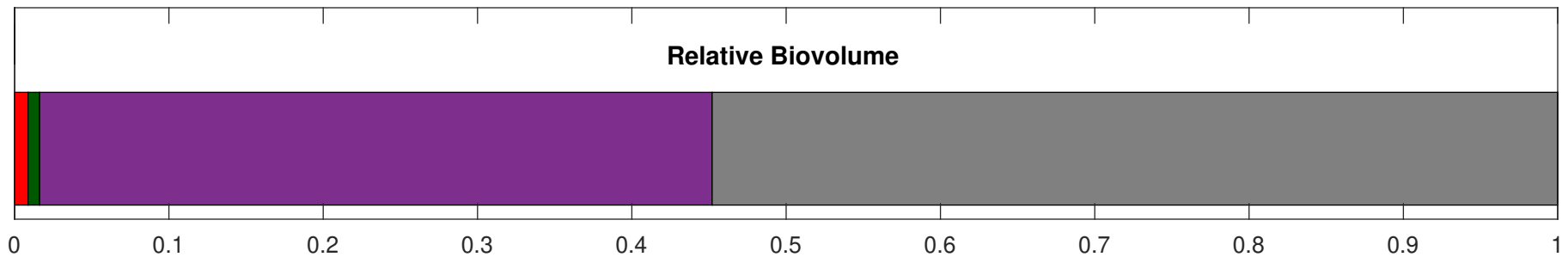
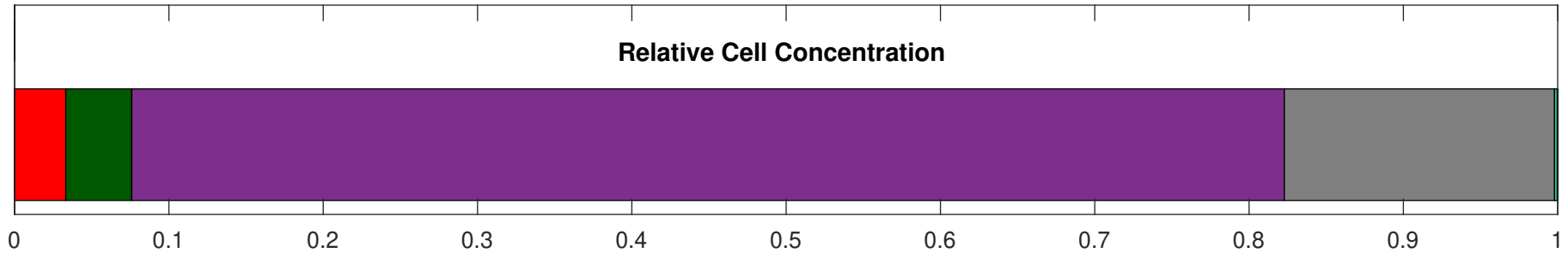
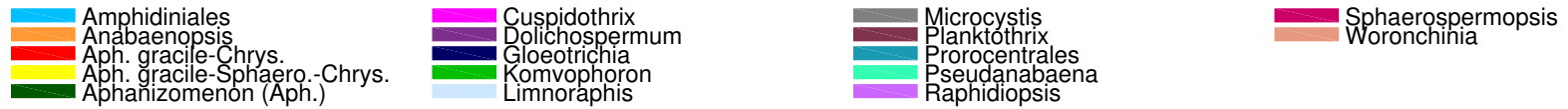
NOTE - Aphanizomenon taxa abbreviations:

<u>IFCB Taxa ID</u>	<u>Taxa included</u>	<u>Notes</u>
Aph. flos-aquae	Aphanizomenon flos-aquae	May produce saxitoxin.
Aph. gracile-Sphaero.-Chrys.	Aphanizomenon gracile, Sphaerospermopsis, & Chrysochlorum	May produce microcystin, anatoxin A, and/or cylindrospermopsin.

