Testimony of
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Cyanotoxins in Drinking Water
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Good morning. I am Lynn Thorp, National Campaigns Director at Clean Water Action. We appreciate the opportunity to provide testimony at today's hearing. Clean Water Action is a national organization working in 15 states on a wide range of environmental and health issues. Our work includes a focus on Safe Drinking Water Act implementation and on protecting drinking water sources through upstream pollution prevention programs.

Clean Water Action urges the Committee to use its authority and to work with all other relevant Committees and Members of Congress to support aggressive action to reduce the nitrogen and phosphorus pollution that cause Harmful Algal Blooms, which in turn produce cyanotoxins. The most cost-effective and common sense way to prevent cyanotoxin contamination of drinking water sources is to reduce the nitrogen and phosphorus – or nutrient – pollution that is causing numerous other drinking water, public health, environmental and economic impacts. Some states, including Ohio, the U.S. Environmental Protection Agency and the drinking water utility sector have acted expeditiously to address emerging information about public health risks of some cyanotoxins in drinking water. These efforts should continue. However, action to address only cyanotoxins in drinking water is woefully inadequate and risks transferring the burden of pollution control to Public Water Systems and their customers, as well as to those relying on private wells for their drinking water.

Nitrogen and phosphorus pollution is a multi-faceted, growing and serious threat to water quality and public health. Despite a preponderance of evidence and numerous federal and state efforts to address the problem, it is getting worse. Occurrence of cyanotoxins known to cause health impacts at levels of concern in drinking water sources is the latest example of the outcomes of failing to address this nutrient pollution at its source.

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Nitrogen and Phosphorus Pollution is Increasing

Sources of nitrogen and phosphorus pollution include agriculture (excess fertilizer, manure and soil erosion), stormwater, sewer and septic systems and fossil fuel use in electric power generation, industry, transportation and agriculture. Population growth is leading to increased nitrogen and phosphorus pollution. Climate change exacerbates the problem. For example, poor soil quality leads to application of more nitrogen and phosphorus fertilizer. Warmer temperatures and extreme weather events lead to more algal blooms at different times of year, including the Harmful Algal Blooms which produce cyanotoxins.

Nitrogen and Phosphorus Pollution Cause Public Health Risk in Drinking Water & Cost the American People Money

U.S. EPA has identified three cyanotoxins for which enough occurrence and health data exist to place them on the Safe Drinking Water Act Contaminant Candidate List. The state of Ohio has set thresholds for drinking water for four cyanotoxins. These cyanotoxins cause liver, nerve and skin damage. They are produced by some Harmful Algal Blooms.

Nitrogen also contributes to development of nitrate in drinking water. Children under six months of age are particularly susceptible to the effects of nitrates in drinking water, which include respiratory problems and methemoglobinemia or "blue baby syndrome." Additional drinking water treatment for nitrates has led to significant increased costs for Public Water Systems and their consumers.

Nitrogen in drinking water can increase formation of disinfection byproducts in drinking water treatment plants, resulting in treatment complications and increased costs to prevent byproduct development in order to meet SDWA regulations and protect public health.

Nitrogen and Phosphorus Cause Numerous Other Environmental Problems and Have Negative Impacts on Local Economies

Nitrogen and phosphorus – nutrient pollution – result in many other negative impacts including: dead zones; impaired water quality; impacts on fishing and recreation and harm to wildlife, livestock and pets. According to EPA:

- The 15,000 nutrient-related impairment listings in 49 states is likely to be a underestimate
- There are 168 hypoxic zones in U.S. waters
- 78% of Assessed coastal areas exhibit eutrophication symptoms

Nutrient pollution is causing economic losses due to impacts on fishing and recreation and other water quality problems. This recognized and severe threat is growing and population growth ensures that it

will continue to do so if not addressed through aggressive efforts to prevent nitrogen and phosphorus pollution.

EPA and State Action – Continued Expeditious Action on Drinking Water Demands Adequate Resources

EPA and some states have taken expeditious action to address emerging information on public health risks from some cyanotoxins in drinking water. For example, the state of Ohio's Public Water System Harmful Algal Bloom Reponse Strategy, which began in response to the National Lakes Assessment data released in 2009, includes monitoring of drinking water sources, reservoir management strategies, drinking water treatment optimization and development of drinking water thresholds for four cyanotoxins.

EPA has placed three cyanotoxins in the 3rd SDWA Contaminant Candidate List, which sets in motion research and analysis to support potential regulation. EPA is also conducting a Toxicity Assessment and a Human Health Assessment and developing Drinking Water Health Advisories for cyanotoxins of concern. EPA's research into analytical methods is also critical to assessing the scope of the problem and being able to measure cyanotoxins consistently.

These state and federal efforts are important to protecting public health where cyanotoxins connected to drinking water risk are present in source water. EPA is conducting these activities in the face of stagnant or shrinking budgets and inadequate capacity to implement the Safe Drinking Water Act and to conduct the scientific assessments and other steps required by the statute. Similar resource constraints limit the capacity of state drinking water programs to address drinking water threats as aggressively as the public and state and federal law demand.

