H.R. 212, THE DRINKING WATER PROTECTION ACT

HEARING

BEFORE THE

SUBCOMMITTEE ON ENVIRONMENT AND THE ECONOMY

OF THE

COMMITTEE ON ENERGY AND COMMERCE

HOUSE OF REPRESENTATIVES

ONE HUNDRED FOURTEENTH CONGRESS

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H.R. 212, THE DRINKING WATER PROTECTION ACT

THURSDAY, FEBRUARY 5, 2015

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON ENVIRONMENT AND THE ECONOMY,
COMMITTEE ON ENERGY AND COMMERCE
Washington, DC.

The subcommittee met, pursuant to call, at 10:10 a.m., in room 2123, Rayburn House Office Building, Hon. John Shimkus, (chairman of the subcommittee) presiding.

Present: Representatives Shimkus, Harper, Whitfield, Pitts, Murphy, Latta, McKinley, Johnson, Bucshon, Flores, Hudson, Cramer, Upton (ex officio), Tonko, Schrader, Capps, McNerney, and Pallone (ex officio).

Staff Present: Nick Abraham, Legislative Clerk; Gary Andres, Staff Director; Charlotte Baker, Deputy Communications Director; Sean Bonyun, Communications Director; Leighton Brown, Press Assistant; Jerry Couri, Senior Environmental Policy Advisor; Brad Grantz, Policy Coordinator, O&I; Brittany Havens, Legislative Clerk; David McCarthy, Chief Counsel, Environment and the Economy; Chris Sarley, Policy Coordinator, Environment and the Economy; Joe Banez, Minority Policy Analyst; Jeff Carroll, Minority Staff Director; Jacqueline Cohen, Minority Senior Counsel; Rick Kessler, Minority Staff Director, Energy and Environment; Tim Robinson, Minority Chief Counsel; and Ryan Schmit, Minority EPA Detailee.

OPENING STATEMENT OF HON. JOHN SHIMKUS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. SHIMKUS. The hearing will now come to order.

We will start with opening statements, and I will start first. We are still waiting on the ranking member, Mr. Tonko, and I think Chairman Upton. We will then give them the opportunity to give their opening statements when they arrive. So I will recognize myself for 5 minutes.

Today we examine legislation that creates a framework for better understanding and addressing the risks posed by algal toxins and can show up in some drinking water. I thank Representative Latta for his efforts on this issue and for bringing it to the subcommittee's attention last fall.

Some folks may be tempted to think there are easy solutions to this problem, but, from our hearing this past November, we learned we have a long way to go to understand it. The diversity of algae and their habitats only complicate the problem.

The legislation we are reviewing moves in the right direction. First, the legislation requires the EPA within 90 days to develop and submit a strategic plan to Congress for assessing and managing risks from cyanotoxins in drinking water provided by public water systems.

This plan will detail the six critical steps as well as the timelines EPA intends to use: identify information gaps to be filled and evaluate human health risk; publish a comprehensive list of algal toxins that are harmful, as well as what those harmful efforts are; identify what makes these algae harmful; determine how to use public health advisories to inform testing and monitoring of these algal toxins, as well as look at where EPA needs better information for testing and monitoring; and then suggest treatment options; and, finally, provide technical assistance to States and public water systems.

Most importantly, this strategic plan is a living document and can be updated as warranted after the deadline expires. H.R. 212 also calls on EPA to consult with other Federal agencies, States, and others actively analyzing cyanotoxins and their impact on public health and to publish the information possessed by the Federal Government.

Finally, H.R. 212 requires the Government Accountability Office to inventory and report to Congress on Federal spending between fiscal years 2010 and 2014 on analysis and public health efforts of the Federal Government on cyanotoxins, including the specific purpose for which the funds were made available, the law under which the funds were authorized, the Federal agency that received or spent the funds, and recommended steps to reduce any duplication and improve interagency coordination of such expenditures.

[The bill follows:]

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114TH CONGRESS
1ST SESSION

H. R. 212

To amend the Safe Drinking Water Act to provide for the assessment and management of the risk of cyanotoxins in drinking water, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JANUARY 8, 2015

Mr. LATTA (for himself, Mrs. MILLER of Michigan, Mr. QUIGLEY, and Ms. KAPTUR) introduced the following bill; which was referred to the Committee on Energy and Commerce

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A BILL

To amend the Safe Drinking Water Act to provide for the assessment and management of the risk of cyanotoxins in drinking water, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Drinking Water Protection Act".

SEC. 2. AMENDMENT TO THE SAFE DRINKING WATER ACT.

(a) AMENDMENT.—At the end of part E of the Safe Drinking Water Act (42 U.S.C. 300j et seq.) add the following new section:

"SEC. 1459. CYANOTOXIN RISK ASSESSMENT AND MANAGEMENT.

"(a) STRATEGIC PLAN.—

"(1) DEVELOPMENT.—Not later than 90 days after the date of enactment of this section, the Administrator shall develop and submit to Congress a strategic plan for assessing and managing risks associated with cyanotoxins in drinking water provided by public water systems. The strategic plan shall include steps and timelines to—

"(A) evaluate the risk to human health from drinking water provided by public water systems contaminated with cyanotoxins;

"(B) establish, publish, and update a comprehensive list of cyanotoxins determined by the Administrator to be harmful to human health when present in drinking water provided by public water systems;

"(C) summarize—

"(i) the known adverse human health effects of cyanotoxins included on the list published under subparagraph (B) when present in drinking water provided by public water systems; and

"(ii) factors that cause cyanobacteria to proliferate and express toxins;

"(D) with respect to cyanotoxins included on the list published under subparagraph (B), determine whether to—

"(i) publish health advisories pursuant to section 1412(b)(1)(F) for such cyanotoxins in drinking water provided by public water systems;

"(ii) establish guidance regarding feasible analytical methods to quantify the presence of cyanotoxins; and

"(iii) establish guidance regarding the frequency of monitoring necessary to determine if such cyanotoxins are present in drinking water provided by public water systems;

"(E) recommend feasible treatment options, including procedures and equipment, to mitigate any adverse public health effects of cyanotoxins included on the list published under subparagraph (B); and

"(F) enter into cooperative agreements with, and provide technical assistance to, affected States and public water systems, as identified by the Administrator, for the purpose of managing risks associated with cyanotoxins in-

cluded on the list published under subparagraph (B).

"(2) UPDATES.—The Administrator shall, as appropriate, update and submit to Congress the strategic plan developed under paragraph (1).

"(b) INFORMATION COORDINATION.—In carrying out this section the Administrator shall—

"(1) identify gaps in the Agency's understanding of cyanobacteria, including—

"(A) the human health effects of cyanotoxins included on the list published under subsection (a)(1)(B); and

"(B) methods and means of testing and monitoring for the presence of harmful cyanotoxins in source water of, or drinking water provided by, public water systems;

"(2) as appropriate, consult with—

"(A) other Federal agencies that—

"(i) examine or analyze cyanobacteria; or

"(ii) address public health concerns related to harmful algal blooms;

"(B) States;

"(C) operators of public water systems;

"(D) multinational agencies;

"(E) foreign governments; and

"(F) research and academic institutions; and

"(3) assemble and publish information from each Federal agency that has—

"(A) examined or analyzed cyanobacteria; or

"(B) addressed public health concerns related to harmful algal blooms.

"(c) USE OF SCIENCE.—The Administrator shall carry out this section in accordance with the requirements described in section 1412(b)(3)(A), as applicable.

"(d) FEASIBLE.—For purposes of this section, the term 'feasible' has the meaning given such term in section 1412(b)(4)(D).".

(b) REPORT TO CONGRESS.—Not later than 90 days after the date of enactment of this Act, the Comptroller General of the United States shall prepare and submit to Congress a report that includes—

(1) an inventory of funds—

(A) expended by the United States, for each of fiscal years 2010 through 2014, to examine or analyze cyanobacteria or address public health concerns related to harmful algal blooms; and

(B) that includes the specific purpose for which the funds were made available, the law under which the funds were authorized, and the Federal agency that received or spent the funds; and

(2) recommended steps to reduce any duplication, and improve interagency coordination, of such expenditures.

○

Mr. SHIMKUS. I want to welcome and thank our witnesses who are joining us or rejoining us today, as the case may be. We look forward to hearing from them on what happened this past August in Ohio and what lessons were learned and whether H.R. 212 helps. We will also get a better sense of what drinking-water treatment professionals need to better prepare to handle these events.

We are all eager to hear from our witnesses. And, with that, I have some time remaining. Seeing no—the gentleman from Ohio.

[The prepared statement of Mr. Shimkus follows:]

PREPARED STATEMENT OF HON. JOHN SHIMKUS

Today, we examine legislation that creates a framework for better understanding and addressing the risk posed by algal toxins that can show up in some drinking water. I thank Representative Latta for his efforts on this issue and for bringing it to the subcommittee's attention last fall.