Sample ID: D20210803T145931
Customer ID: 390
Tracking Code: 210024-390

System: Indian Lake
Site: Cove 7
Station: NaN

Date Sampled: 8/2/2021
Date Received: 8/3/2021
Date Analyzed: 8/3/2021



Total Algal Concentration: 77051 cells/mL
HAB Concentration: 68727 cells/mL
HAB Relative Concentration: 89%

Total Biovolume: 30553162 $\mu\text{m}^3/\text{mL}$
HAB Biovolume: 21450643 $\mu\text{m}^3/\text{mL}$
HAB Relative Biovolume: 70%

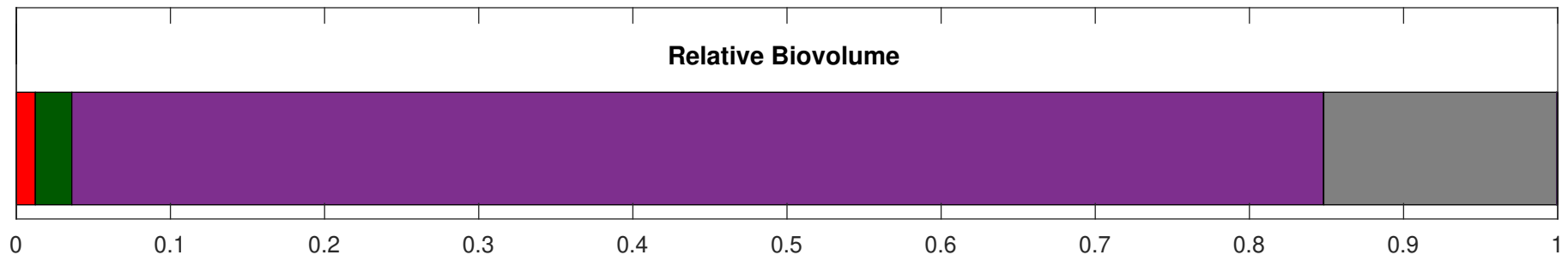
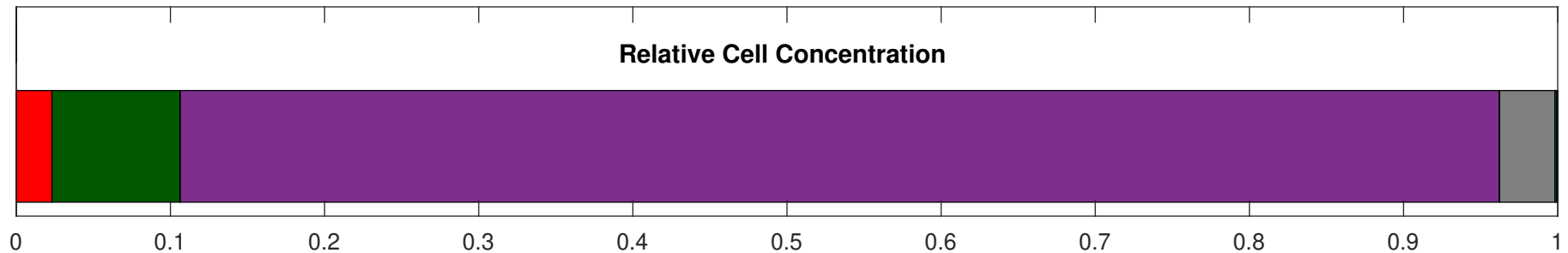
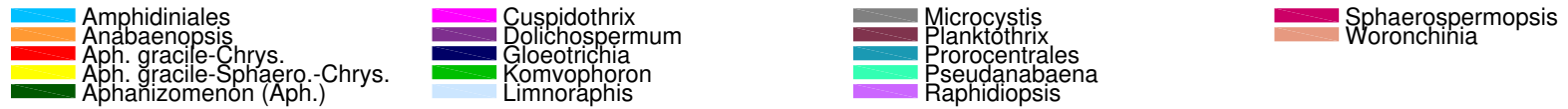
! WARNING !

HAB concentration is high - Toxin testing recommended.