Our Nation's Water Laws Should Work Together

Integration of the Clean Water Act and the Safe Drinking Water Act has been an area of increasing interest to diverse stakeholders during the past decade, is part of EPA's 2010 Drinking Water Strategy and is embodied in EPA's Strategic Plan for 2011-2015. Using Clean Water Act authority to prevent the nitrogen and phosphorus pollution that leads to drinking water threats is consistent with EPA's pollution prevention goals, which state that the burden of contamination caused by upstream activity should not be shifted to a downstream user through potential treatment costs. EPA should use all available Clean Water Act authority to address all sources of nitrogen and phosphorus loadings not only to protect drinking water but to address the numerous other impacts of nutrient pollution. Despite the agriculture exemption in the Clean Water Act, progress can be made on addressing this significant source of the pollution that contributes to cyanotoxin production and other public health and environmental impacts. A good example is the Chesapeake Bay TMDL (Total Maximum Daily Load clean-up plan), in which

federal, state and local jurisdictions will partner to reduce nitrogen loadings by 25% and phosphorous loadings by 24%.

EPA also has several immediate opportunities to protect drinking water and to address the nitrogen and phosphorus pollution which leads to cyanotoxin production and other public health and environmental risks. For example:

- EPA and the U.S. Army Corps of Engineers (Corps) proposed *Definition of Waters of the United States Under the Clean Water Act* (Clean Water Rule) clarifies the protection afforded to streams, wetlands and other waters under Clean Water Act programs. Streams and wetlands are a vital part of our nation's water infrastructure, and their role in filtering pollutants including nitrogen before they make their way to larger surface waters is critical in light of growing nutrient pollution. In *Connectivity of Streams and Wetlands to Downstream Waters*, a synthesis of scientific literature, EPA notes that one study demonstrated that the complex processes occurring in small streams can remove as much as 20-40% of nitrogen before it makes its way to larger water bodies downstream. EPA found current scientific literature to be "replete" with data supporting the role of wetlands as sinks for nutrients. Protecting these natural pollution filters is a common sense way to protect drinking water sources and prevent other negative impacts of nitrogen and phosphorus pollution.

- Clean Water Act *Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category* are currently being finalized. According to EPA, power plants discharge 30 million pounds of nitrogen and 682,000 pounds of phosphorus annually into surface water. A strong final rule which prevents the maximum amount of nutrient discharges from power plants is a common-sense way for the Clean Water Act to work to protect drinking water sources and to prevent other environmental and economic impacts.

- In all Clean Water Act rulemaking, EPA should quantify the benefits of avoided drinking water treatment cost and reduced public health risks when Clean Water Act programs will reduce contamination of drinking water sources.

Other Federal Agencies, State and Local governments and Other Stakeholders

EPA is not the only federal agency with a role in protecting drinking water sources from the Harmful Algal Blooms that produce cyanotoxins and in reducing the nitrogen and phosphorus pollution responsible for numerous environmental and economic impacts. For example, the U.S. Department of Agriculture Natural Resources Conservation Service programs play a critical role in helping farmers reduce polluted runoff. State nutrient reduction programs, including setting numeric nutrient criteria with assistance from EPA, are critical components of nitrogen and phosphorus pollution reduction. States can also put nutrient management programs in place, prohibit manure spreading that leads to the

highest runoff including when the ground is frozen and require stream buffers. Local land use and zoning decisions can also be used to address sources of nutrient pollution including stormwater runoff.

Innovative programs like the Source Water Collaborative can also support action to reduce nitrogen and phosphorus pollution. The Source Water Collaborative is made up of diverse stakeholders including regulators, drinking water utility representatives, planners, environmental and health organizations and others working together to advance drinking water source protection at the local, state and federal levels.

Putting Drinking Water First Has Multiple Benefits

The Safe Drinking Water Act is implemented with a "multi-barrier" approach, which starts with source water protection. Preventing drinking water contamination is a common-sense way to keep pollutants out of the drinking water that goes into the drinking water treatment plant and to avoid increased costs to those paying water bills when contamination and regulation leads to the need to install new treatment. Public Water Systems and their ratepayers should not be responsible for cleaning up pollution that can be prevented before it gets into drinking water sources. As noted above, transferring the burden of pollution onto downstream users is counter to EPA's own policy. Regulating cyanotoxins in drinking water is not sufficient to prevent this shift of burden and will not address the many other environmental and economic impacts of nitrogen and phosphorus pollution. In our work, Clean Water Action advocates for Putting Drinking Water First, which means making decisions about upstream activities with a focus on potential drinking water impacts downstream. Putting Drinking Water First not only results in better drinking water protection but leads to better choices which can prevent other environmental and economic impacts. This is certainly true when it comes to excessive nutrients. Curbing nitrogen and phosphorus pollution is the right choice for drinking water protection and is the "multi-benefit approach."