Some folks may be tempted to think there are easy solutions to this problem, but from our hearing this past November, we learned we have a long way to go to understand it. The diversity of algae and their habitats only complicate the problem. The legislation we are reviewing moves in the right direction.

First, the legislation requires EPA, within 90 days, to develop and submit a strategic plan to Congress for assessing and managing risks from cyanotoxins in drinking water provided by public water systems. This plan will detail the six critical steps as well as the timelines EPA intends to use to:

- Identify information gaps to be filled and evaluate human health risks,
- publish a comprehensive list of algal toxins that are harmful as well as what those harmful effects are,
- identify what makes these algae harmful,
- determine how to use public health advisories to inform testing and monitoring of these algal toxins, as well as look at where EPA needs better information for testing and monitoring,
- suggest treatment options, and
- provide technical assistance to states and public water systems.

Most importantly, this strategic plan is a living document and can be updated as warranted after the deadline expires.

H.R. 212 also calls on EPA to consult with other Federal agencies, states, and others actively analyzing cyanotoxins and their impact on public health, and to publish the information possessed by the Federal government.

Finally, H.R. 212 requires the Government Accountability Office to inventory and report to Congress on Federal spending, between fiscal years 2010 and 2014, on analyses and public health efforts of the Federal government on cyanotoxins, including the specific purpose for which the funds were made available, the law under which the funds were authorized, the Federal agency that received or spent the funds, and recommended steps to reduce any duplication, and improve interagency coordination, of such expenditures.

I want to welcome and thank our witnesses who are joining, or rejoining us today, as the case may be. We look forward to hearing from them on what happened this past August in Ohio, and what lessons were learned and whether H.R. 212 helps. We'll also get a better sense of what drinking water treatment professionals need to better prepare to handle these events.

Mr. LATTA. Well, thank you, Mr. Chairman.

And, first, I want to thank you for calling this hearing today, and, also, I want to thank our witnesses for being here.

I really appreciate working with Dr. Grevatt and Mr. Baker and their office over the past months on this issue. Their expertise and guidance has been an immense help in putting together the quality bill that is before us today in H.R. 212, the Drinking Water Protection Act, that will help ensure our citizens' public drinking water and health are protected from the threat of algal toxins. This working relationship has and continues to be a perfect example of how the Federal Government and the States can work together to put

forth quality solutions to problems that affect millions of our citizens.

Unfortunately, the cyanotoxins and algal toxins in public drinking water produce some harmful algal blooms that are presenting a serious concern for our Nation's citizens. Last August, over a half a million people in the polluted area, many of which are residents of my district, were unable to utilize their water for over 2 days without risking potentially negative health effects due to a high level of the cyanotoxin Microcystin-LR detected in the city's water supply.

During that time, both concerns and questions were raised about the testing protocols, treatment processes, and appropriate responses on how to respond to the problem in the short term.

I know from my personal experience that the State, including Mr. Baker and the Ohio EPA Director Butler, worked tirelessly with the U.S. EPA and with the city and other local officials to get this situation under control. I commend their hard work and the steps they have taken since to try to ensure that this does not occur again.

Furthermore, while Microcystin-LR is believed to be the most common and toxic variant, countless other microcystin variants and other algal toxins threaten the health and safety of public drinking water. Unfortunately, scientific and health data and research has not kept up with this growing, complicated problem.

I believe H.R. 212, the Drinking Water Protection Act, which will put forth a strategic plan for assessing and managing risks associated with cyanotoxins in drinking water provided by public water systems, takes the robust and strong scientific approach we need to protect the health and safety of our public drinking water and better understand this issue in the short term and in the long term.

Again, I want to thank you all for being here today. I greatly appreciate all your hard work on this and the testimony that you are going to give today.

And, Mr. Chairman, I would also like to thank the committee staff and my staff for their hard work on this legislation.

And, with that, I yield back.

Mr. SHIMKUS. The gentleman yields back his time.

The chair now recognizes the ranking member of the full committee, Mr. Pallone, for 5 minutes.

Mr. PALLONE. Thank you, Mr. Chairman.

Harmful algal blooms are a serious and growing threat to public health. The toxins they produce threaten communities that draw their water from coastal areas in the Great Lakes, and they also pose risks to those who swim in contaminated waters or eat contaminated fish.

Health impacts include skin and eye irritation, gastrointestinal illness, cancer, paralysis, and even death. Economic impacts are also serious, affecting fishing, recreation, and tourism. Estimates of annual costs in the United States are in the billions.

This summer, Toledo, Ohio experienced a profound disruption when citizens woke to a do-not-drink order. And as we will hear from the second panel, the impacts were significant and widespread.

But the problem—and I stress—is not limited to Ohio or Lake Erie. Harmful algal blooms have been a recurring problem in my home State in New Jersey for decades. And so I appreciate that the majority is taking up this bipartisan legislation to begin to address this important environmental problem.

I am happy to say that language we will consider later today reflects several changes sought by Democratic members of the subcommittee, and I thank the chairman and the majority staff for working with us to improve the bill. For too long, Republicans in Congress have been more interested in attacking EPA than supporting the important work the Agency does to protect human health, and safe drinking water should be a bipartisan issue.

So I hope this bill can be the start of broader drinking-water work to address important threats like climate change, fracking, security, an aging infrastructure. My colleague from New York, the ranking member, Mr. Tonko, of the subcommittee has been a leader on drinking-water infrastructure issues. And I hope we can all work together on his legislation to reauthorize the SRF resources essential to the conversation about safe drinking water.

Much of our Nation's drinking-water infrastructure is well beyond its useful life and in desperate need of replacement. Algae and other emerging threats spurred by climate change and other factors add to the challenge. Investing in drinking-water infrastructure protects public health, creates jobs, and boosts the economy, and this is something that we should all support.

I did want to say one thing on process, though, Mr. Chairman. The majority's insistence on scheduling the markup of this bill for the same day as the legislative hearing is unfortunate and undermines regular order. And I think these are important issues that should be given due consideration under regular order. So, Mr. Chairman, I hope that you will support regular order moving forward.

And I just thank the witnesses today and yield back the balance of my—I don't think anyone else on our side wants the time?

Thank you, Mr. Chairman.

Mr. SHIMKUS. And I thank the colleague. It is still regular, but I would admit it is fast.

Seeing that the chairman is not here or the ranking member of the subcommittee, what we will do is we will turn to Dr. Grevatt from the EPA. And then, of course, those Members will be allowed to give their opening statement when they arrive.

Sir, you are recognized for 5 minutes. Your whole statement is going into the record. We thank you for coming.

STATEMENT OF PETER GREVATT, PH.D., DIRECTOR, OFFICE OF GROUNDWATER AND DRINKING WATER, U.S. ENVIRONMENTAL PROTECTION AGENCY

Mr. GREVATT. Thank you very much.

Good morning, Chairman Shimkus and members of the subcommittee. Thank you for the opportunity to be here to testify on EPA's activities to address harmful algal blooms and their impact on drinking-water supplies and on H.R. 212, the Drinking Water Protection Act.

The administration has not taken a position on this piece of legislation. And today I will provide an update on EPA's current work relevant to the bill.

Cyanobacteria are found naturally in surface waters and can rapidly multiply, causing harmful algal blooms. Factors that enhance bloom formation include light intensity, nutrient availability, water temperature, and water column stability.

Some species of cyanobacteria produce toxic compounds known as cyanotoxins. High levels of cyanotoxins in recreational waters and drinking water may cause a wide range of adverse health effects in humans, including fever, diarrhea, vomiting, and allergic reactions.

EPA expects that community drinking-water systems will continue to be vulnerable to emergency shutdowns from harmful algal blooms.

H.R. 212 would direct the EPA Administrator to develop a strategic plan for assessing and managing risk associated with cyanotoxins in drinking water providing by public water systems.

Under the bill, EPA would be directed to identify steps and a timeline for evaluating human health risks from drinking water contaminated with harmful algal blooms, create a comprehensive list of the cyanotoxins determined to be harmful to human health, develop a summary of the state of the science on human health effects of cyanotoxins and causes of cyanobacterial harmful algal blooms, recommend treatment options, and establish cooperative agreements with States and public water systems for technical assistance.

Additionally, the bill would direct EPA to determine whether to publish health advisories for such cyanotoxins as well as whether to establish guidance on analytical methods and monitoring.

Providing technical assistance on harmful algal blooms to States and public water systems is a priority for the EPA. The EPA actively seeks opportunities to work collaboratively with States and public water systems, and the Agency has several existing programs for providing technical assistance on drinking-water issues.

Currently, there are no U.S. Federal regulations concerning cyanotoxins in drinking water. The Safe Drinking Water Act establishes a number of tools, including health advisories, the Contaminant Candidate List, and the Unregulated Contaminant Monitoring Rule, to develop regulatory and nonregulatory approaches to addressing contaminants in drinking water.