Sample ID: D20210803T153051
Customer ID: 390
Tracking Code: 210025-390

System: Indian Lake
Site: Beach
Station: NaN

Date Sampled: 8/2/2021
Date Received: 8/3/2021
Date Analyzed: 8/3/2021



Total Algal Concentration: 56443 cells/mL
HAB Concentration: 50021 cells/mL
HAB Relative Concentration: 89%

Total Biovolume: 13670381 $\mu\text{m}^3/\text{mL}$
HAB Biovolume: 9264049 $\mu\text{m}^3/\text{mL}$
HAB Relative Biovolume: 68%

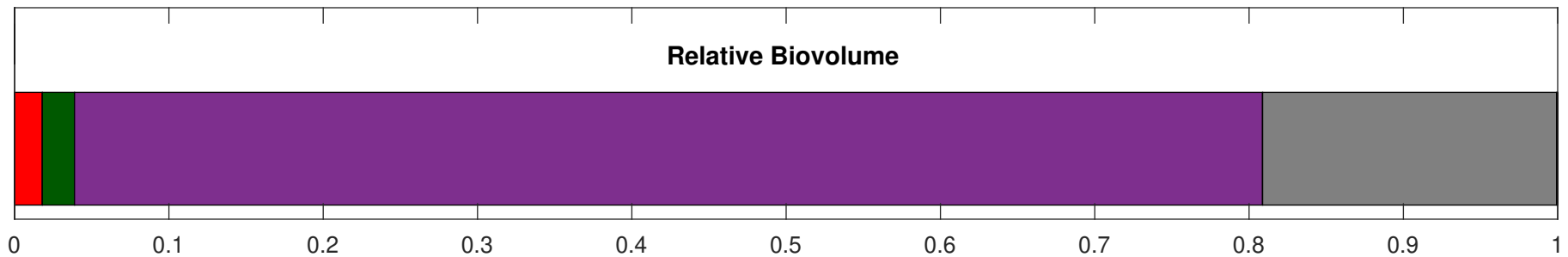
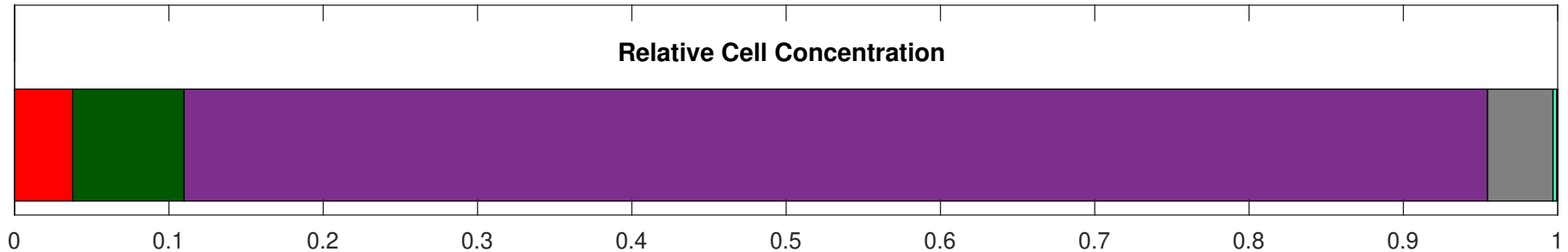
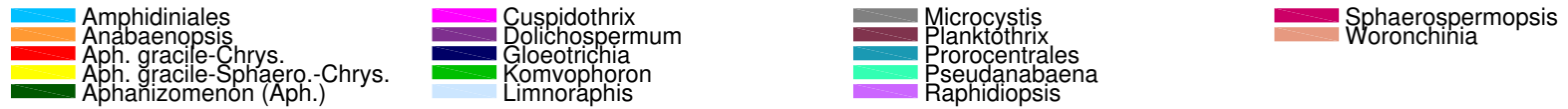
! WARNING !

HAB concentration is high - Toxin testing recommended.

