Lake Management Committee's Response Strategy for Lake Roaming Rock Algal Toxin Testing

The recommendations presented in this document are based on a review of the current recommendations from the USEPA, the State of Ohio Harmful Algal Bloom Response Strategy for Recreational Waters (2016), as well as past results obtained at Lake Roaming Rock. Should the recommendations change, this document should be revised accordingly. This represents a consensus opinion of the current LMC.

Summary
The Algal Toxin testing program includes testing for the presence of microcystin in the water at the two beaches. Testing should be at least on a monthly basis, preferably prior to major holidays. Additional testing date can be added as deemed necessary. Should the levels of microcystin exceed the limits set down in the 2016 State of Ohio Response Strategy for Recreational Waters, it is recommended that the Board of Directors authorize posting of warning signs at the affected beach. The Ohio Response Strategy recommends that signs not be removed until testing results for two consecutive samplings taken a week apart are below the advisory limits, detailed in the this report.

Introduction
Cyanobacteria can generate toxins that can have adverse effects on humans (and pets). One visual manifestation of cyanobacteria is the production of a green coloration on the surface of the body of water, referred to as a Hazardous Algal Bloom or HAB. The State of Ohio's strategy for recreational water involves two advisory levels, shown below for the major algal toxins. The Elevated Advisory is associated with a suggestion to avoid all contact with the affected water.

Table I. Numerical thresholds (µg/L or ppb) for Cyanotoxins in Recreational Water (2016)

Information Sign	Microcystin	Anatoxin-a	Cylindrospermopsin	Saxitoxin
Public Health Advisory	6	80	5	0.8
Elevated Public Health Advisory	20	300	20	3

(for microcystin and saxitoxin, the levels represent the total concentration of all congeners)

Testing Protocols
Testing will be done at the two beaches at a minimum once per month from May thru August. Sampling will include at least 3 sub-samples per site which are then combined into a composite. Each composite is to be tested for microcystin by a certified laboratory. Prior results conducted for the level of saxitoxin and cylindrospermopsin over several years showed them to be at or near detection limits. Since most Ohio beaches are tested for microcystin only, the same practice will be done at LRR.

A formal test report will be prepared by the lab and distributed via email to designated LMC and RomeRock Association (RRA) personnel.

Notifications – Signage

No signs for toxins will be posted as long as the values remain below the advisory levels. If the values at either site exceeds the levels listed in Table I, the Board or designate will be notified. The Board will then authorize that the appropriate sign be posted at both beaches, and that an e-blast be issued immediately after the results have been received. (Advisory signs are shown below)

The Ohio 2016 Strategy recommends that should the value exceed one of the advisory levels, that the sign remain posted until such time that two consecutive results obtained a week apart show results below the advisory limit. For example, should the level exceed 20 ppb, the Danger sign is posted. If the results of two consecutive tests show the result to be below 20 but above 6, the Danger sign will be replaced with the Warning sign. Either sign can be removed if the consecutive results are below 6 ppb. It is recommended by the LMC that this practice be used for Lake Roaming Rock should this occur. This may result in additional testing not currently budgeted by the LMC, so Board contact in the case of a continued Advisory is necessary to obtain appropriate approvals for the additional testing.

The normal weekly e-blast will include the most recent test results. All data will be archived in the LMC section of the RRA website.

Prepared for the Board of Directors by

Lake Management Committee