EPA is preparing health advisories for Microcystin-LR and Cylindrospermopsin, two cyanotoxins commonly associated with harmful algal blooms. The health advisories will establish concentrations of drinking-water contaminants below which adverse health effects are not anticipated to occur as well as provide States, municipalities, and other local officials with technical guidance on sampling, analytical procedures, and drinking-water treatment recommendations to protect public health. We expect to finalize these health advisories in the spring of 2015.

EPA's Contaminant Candidate List identifies unregulated contaminants that are known or anticipated to occur in public water systems and which may require regulation. The EPA uses this list to prioritize research and data collection efforts. The fourth CCL

was just published yesterday, and EPA has listed several cyanobacteria or cyanotoxins on all four drinking-water CCLs.

EPA uses the Unregulated Contaminant Monitoring Rule to collect data for contaminants that do not have primary drinking-water standards and are suspected to be present in drinking water. A lack of standardized analytical methods for individual cyanotoxins has prevented EPA from including them in the current and previous rounds of UCMR. The Agency is currently developing specific analytical methods for microcystins, Anatoxin-a, and Cylindrospermopsin. EPA expects to publish these methods in the spring of 2015, in time to consider including several cyanotoxins in the fourth UCMR. Monitoring for the fourth round of the UCMR will begin in 2018.

Many communities across the United States have faced issues with cyanotoxins in drinking-water sources. For example, last year, Toledo's Collins Park Water Treatment Plant detected high levels of algal toxins resulting from a harmful algal bloom in western Lake Erie. U.S. EPA worked with the State of Ohio and the city of Toledo around the clock throughout the course of the weekend to confirm the concentrations of algal toxins and to optimize controlling of the toxins at the utility.

Shortly after the Toledo incident, EPA redirected $12 million in Great Lakes Restoration Initiative funding to Federal and State agencies to strengthen ongoing efforts to target harmful algal blooms in western Lake Erie.

While monitoring and treatment are critical for providing safe drinking water, continued source-water protection efforts and adequate investment in our Nation's water infrastructure will be necessary to prevent events such as the one in Toledo in the future.

Once again, Chairman Shimkus, Ranking Member Tonko, and members of the subcommittee, thank you for the opportunity to discuss the Drinking Water Protection Act and EPA's work on cyanotoxins in drinking water. I look forward to answering any questions you may have.

[The prepared statement of Mr. Grevatt follows:]

TESTIMONY OF
PETER C. GREVATT, Ph.D.
DIRECTOR
OFFICE OF GROUND WATER AND DRINKING WATER
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
HOUSE COMMITTEE ON ENERGY AND COMMERCE
SUBCOMMITTEE ON ENVIRONMENT AND THE ECONOMY
REGARDING H.R. 212, THE DRINKING WATER PROTECTION ACT

February 5, 2015

Good morning, Chairman Shimkus, Ranking Member Tonko, and members of the Subcommittee. I am Peter Grevatt, Director of the U.S. Environmental Protection Agency's Office of Ground Water and Drinking Water. Thank you for the opportunity to testify today on the EPA's activities to address the impact of cyanobacterial harmful algal blooms (CyanoHABs) on drinking water supplies and on H.R. 212, the Drinking Water Protection Act. The Administration has not taken a position on this piece of legislation, but I am pleased to describe the EPA's current work relevant to this bill.

Causes of CyanoHABs

Cyanobacteria are photosynthetic bacteria that share some properties with algae and are found naturally in surface waters of lakes and ponds. When conditions are favorable, cyanobacteria can rapidly multiply in surface water and cause harmful blooms. Favorable conditions that enhance bloom formation and persistence include light intensity and duration, nutrient availability (such as nitrogen and phosphorus), water temperature, pH, water flow, and water column stability. Some species of cyanobacteria produce toxic compounds, known as cyanotoxins.

Based on the surveys that have been carried out to date in U.S. waters, the most commonly identified cyanotoxins are Microcystins, Cylindrospermopsins, Anatoxins, and Saxitoxins. The specific means by which these factors promote the growth of cyanobacteria are not well understood. Point sources (which may include discharges from sewage treatment plants and concentrated animal feeding operations) and non-point sources (which may include diffuse runoff from urban stormwater, roads, and agricultural fields), can contribute the excess nitrogen and phosphorus that can promote the growth of CyanoHABs.

Health Effects of CyanoHABs

The presence of high levels of cyanotoxins in recreational waters and drinking water may cause a wide range of adverse health effects in humans including fever, headaches, muscle and joint pain, blisters, stomach cramps, diarrhea, vomiting, mouth ulcers, and allergic reactions. There have also been many documented reports of dog, bird, and livestock deaths throughout the world as the result of consumption of surface water with cyanobacterial blooms. While the precise levels of risk associated with low levels of cyanotoxins in drinking water is uncertain, the serious health effects reported following exposure of humans and pets to cyanotoxins suggest that this is an important issue to address in the nation's drinking water supplies.

H.R. 212, the Drinking Water Protection Act

H.R. 212 would direct the Administrator to develop a strategic plan for assessing and managing risks associated with cyanotoxins in drinking water provided by public water systems. The EPA would be directed to identify steps and a timeline for evaluating human health risks from drinking water contaminated with HABs, creating a comprehensive list of cyanotoxins determined to be harmful to

human health, developing a summary of the state of science on human health effects of cyanotoxins and causes of CyanoHABs, recommending treatment options, and establishing cooperative agreements with states and public water systems for technical assistance. Additionally, the bill would direct the EPA to determine whether to publish health advisories for such cyanotoxins, as well as whether to establish guidance on analytical methods and monitoring.

The EPA's Work under the Safe Drinking Water Act

The agency strongly agrees that the presence of cyanotoxins in drinking water is an important public health issue and is currently taking steps to work with states and public water systems to assess and manage of the risk of cyanotoxins in drinking water.

Currently there are no U.S. federal regulations concerning the management of harmful algal blooms in drinking water under the Safe Drinking Water Act (SDWA). The EPA has been working on finalizing health advisories for two cyanotoxins commonly associated with CyanoHABs, Microcystins and Cylindrospermopsin; available data on Anatoxin-a is not robust enough to develop a health advisory at this time. These non-regulatory health advisories will establish concentrations of drinking water contaminants below which adverse health effects are not anticipated to occur. In addition, the EPA has been actively collaborating with our stakeholders for several years by conducting studies to identify and evaluate causes, detection, treatment, and health and ecological effects in the U.S. The EPA is also collaborating with states and Canada to establish harmonized policies for cyanotoxins at the federal, state, and crossborder levels.

The Contaminant Candidate List (CCL) and the Unregulated Contaminant Monitoring Rule (UCMR) are two tools that SDWA establishes for identifying contaminants that may be subject to regulation in the nation's drinking water supplies. The fourth CCL was just published on February 4, 2015, and the EPA has included cyanobacteria and cyanotoxins on all four drinking water CCLs and is considering including Microcystins and other cyanotoxins in the fourth round of UCMR.

The CCL is a list of unregulated contaminants that are known or expected to occur in public water systems in the U.S., which may be considered for regulation. The EPA uses this list of unregulated contaminants to prioritize research and data collection efforts to help us determine whether we should regulate a specific contaminant. Based on toxicological, epidemiology, and occurrence studies, my office has focused on three of the more than 80 variants of cyanotoxins, recommending Microcystins, Anatoxin–a, and Cylindrospermopsin for further steps to consider for regulation under SDWA.

The EPA uses the UCMR to collect data for contaminants that do not have primary drinking water standards and are suspected to be present in drinking water. A lack of standardized analytical methods for individual toxins has prevented the EPA from including cyanobacterial toxins in the current and previous rounds of UCMR. The agency is currently working on the development of improved analytical methods for cyanotoxins to support a nationwide monitoring effort for Microcystins, Anatoxin-a, and Cylindrospermopsin through the UCMR. These analytical methods will allow more specific measurement of cyanotoxins at lower concentrations and with greater accuracy and precision. Upon successful validation, the EPA expects to publish these methods in the spring of 2015, in time to consider including several cyanotoxins in the fourth UCMR.

Monitoring for the fourth round of UCMR will begin 2018. However, given the urgency for responding to the ongoing challenges related to CyanoHABs, the EPA is identifying additional strategies for gathering robust data on the regional and national occurrence of CyanoHABs, such as collaborating with states and other federal agencies, including the U.S. Geological Survey and the National Oceanic and Atmospheric Administration. The 2014 reauthorization of the Harmful Algal Bloom and Hypoxia Research and Control Act (P.L. 113-124) authorizes the EPA, working with an interagency task force led by NOAA, to administer the freshwater HAB program.