Sample ID: D20210803T155108
Customer ID: 390
Tracking Code: 210026-390

System: Indian Lake
Site: Hamm
Station: NaN

Date Sampled: 8/2/2021
Date Received: 8/3/2021
Date Analyzed: 8/3/2021



Total Algal Concentration: 68316 cells/mL
HAB Concentration: 62393 cells/mL
HAB Relative Concentration: 91%

Total Biovolume: 16125551 $\mu\text{m}^3/\text{mL}$
HAB Biovolume: 11048890 $\mu\text{m}^3/\text{mL}$
HAB Relative Biovolume: 69%

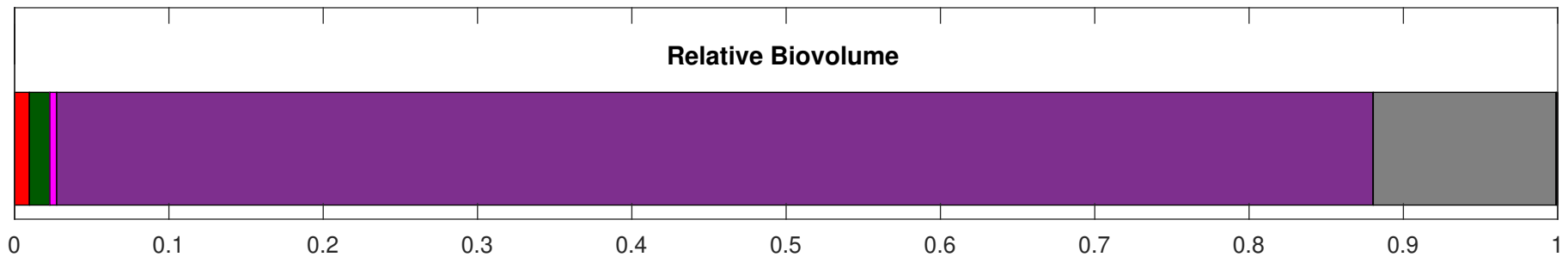
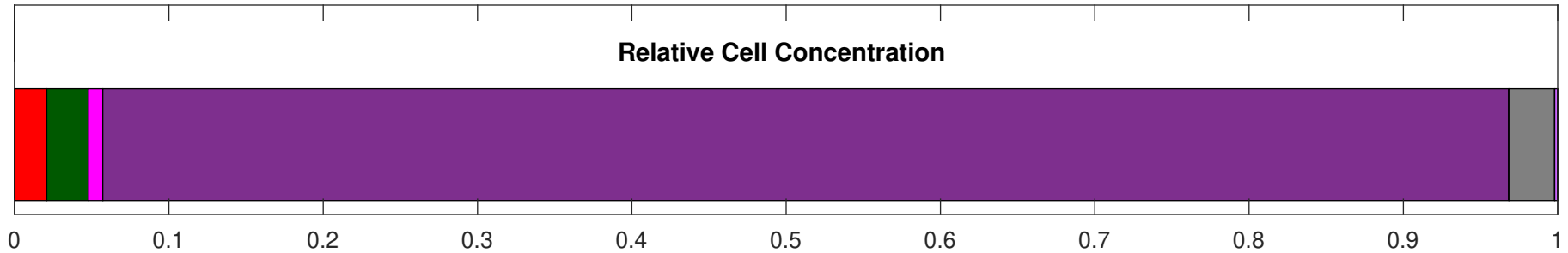
! WARNING !

HAB concentration is high - Toxin testing recommended.

Sample ID: D20210803T164345
Customer ID: 390
Tracking Code: 210027-390

System: Indian Lake
Site: Cove 1
Station: NaN

Date Sampled: 8/2/2021
Date Received: 8/3/2021
Date Analyzed: 8/3/2021



Total Algal Concentration: 49217 cells/mL
HAB Concentration: 44308 cells/mL
HAB Relative Concentration: 90%

Total Biovolume: 11295546 $\mu\text{m}^3/\text{mL}$
HAB Biovolume: 7605005 $\mu\text{m}^3/\text{mL}$
HAB Relative Biovolume: 67%