The EPA expects to finalize the health advisories for two cyanotoxins commonly associated with CyanoHABs in the spring of 2015. Health advisories are not federally enforceable standards, but are intended to provide states, municipalities, and other local officials with technical guidance for protecting public health or for the development of their own guidance. The EPA is currently completing an independent external peer review of the draft health advisory for Microcystins and Cylindrospermopsin to ensure that it reflects the best available science to develop levels for these cyanotoxins below which adverse health effects are not anticipated to occur.

The EPA is also working to develop national recommended ambient water quality criteria pursuant to the Clean Water Act for the protection of human health for Microcystins, Anatoxin-a, and Cylindrospermopsin. These recommended criteria will identify levels of cyanotoxins at which adverse health effects are not anticipated to occur from drinking water or eating contaminated fish and shellfish. These levels can be used by states and tribes as they develop their water quality standards.

The EPA's website currently provides information for state and water sector professionals on the recommended treatment practices that water systems can utilize to reduce the levels of cyanotoxins in drinking water. This information will also be incorporated into the health advisory, to enable water systems and state officials to determine when steps should be taken to address elevated levels of cyanotoxins in drinking water supplies and to provide them with recommendations on effective strategies to do so.

The EPA is engaging with states and water sector professionals to provide information on human health effects, analytical screening tools, and the effectiveness of various treatment processes to remove or inactivate the three most important cyanotoxins that have been found broadly in drinking water sources in the U.S.: Microcystins, Anatoxin-a, and Cylindrospermopsin. In September 2014, the EPA published guidance to provide recommended procedures for preservation, handling, and transportation of samples collected to identify the presence of HABs in drinking water.

Incident at Toledo's Collins Park Water Treatment Plant

On Friday August 1, 2014, officials at Toledo's Collins Park Water Treatment Plant notified the Ohio Environmental Protection Agency (Ohio EPA) and U.S. EPA of an elevated sample reading for the algal toxins Microcystins. On the morning of August 2, Toledo Mayor Collins issued a "do not drink or boil" advisory, as recommended by Ohio EPA, to the nearly 500,000 customers served by the water system, leading to the declaration of a state of emergency by Ohio Governor Kasich and mobilization of the Ohio National Guard to provide emergency drinking water supplies to the impacted residents. The presence of the toxin was related to a CyanoHAB near Toledo's drinking water intake on Lake Erie.

In an effort to verify the results, the public water system requested independent laboratory analysis by the neighboring Oregon Water Treatment System, Ohio EPA, U.S. EPA, and Lake Superior State University. The U.S. EPA worked with the state and the City of Toledo around the clock over the course of the weekend to confirm the concentrations of algal toxins and to optimize controlling of the toxins at the treatment plant and in the distribution system. Subsequent adjustments at the treatment plant led to reductions in the concentrations of algal toxins in the distribution system, and Mayor Collins lifted the "do not drink or boil water" advisory and returned services to its customers on Monday, August 4.

Preventing HABs – Source Water Protection and Drinking Water Infrastructure

Many communities across the U.S. have faced issues with cyanotoxins in drinking water sources similar to the incident in Toledo. Strong source water protection programs and continued investments in the nation's drinking water infrastructure will be necessary to eliminate these sorts of events in the future.

Preventative measures are the preferred approach to managing the occurrence of cyanobacterial blooms. The most effective preventative measures are those that seek to control the anthropogenic influences that promote blooms such as the leaching and runoff of excess nutrients. Effective management practices for nutrients, specifically nitrogen and phosphorus, can reduce loadings from both point and nonpoint sources, including water treatment discharges, and runoff from urban, suburban and rural areas. These steps will be particularly important as communities face challenges with increasingly intense precipitation events that may promote the growth and persistence of HABs in the nation's source waters.

Since the Great Lakes Restoration Initiative was established in 2010, the EPA has made it a priority to fund nutrient runoff reduction in partnership with its fellow federal departments, including USDA and DOI, investing tens of millions of dollars in watersheds such as the Maumee River, Lower Fox River, and Saginaw River. More recently, in response to the Toledo event, the EPA redirected $12 million in Great Lakes Restoration Initiative funding to federal and state agencies to target HABs in western Lake Erie. This funding will be used to expand monitoring and forecasting to help drinking water treatment plant operators and beach managers minimize impacts, increase incentives for farmers in western Lake Erie watersheds to reduce runoff, and improve measurements of nutrient loads in Lake Erie tributaries.

Controlling and managing cyanobacteria in surface water, and treating cyanotoxins in drinking water, is critical to protect human health. Optimized drinking water treatment processes have been shown to be effective in removing cyanotoxins. However, these treatment techniques can generate a considerable expense for local communities which are already facing extensive infrastructure needs to meet the demand of their customers. Ensuring adequate investment in our nation's water infrastructure and controlling nutrients and other anthropogenic influences that promote HAB formation will be necessary to ensure that drinking water treatment plants are able to effectively treat emerging contaminants and prevent events such as the one in Toledo.

An important component of preventing or minimizing cyanotoxin impacts is through early warning of CyanoHAB events. During the bloom season, NOAA monitors and predicts CyanoHABs in Lake Erie, providing weekly experimental forecasts to water managers. This early warning allows water managers to take actions when CyanoHAB events threaten their system's source water.

Impact of H.R. 212 on Agency Activities

Providing technical assistance on HABs to states and public water systems is a priority for the EPA. The EPA actively seeks opportunities to work collaboratively with states and public water systems, and the agency has several existing programs for providing technical assistance on drinking water issues.

Conclusion

CyanoHABs have become an increasing problem that can affect communities all across the country. Coordinated federal, state and local actions must continue to protect the nation's drinking water supplies. The EPA is taking aggressive action to develop and publish health advisories, water quality criteria, and analytical methods while providing ongoing technical assistance to states and communities. The EPA will continue to engage with utilities, and local, state, and federal government partners, to reduce utilities' vulnerability to such incidents through preventive and preparedness measures.

Once again, Chairman Shimkus, Ranking Member Tonko, and Members of the Subcommittee, thank you for the opportunity to discuss the Drinking Water Protection Act and the EPA's work on cyanotoxins and drinking water. I look forward to answering any questions you may have.

Mr. SHIMKUS. Thank you very much.

I will recognize myself for 5 minutes for the first round of questioning.

And I only have two questions, Dr. Grevatt.

Does this legislation raise any red flags because it complicates what the Agency is trying to accomplish?

Mr. GREVATT. No, not at all.

Mr. SHIMKUS. Aside from cyanotoxins, how many other algal toxins do you believe are of concern to the health and safety of public drinking water?

Mr. GREVATT. So there are many cyanotoxins out there, as we have discussed previously. There are two that we haven't talked about, the euglenophycins and the prymnesins, which we haven't seen widely, but that is something that we need to keep our eye on. I know the State of Ohio, along with EPA, is thinking about looking forward to the future in terms of how do we prepare for the potential emergence of these cyanotoxins.

Mr. SHIMKUS. And I think in my opening statement when I was weaving the narrative, I kind of mentioned this was a living document, by which we can add to or subtract as we go through this process as we use good science to identify that.

So, with that, that is all the questions I have. I would look to my colleagues to see if anybody wants to ask a question on my time.

The gentleman from Ohio.

Mr. LATTA. Well, thanks, Mr. Chairman, for yielding.

And, again, Dr. Grevatt, thanks very much for being here. And thanks again for last fall for being at our committee hearing back in November. I know you had to come back up from New Orleans from a conference.

But when we had our discussion, especially early on when all of this was occurring up in my area, one of the things that you were talking about was how the EPAis working on the plans to release a health advisory, especially when we are talking about the Microcystin-LRs and—I hope I pronounce this right—the Cylindrospermopsin—am I close on that?—in the spring of 2015.

And after you have completed that independent review that you are working on right now—and I think this is a very technical, high area out there. I think there are three different peer reviewers on it right now.

So I guess my first question is, are you on track right now to make that late-spring deadline that we had talked about last year?

Mr. GREVATT. Yes, sir, we are.

Mr. LATTA. OK. That is great.

And can you also discuss the importance of the independent scientific peer review thatis going on?

Mr. GREVATT. Yes. As you mentioned, Congressman, there are many complicated aspects to these questions about cyanotoxins and looking at, in particular, the toxicity literature. We don't have data that tells us about exposures to humans and human health effects. We mostly have data that relates to exposures in animals that we then have to translate to what that might mean for humans.

So the peer review really helps to make sure that we are approaching this properly, that we have selected the right studies to

base the health advisory on, that we have considered uncertainties appropriately, that we are thinking about potential exposures and to the life stages, children in particular, appropriately.

So this is really a quality check, independent of EPA, to make sure that we have taken the right steps in developing the health advisory.

Mr. LATTA. Thank you.

And, also, when we are looking and talking about the health advisory, are you looking at the recommended contaminant levels? The testing? What exactly is going to be in that health advisory?

Mr. GREVATT. Thank you. Yes, Congressman, the health advisory will include information about sampling and analytical techniques. It will include information about treatment technologies to remove algal toxins from drinking-water supplies. And it will also include the health information, identifying a level below which we believe that humans will be safe from exposure.

Mr. LATTA. And, also, I think it was also interesting in our discussions and also when you testified last year, if you could maybe just briefly touch on, I think Ohio and five other States are really the only States that are out there using surface water. And the whole question about health advisories, and there is not really a standard, because Ohio uses the World Health Organization. I believe Minnesota uses it, too, but at a different level.

And so why is it so important that we have a health advisory that would be equal across the country that people can look to?

Mr. GREVATT. Right, certainly. There are two aspects of this that I think that are particularly important.

One is development of the health advisory from the United States Government, because, as you mention, we don't have that. States have been relying on the World Health Organization value, a 2003 value, that is based on studies that go back to the late 1990s. A number of other countries that have taken steps in algal toxins also rely on that World Health Organization value.

There is new data that have come in since the WHO produced their value, and we are considering that in partnership with the Government of Canada. We are working very closely with the Canadians to make sure that we have a coordinated approach to this. So it will update the toxicity information.

And then the second part of this that I think is equally important is, once we publish the health advisory, we are going to be reaching out to States and local communities to talk about the implementation of that health advisory.

So when there is value that is identified in the health advisory, we need to think about, if something occurs like happened in Toledo this past summer, how do we think that health advisory value should be used. Is that a not-to-exceed level for 1 day or for a week or for something different?

These conversations, I think, are equally important to make sure that we have a common approach across the country for dealing with this issue.

Mr. LATTA. Thank you.

Mr. Chairman, the time that you yielded to me has expired, and I yield back.

Mr. SHIMKUS. The gentleman yields back his time.

The chair now recognizes the ranking member of the full committee, Mr. Pallone, for 5 minutes.

Mr. PALLONE. Thank you, Mr. Chairman.

Protecting America's waters is one of EPA's priorities laid out in the President's budget for this next fiscal year. And I quote, he says, "The responsibility for communities and public water systems to continuously provide safe drinking water is a key component of the Nation's health and their wellbeing."

And I agree that goal is incredibly important, and I don't think it can be achieved without significant resources. Because harmful algae blooms are just one example of the threats that could drive significant treatment and capital costs for water utilities.

And so my point is we have to invest in drinking-water infrastructure. There are two areas of the President's budget that I believe move us in that direction. One is the $1.1 billion allocated for the Drinking Water State Revolving Fund, a significant increase from last year.

So, Dr. Grevatt, we have not had a hearing on the SRF in this subcommittee in several years, so could you briefly explain how the SRF works? And how might a State like Ohio address harmful algal blooms with their SRF funds? And could these resources benefit public water systems who have to undertake infrastructure projects to address contamination, such as moving intakes or improving treatment capabilities?

Mr. GREVATT. Certainly. Thank you, Congressman.

So EPA, through the State Revolving Loan Fund, provides grants to each of the States, allocates moneys to each of the States every year, and the States, in turn, develop an intended-use plan that is designed to fund projects that are identified by local utilities to improve infrastructure at those facilities.

In addition, the Drinking Water State Revolving Loan Fund provides set-aside funds for States to provide activities like technical support to local communities who are dealing with these challenges.

So the drinking-water SRF very much can support responses to harmful algal blooms. And I know, in fact, after the Toledo event, the State of Ohio directed some of their funding that they had received from EPA through the State Revolving Loan Fund to help communities on Lake Erie to address some of the challenges with harmful algal blooms.

Mr. PALLONE. The budget also creates—this is the second point—a new tax-except qualified public infrastructure bond program that is intended to help small communities track capital for infrastructure investment. And 97 percent of public water systems in the U.S. serve fewer than 10,000 people.

So what are some of the unique challenges faced by small community water systems? And would the tax-exempt bond program help these small systems keep up with infrastructure needs and rising treatment costs?

Mr. GREVATT. Thank you very much.

So we often have talked in this hearing, the previous hearing as well, about the city of Toledo, and we talk less about Carroll Township, nearby Toledo, who was shut down in 2013 as a result of a harmful algal bloom. And there are particular challenges that

small systems face, in terms of both technical capacity, financial capacity, and managerial capacity to address issues like harmful algal blooms.

So it is important through the SRF and other funding opportunities for us to focus on the needs of small communities as much as we can to make sure that they are supported in these efforts. So, certainly, we think that the new authority, as well as the drinking-water SRF, can help small communities to address these challenges.

Mr. PALLONE. And so the tax-exempt bonds specifically would help them is what you are saying.

Mr. GREVATT. We believe so, yes.

Mr. PALLONE. OK.

I mean, I just think that this funding could make all the difference for small communities struggling to provide safe drinking water. And I just wanted to say I think what the President has included for both of these items in his budget is important, so hopefully we will get support for it in Congress.

The other thing I have to say is we can't keep cutting EPA's budget and expect our water to get cleaner. And real progress on these very serious health and environmental problems takes a sustained commitment of time and money. And I think we owe it to our constituents and to the long-term health of our communities to make the necessary investments.

I mean, if you read the President's budget, so much of it is just talking about investment in the future, on this and other issues. And it is also very obvious, I am sure everyone realizes, that when you make these kinds of investments and you upgrade systems, you create a lot of jobs.

Also, it brings money into the local communities. So it not only impacts the health and the drinking water but also is an economic boost, as well, that makes a lot of sense, in my opinion.

Thank you, Mr. Chairman. I yield back.

Mr. SHIMKUS. The gentleman yields back his time.

The chair now recognizes, well, the gentleman from Kentucky, if he would like to ask questions.

Mr. WHITFIELD. I will pass.

Mr. SHIMKUS. You will pass.

The gentleman from Ohio, did you get your questions done?

Mr. LATTA. I think I got them, Mr. Chairman. Thank you very much.

Mr. SHIMKUS. Anyone else on the Republican side wish to ask any questions?

The gentleman from West Virginia is recognized for 5 minutes.

Mr. MCKINLEY. Thank you, Mr. Chairman.

I remember hearing the testimony from last year. I guess it was in November of last year, I believe, you were making that. I don't have all my notes from that meeting, but there was some discussion about the uniqueness of that situation up there, that there had been some dredging going on, and perhaps some of the leached material and sediment in the bottom maybe had triggered some of that.

I think, if I recall your testimony, you said, yes, you were aware of this, but—we are going on over a year now since this issue oc-

curred. You know, how close are we getting to where the algae blooms—there will be a standard at the Federal level?

Mr. GREVATT. A standard health advisory, sir?

Mr. MCKINLEY. Yes.

Mr. GREVATT. We will have that done by late spring of this calendar year.

Mr. MCKINLEY. I thought I heard you say that. Why that long? I mean, the people are still out there struggling with it. And, with all the resources you have to put that out, I don't understand why there is such a delay at the bureaucratic level to get something out.

Mr. GREVATT. The primary issue is to make sure we get it right. So, as others have discussed, we are in the midst of an independent scientific peer review of our health advisory focused on the toxicity levels we are identifying, which will be a level below which we believe that humans are not at risk from exposure to cyanotoxins. And we view that as a tremendously important level to identify and make sure we have confidence. So——

Mr. MCKINLEY. Well, was that the first reporting in the Toledo area that—Lake Erie, was that the first time that we have had a problem with it?

Mr. GREVATT. With cyanotoxins? No. That is certainly not the first time we have had problems with cyanotoxins.

Mr. MCKINLEY. OK. So, based on that, I am saying, how long does it take to develop a standard when we know we have a health hazard out there? When little communities that don't have the ability, the resources, to be able to do all the testing that you mentioned back in November, how are these little communities going to do it?

They need your standard, and I don't understand why it is taking so long. Because last year wasn't the first time this has come up.

Mr. GREVATT. Yes, sir. And we are, as I said, committed to having this ready before the next algal bloom season in the Great Lakes region. So we expect that this is going to be coming in time to assist those systems, large and small, with addressing algal toxins going forward.

Mr. MCKINLEY. OK.

What about—you were going to get back to us—I didn't get any—about the contribution from the zebra mussels. I know that was potentially a factor in that. Have you been able to determine in the past year whether or not they have been any contribution to that?

Mr. GREVATT. There is not scientific agreement at this point on the contribution of zebra mussels. There certainly are scientific studies that suggest that invasive species, such as zebra mussels, may contribute, as well as dredging of sediments. We know there are quite a bit of nutrients in the system, including in the sediments, and the dredging may, some believe, contribute to the growth of algal blooms. But there is not scientific agreement as yet on those questions.

Mr. MCKINLEY. So when you come up with the standard, with the little communities, Toledo being much larger than many, and you talk about getting its surface water from ponds and the like, how are they going to be able—what costs are they going to face, a small community of 5,000 people or 2,000 people, compared to To-

ledo, to be able to achieve the standard? Is there going to be any assistance you are going to recommend?