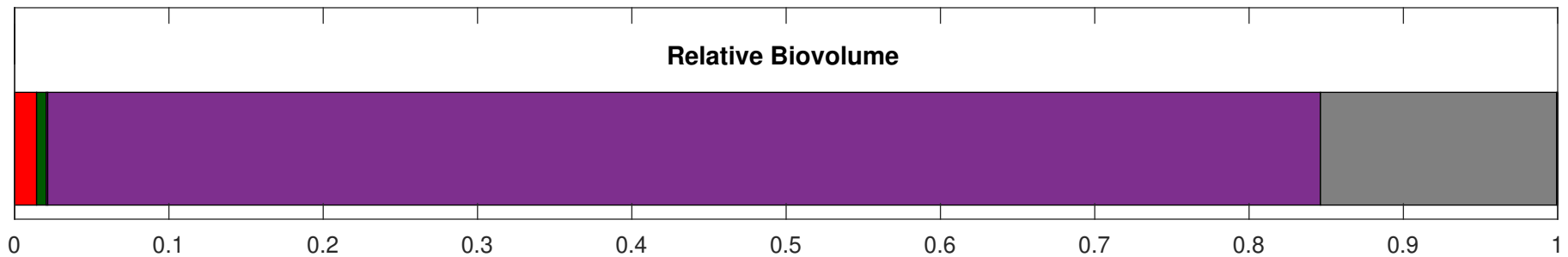
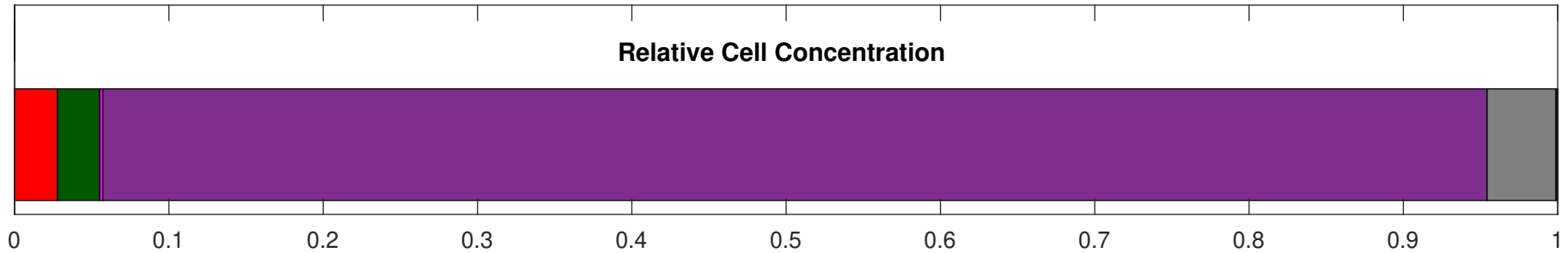
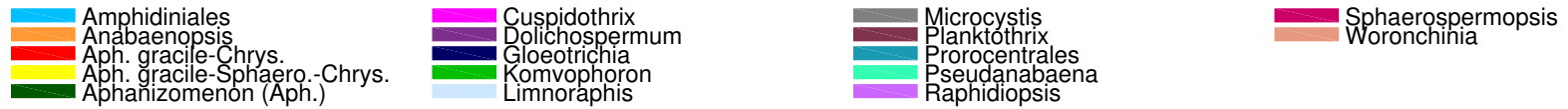
! WARNING !

HAB concentration is high - Toxin testing recommended.

Sample ID: D20210803T173003
Customer ID: 390
Tracking Code: 210028-390

System: Indian Lake
Site: Dam
Station: NaN

Date Sampled: 8/2/2021
Date Received: 8/3/2021
Date Analyzed: 8/3/2021



Total Algal Concentration: 52824 cells/mL
HAB Concentration: 48225 cells/mL
HAB Relative Concentration: 91%

Total Biovolume: 12135410 $\mu\text{m}^3/\text{mL}$
HAB Biovolume: 7978223 $\mu\text{m}^3/\text{mL}$
HAB Relative Biovolume: 66%

! WARNING !

HAB concentration is high - Toxin testing recommended.