Mr. GREVATT. Yes, sir. In particular through the State Drinking Water Revolving Loan Fund, we will be providing resources through the States to communities. And the drinking-water SRF is focused, as I said, primarily on small communities.

Mr. MCKINLEY. And you are talking through the State Revolving Fund?

Mr. GREVATT. I am sorry?

Mr. MCKINLEY. The State Revolving Fund?

Mr. GREVATT. Yes, sir.

Mr. MCKINLEY. Yes. But I haven't dissected the President's budget, but last year he took that and cut that almost in half, the amount of money coming through the SRF. So I haven't seen his—do wehave a reduction in the SRF this year?

Mr. GREVATT. There is an increase in the drinking-water SRF in the President's budget.

Mr. MCKINLEY. Good. Thank you very much.

I yield back the balance of my time.

Mr. SHIMKUS. The gentleman yields back his time.

Just a note for the public and my colleagues. It looks like they will call votes in a few minutes. We will try to get through this panel and maybe the opening statements of the second panel. We will have to come back to move the bill after votes.

So, with that, I would like to recognize the ranking member of the subcommittee, Mr. Tonko.

Mr. TONKO. Thank you, Mr. Chair. And I had a opening statement that, with your indulgence——

Mr. SHIMKUS. Yes. Let me ask unanimous consent that all opening statements can be submitted for the record. I got that request from the chairman, too.

So, without objection, so ordered.

Mr. TONKO. Thank you so much.

And, Dr. Grevatt, thank you for being here today to testify again on this very important topic.

The problem of algal toxins touches on the biggest challenges facing our water utilities today: source-water protection and infrastructure funding.

H.R. 212 would require EPA to identify the factors that cause harmful algae to proliferate and express toxins. Can you identify some of those factors for us?

Mr. GREVATT. Certainly. Among the most important are nutrients in the system, availability of light, light intensity in particular, warmer temperatures. Water flows are also very important in promoting the growth of toxic algae blooms.

Mr. TONKO. Thank you.

And the President's budget describes multiple efforts that the administration will undertake to address these factors, including funds for EPA to enhance its efforts to address nutrient pollution through partnerships with USDA and States in the high-priority watersheds.

Excessive levels of nitrogen and phosphorous in water sources create prime conditions for excessive algal growth. Nutrient pollution has been identified by your agency, the International Joint

Commission, and other stakeholders as one of the key factors driving proliferation of harmful algal blooms.

Can you describe briefly what EPA's efforts to address nutrient pollution would entail?

Mr. GREVATT. Yes, sir. So we will be working with partners at the State and local level to make sure that we are addressing nutrient pollution comprehensively, thinking about the various sources of nutrients, both in large communities and small, in rural communities and urban communities, to make sure that we are minimizing the inputs of nutrients into systems like western Lake Erie that promote the growth of algal blooms.

Mr. TONKO. Thank you.

And is addressing nutrient pollution important if we are indeed to address harmful algal blooms?

Mr. GREVATT. We believe so, yes.

Mr. TONKO. OK.

And H.R. 212 would also require EPA to identify feasible treatment options to address and manage the risks posed by harmful algal blooms.

You testified in November that preventative measures are the preferred and most effective approach to managing harmful algal blooms. Do you think it is important that preventative measures be included in EPA's consideration of tools to address and manage these risks?

Mr. GREVATT. We think it is very important that we at EPA think both about treatment at drinking-water supplies as well as prevention of the growth of algal blooms in the first place. Yes.

Mr. TONKO. Thank you.

And later today I expect that the subcommittee will adopt an amendment to clarify that treatment options include those preventative measures. As we will hear from the second panel, treatment options to address harmful algal blooms can be very expensive. Some water systems may have to move their intake pipes or find alternative water sources—a very expensive undertaking. This will only exacerbate the high cost of replacing our crumbling drinking-water infrastructure nationwide.

H.R. 212 envisions EPA entering into cooperative agreements with States and affected water systems, though it does not provide funding for such agreements. The President's budget request includes significant funding for drinking-water infrastructure, but that funding is already far outpaced by need.

My question: Does EPA currently have funding for cooperative agreements and other activities to address the risks of harmful algal blooms?

Mr. GREVATT. We have funds, particularly through the State Drinking Water Revolving Loan Fund, to support small communities. We don't currently have a funding source that would support cooperative agreements as identified in the bill.

Mr. TONKO. Well, let me just state that this bill addresses an important problem, but its impact will be indeed limited if we don't provide funding. I hope my colleagues will join me later today to ensure that funds are available to implement the strategic plan and enter into cooperative agreements.

And I thank the chair for calling this hearing.

And, Mr. Chair, I yield back.

Mr. SHIMKUS. The gentleman yields back his time.

We have had a few other Members join.

Anybody on the Republican side wishing to ask additional questions?

Mr. Murphy is recognized for 5 minutes.

Mr. MURPHY. Thank you.

Appreciate you being here, Doctor.

With Toledo, you said it was forced to go without tap water for 3 days because of the algal bloom. And what was the economic impact of shutting down that drinking-water system for that period of time? Do you know?

Mr. GREVATT. So I am not familiar with an estimate for the city of Toledo. I can say that in Charleston, West Virginia, which was a very different situation and a longer duration, the Governor of West Virginia, Governor Tomblin, estimated the economic impact of that incident as over $70 million.

Mr. MURPHY. I heard that for Toledo it was $1.5 million just in that water system alone.

Now, do you know that Bowling Green, Ohio, also obtains its municipal water from Lake Erie?

Mr. GREVATT. Yes, sir.

Mr. MURPHY. And they were able to maintain that tap water. You are aware of that. Do you know why?

Mr. GREVATT. So we know that conventional treatment technologies, if optimized, are effective in removing algal toxins from source waters for drinking water. And it may be that in the case of the Toledo last summer the concentration simply overwhelmed what they could deal with at their intake.

Mr. MURPHY. But they have a different system for water purification than the Bowling Green facility has. What was the technology? Do you have any idea what that technology difference was that they had at bowing Green?

Mr. GREVATT. I am not familiar with the technologies that were present in Bowling Green, so——

Mr. MURPHY. OK. It was activated carbon.

And you may be aware—I have some here—3 to 5 grams of this, so about a sugar packet, has as much surface area as a football field. And this is much more than 3 to 5 grams.

I am wondering if this is something that EPA is studying at all, in terms of looking at activated carbon as a source to help us with clean water systems?

Mr. GREVATT. Absolutely. And the Toledo system also used activated carbon last summer during the event.

Mr. MURPHY. And this is something that, as we review these issues—for example, Mr. Latta's bill—that the EPA will continue to look at, of how we can use activated carbon more in this process?

Mr. GREVATT. Absolutely.

Mr. MURPHY. Good.

Then that is all I have to ask, Mr. Chairman. Thank you.

Mr. SHIMKUS. The gentleman yields back his time.

Is there anyone else on the minority side seeking time to ask questions?

The gentlelady from California is recognized for 5 minutes.

Mrs. CAPPS. I wanted to say thank you first for holding this very important topic as a hearing.

Mr. SHIMKUS. You are very welcome.

Mrs. CAPPS. And thank you, Dr. Grevatt, for your testimony.

And as has been said and I just want to state, a growing body of scientific research is pointing to toward global climate change as a primary factor in the emergence and proliferation of harmful algal blooms. Warming waters, elevated carbon dioxide levels, ocean acidification, rising sea levels, extreme weather events are all linked to manmade climate change, and all contribute to harmful algal blooms.

Addressing these risks is going to require both mitigation and adaptation. EPA is working with States to help address the many facets of this problem.

Dr. Grevatt, could you describe just briefly—I have a series of questions—some of these efforts?

Mr. GREVATT. Certainly.

So, within my office, we support efforts on climate adaptation, in particular for the water sector, helping both storm-water utilities and drinking-water utilities to prepare for things like flood events, drought events, extreme weather events, whether it be hurricanes or other things. So very much we are focused on helping to build resiliency of local drinking water and wastewater treatment systems.

Mrs. CAPPS. In your testimony, you mentioned there are effective water treatments available to remove these toxins but that these techniques are very expensive to implement. Am I correct on that? Just a "yes" or a "no."

Mr. GREVATT. Some of those, yes, can be expensive.

Mrs. CAPPS. And with climate change expected to make these events more frequent and severe in the future, will these adaptation costs increase or decrease over the coming years and decades?

Mr. GREVATT. They are likely to increase for many systems.

Mrs. CAPPS. And following along that, do you think the current level of Federal funding and resources is adequate to properly mitigate the future impacts of harmful algal blooms?

Mr. GREVATT. We very much are going to focus on using the available resources we have as efficiently as possibly to meet this challenge.

Mrs. CAPPS. Well, but would you say the next sentence if you can? Do we have enough? Are we going to need more as time goes on?

Mr. GREVATT. I can't comment on that.

Mrs. CAPPS. OK.

While developing a strategic plan would certainly be helpful, I am concerned that H.R. 212, our House resolution, does nothing to help local communities actually implement the changes necessary to prevent these events in the future.

And, Mr. Chairman, I am going to be introducing the Water Infrastructure Resiliency and Sustainability Act soon. And it would increase funding for local water agencies so that they can actually implement mitigation and adaptation strategies. They know what needs to be done, but if you don't have the wherewithal, you can't do it.

H.R. 212 only takes the first step, and I believe there is much more that needs to be done. That is not by way of saying that I don't agree with this hearing, but I hope this is just the first step, because we need to have further hearings on the issue as to implementation. And that is a direction I hope we can go, because, as has been stated, this is a problem that is only expected to get worse in the years and decades to come. And I think our next generations, we owe it to them to start doing this now.

Thank you, and I yield back.

Mr. SHIMKUS. The gentlelady yields back her time.

Anyone else on the majority side seeking time?

And for my colleagues, we are going to recess after the first panel. And then we will come back and we will empanel the second panel, finish that testimony. Then we will move into the markup, just for information.

The chair recognizes the gentleman from California, Mr. McNerney.

Mr. MCNERNEY. Thank you, Mr. Chairman.

I am going to change the subject slightly and talk about groundwater in California, if you don't mind too much. We are in the third year of a very severe drought. At the same time, California is the third largest oil producer in the United States, but a recent article in the San Francisco Chronicle highlighted that California aquifers have been contaminated by drilling operations.

It is my understanding that the EPA has given California until tomorrow to present additional plans on how to fix the problem. EPA Regional Administrator Jared Blumenfeld said, and I quote, "If there are wells having a direct impact on drinking water, we need to shut them down now."

Are there any wells that the EPA is targeting to shut down?

Mr. GREVATT. So EPA is working very closely with the State of California as they develop this plan that you just mentioned that they will be submitting tomorrow, which is designed to make sure they are fully in compliance with the Safe Drinking Water Act on their underground injection control program within 2 years.

Mr. MCNERNEY. OK.

Is there anything that triggers the EPA to be more involved in overseeing and monitoring the Safe Water Drinking Act funds in areas that are experiencing drought?

Mr. GREVATT. We certainly are working, as I mentioned, with communities both large and small that are facing drought challenges. And so we are focused on trying to support those communities in becoming as resilient as possible to drought, yes.

Mr. MCNERNEY. OK.

And last December 2014, there is a letter that also mentions the EPA has strengthened oversight of the oil and gas underground injection control program. What has the EPA done with that new authority?

Mr. GREVATT. So there is not a new authority, but we have been working, as I said, with the State of California to make sure that their program that they are implementing, underground injection control program, is in full compliance with the Safe Drinking Water Act. We have been working very cooperatively with them on that.

Mr. MCNERNEY. OK.

Well, apparently, there is a 1983 agreement between the EPA and the California regulators, and the agreement listed some specific aquifers considered exempt. By "exempt," that means the process can inject wastewater into the aquifer. But there are two signed copies of this agreement; one has a list of 11 aquifers that are exempt, and the other doesn't have those aquifers listed.

Could you explain that or give me some insight?

Mr. GREVATT. Yes. So that 1983 document is actually the original primacy application from the State of California, which—EPA granted primacy for them to implement the underground injection control program.

And so, as we have worked with the State of California, we have discovered there has been some confusion with the historical record on this. So the focus of our work with the State of California going forward has been to make sure that the aquifer exemptions are implemented properly in the State of California.

Mr. MCNERNEY. OK. This is an area that I think needs a lot more scrutiny, and I appreciate your consideration.

I yield back.

Mr. SHIMKUS. The gentleman yields back his time.

Now I will recess this hearing and return—we will ask my colleagues to return as promptly as possibly after the last vote, and then we will empanel the second panel.

And we want to thank you, Dr. Grevatt, for being here. We have seen you now, you know, what, twice in the last 4 months. And we look forward to working with you. Thank you very much.

[Recess.]

Mr. SHIMKUS. We are going to call the hearing back to order and welcome our second panel and continue to move through the process.

So thank you for coming. Thank you for many of you or your associations being here, you know, last fall or last November, I guess.

And we will go in order of the table. I will do the introduction and then ask you to do your 5-minute opening statement. Your full statement is submitted for the record.

So I would like to first introduce Mr. Mike Baker, chief, Division of Drinking and Ground Waters from the Ohio Environmental Protection Agency.

Thank you for your service. We look forward to hearing your testimony. You are recognized for 5 minutes.

STATEMENTS OF MICHAEL BAKER, CHIEF, DIVISION OF DRINKING AND GROUND WATERS, OHIO ENVIRONMENTAL PROTECTION AGENCY, ON BEHALF OF THE ASSOCIATION OF STATE DRINKING WATER ADMINISTRATORS; AUREL ARNDT, CHIEF EXECUTIVE OFFICER, LEHIGH COUNTY AUTHORITY (PENNSYLVANIA), ON BEHALF OF THE AMERICAN WATER WORKS ASSOCIATION; AND KRISTY MEYER, MANAGING DIRECTOR, AGRICULTURAL, HEALTH, AND CLEAN WATER PROGRAMS, OHIO ENVIRONMENTAL COUNCIL

STATEMENT OF MICHAEL BAKER

Mr. BAKER. Thank you, and good morning, Mr. Chairman, Ranking Member Tonko, and subcommittee members.

My name is Michael Baker. I am administrator of the public drinking-water program in the State of Ohio and also a recent past president of the Association of State Drinking Water Administrators, on whose behalf I am testifying here this morning.

Ohio EPA Director Craig Butler testified before this subcommittee in November of 2014 on the subject of harmful algal blooms and, in particular, Ohio's experience with the August 2014 incident in Toledo, when nearly a half a million people were told they could not drink the water due to elevated levels of microcystin.

Today I will frame my remarks in the context of the various components of H.R. 212 but in consideration of the lessons learned during the events in Toledo and the activities we have undertaken since that event.

We support the bill's emphasis on a strategic plan. It has become abundantly clear that solving the problems associated with harmful algal blooms needs to be done holistically and thoughtfully rather than piecemeal. It is appropriate to establish and update a list of harmful cyanotoxins and associated information on their toxicity. Such a list will drive the work undertaken in other parts of the strategy, such as refining the health assessments, analytical methods, and treatment effectiveness. We also think it is reasonable that priority be placed on those toxins most likely to occur in drinking water at levels of concern.

Assessing adverse health effects from cyanotoxins is the most critical element of the bill. At present, individual States are forced to develop their own health benchmarks. We need a national approach based on sound science and welcome EPA-derived health advisories.

There are a host of assumptions and policy ramifications that need to be considered in establishing an advisory level, and States need to be engaged in those considerations before a number is finalized. And I want to knowledge Dr. Grevatt and EPA for their support of Ohio and for recently engaging a small group of State representatives for deliberation on these important decisions.

Additional information on the ecology of cyanobacteria, including what triggers them to produce toxins, is needed. Guidance is needed on strategies for early detection of blooms and the appropriate frequency of monitoring at public water systems. This is also an area in which consultation and coordination with agencies such as NOAA and NASA is essential.

We agree with the bill's emphasis on analytical methods. More work is needed to evaluate the capabilities and applicability of all appropriate analytical methods and how they can be used in tandem with one another. The determination of appropriate analytical methods also relates to how health advisories are expressed—for example, if the level for a single category for microcystin, Microcystin-LR, or if it includes Mycrocystin-LR and equivalents.

We are fortunate that cyanobacteria and associated toxins are generally removed with conventional surface water treatment at our public water systems. But it is costly and in no way a straightforward problem, and ongoing research and guidance on treatment technologies is needed.

We appreciate the bill's emphasis on EPA providing assistance to affected States and water systems through cooperative agreements. This is an essential role and one I believe EPA strives to fulfill with available resources. We would respectfully point out that there is an important role for Congress in this regard to adequately fund EPA, States, and water systems in support of our collective efforts.

The bill properly includes a requirement for consultation with other Federal agencies, State public water systems, international agencies, research and academic institutions. My experience with the Toledo water system this past summer showed that it is a team effort comprised of Federal, State, and local experts as well as academic institutions, and that was needed to address the challenges we faced in Toledo.

Finally, I will note that the most reliable and, in the long run, most protective of public health is a multibarrier approach. That starts with protecting sources of drinking water. We believe it is extremely important that we collectively stay focused on the root cause of algal blooms. These problems are ultimately the result of point and nonpoint sources of nitrogen and phosphorus pollution.

In conclusion, we strongly believe that Federal, State, and local leaders need to work closely together in partnership to quickly advance the science, to detect and effectively treat cyanotoxins in drinking water, to scientifically derive safe levels. We also need to stay focused on the root cause of the problem.

We believe the steps articulated in H.R. 212 are an appropriate series of actions to be taken at this time, and ASDWA and the States look forward to working with you in tackling this challenging issue.

Thank you for the opportunity to testify, and I look forward to answering any questions.

[The prepared statement of Mr. Baker follows:]

Testimony of Michael G. Baker Representing
the Association of State Drinking Water Administrators

Before the Subcommittee on Environment & the Economy
on H.R. 212, the Drinking Water Protection Act

February 5, 2105

Who We Are: I am the administrator of Ohio's drinking water program within the Ohio Environmental Protection Agency as well as a recent past President of the Association of State Drinking Water Administrators (ASDWA) on whose behalf I'm testifying today. ASDWA represents the collective interests of the fifty states, the five territories, the Navajo Nation, and the District of Columbia.

The Continuing Challenges Posed by HABs; My Approach to Today's Testimony: Director Craig Butler of the Ohio EPA testified before this committee in November 2014 on the subject of Harmful Algal Blooms, and, in particular, Ohio's experiences with the August 2014 incident in Toledo and its aftermath. Today, I would like to speak on behalf of ASDWA and represent a broader perspective. Algal toxins in drinking water are -- and likely will continue to be for the forseeable future – an extremely challenging issue for all of us at the Federal, state, and local levels. Real progress has been made on a number of fronts, but much remains to be done.

PRINCIPAL COMMENTS ON HR 212

Overview: I'd like to frame my remarks in the context of the various components of H.R. 212, since that's the impetus for today's hearing, and to offer a few suggestions for adjustments to the bill's language. In general, we feel that HR 212 is an appropriate set of requirements that has the potential to advance our collective understanding of algal toxins and further develop the tools to deal with them. The suite of activities envisioned by the proposed bill strike us as the right series of actions and steps to be taking. Indeed, EPA, in concert with states and other Federal agencies, are already taking several of these actions. This legislation will underscore and highlight the importance of these steps.

Strategic Plan for Cyanotoxin Risk Assessment & Management: The bill's emphasis on a strategic plan is well placed. It's become abundantly clear, to those who have wrestled with this issue, that the steps involved in protecting the public from HABs in drinking water are very much part of an interconnected puzzle. The various challenges relate closely to one another, as I'll explain more in a moment. The problem needs to be attacked holistically and thoughtfully, rather than piecemeal.

Comprehensive List of Harmful Cyanotoxins: It is indeed appropriate to "establish, publish, and update" a list of harmful cyanotoxins, as the bill would require. Such a list will drive the work undertaken in other parts of the strategy, such as refining health assessments, analytical methods, and treatment effectiveness. However, priorities should be those toxins for which there is evidence suggesting there is a reasonable likelihood that they are or may be in drinking

water at levels of concern. The list can also be expanded, if, in the future, additional cyanotoxins are found in such concentrations in source waters.

Assess Known Adverse Human Health Effects of Harmful Cyanotoxins: This is perhaps the most critical element of this Bill. States need solid information about the health effects of cyanotoxins. At present, individual states are developing their own health benchmarks or relying on consensus bodies, such as the World Health Organization (WHO). We need a national approach based on sound science and welcome EPA-derived Health Advisories. There are a host of assumptions and uncertainty factors that need to be considered in establishing an advisory level as well as policy considerations (e.g., a tiered standard for sensitive populations vs. healthy adults; acute vs. multi-day exposure; and single congener or consideration of equivalent cyanotoxins in water). We support this provision of the bill and believe that states need to be engaged in these health assessment deliberations before the advisory number is finalized.

Factors that Cause Cyanobacteria to Proliferate and Express Toxins/Monitoring Strategies: Additional information on the "ecology" of cyanobacteria, including what triggers them to produce cyantoxins, is also sorely needed. HABs sometimes follow predictable paths; but sometimes the causes and timing of algal proliferation are much harder to predict. The state of knowledge about the key parameters to measure and the most appropriate monitoring strategies needs to be enhanced. This is also an area in which consultation and coordination (another key provision of the bill) are essential. For instance, some of the early predictive assessment tools and models used by the National Oceanographic and Atmospheric Administration (NOAA) and the National Aeronautics and Space Administration (NASA) on portions of the Great Lakes are showing great promise. We also agree that monitoring guidance is needed on the appropriate frequency of monitoring, considering the dynamic nature of algal blooms.

Guidance Regarding Feasible Analytical Methods: We certainly agree with the bill's emphasis on analytical methods. There are currently several analytical methods for measuring the concentration of algal toxins in drinking water. Each has its advantages and disadvantages in terms of cost, precision, accuracy, and selectivity. We believe more work is needed to evaluate the capabilities and applicability of all appropriate analytical methods and how they can be used in tandem with one another – both the relatively inexpensive screening methods as well as the more definitive (but expensive) methods. Multi-lab comparative studies are also needed in connection with these methods. These various methods questions also "double-back" on the health assessment work mentioned earlier. How health advisories are expressed – i.e., whether in terms of individual cyanotoxin species (e.g., Microcystin LR) or whether for a broader class of toxins (e.g., all cyanotoxins) will drive the needed analytical methods.

Feasible Treatment Options to Mitigate Adverse Health Effects: We're fortunate in that algal toxins are generally amenable to treatment at a public water system. But, it's in no way a straightforward problem and guidance of the type contemplated in the bill is much needed. One needs to know, for instance, if the algal toxins of concern in the source waters of a public water system are within an intact algal cell (in which case the cells can be physically removed) or whether the cell has been "lysed" or fractured, thereby releasing the toxin directly into the water -- with associated treatment implications. Treatment challenges must also be tied closely

to the aforementioned health advisories and analytical methods -- so that water utilities can know if the treatment has been effective and the water is safe to drink.

Cooperative Agreements with and Technical Assistance to Affected States and Water Systems: We very much appreciate the draft bill's emphasis on EPA entering into agreements with and offering assistance to affected states and water systems. Ongoing technical assistance and resources are needed to effectively tackle this very challenging, multi-faceted problem. We would also respectfully point out that there's an important role for Congress in this regard to adequately fund EPA (through their yearly appropriation), states (through the PWSS grant made to states within EPA's appropriation) and to water utilities, through the Drinking Water State Revolving Loan Fund (DWSRF).

Coordination and Consultation with All Concerned Parties: The bill very properly includes a requirement for consultation with other Federal agencies, states, operators of public water systems, multinational agencies, foreign governments, and research & academic institutions. My state's experience with the Toledo water system this past summer showed that a team effort – comprised of Federal, state, and local experts as well as academic institutions – was needed to best address the challenges we faced. During that event and afterwards, we have been much impressed with and have turned to the capability of various partners organizations and we believe such collaborative efforts offer the best prospects for success along our path forward.

ADDITIONAL COMMENTS/RECOMMENDATIONS

Clarify "Other Purposes": We understand and appreciate that this is an amendment to the SWDA. However, the bill's title notes "other purposes." Is this reference to drinking water used for other purposes or source waters used for other purposes? If the latter, the human health concerns associated with *recreational* use of waters with blooms could be explicitly stated as one of the purposes.

Managing Algal Blooms: We believe the proposed bill could be improved by including a requirement for developing guidance on how to *manage* source waters known to have HABs (e.g., application of algaecides). Such management approaches may be an effective option for public water systems that have smaller sources of water (versus those using a Great Lake, for instance).

Prevention of Algal Blooms: The most reliable and, in the long run, the most protective of public health approach to providing safe water at that tap is a *multi-barrier approach*, that starts with protecting sources of drinking water. A reactive approach to HABs and algal toxins that does not include source protection and places most of the burden for removing harmful algal toxins on the water treatment facility is an expensive and unpredictable way to proceed. While H.R. 212 and much of this hearing properly address mitigation and responses to proliferation of cynaotoxins, we believe it's extremely important they we collectively stay focused on the *root causes* of algal blooms. These problems are ultimately the result of point and nonpoint sources of nitrogen and phosphorous pollution, coupled with weather conditions that can exacerbate algal blooms and cause them to occur earlier and longer. Data-driven and targeted efforts to address all sources of nutrient pollution are needed – including both voluntary measures and incentives

(e.g., conservation practices on the farm) and mandatory steps (e.g., point source discharges from Publicly Owned Treatment Works (POTWs). This multi-faceted pollution challenge requires a cooperative and collaborative pollution control approach designed to leverage a variety of tools and authorities by an array of stakeholders.

CONCLUSIONS

- State drinking water programs across the country take very seriously the quality of drinking water supplied by public water systems.
- Ohio and many other states have taken many steps to proactively address the issues associated with cyanotoxins in drinking water, but it's a complex and multi-faceted challenge and much remains to be done.
- We strongly believe that Federal, state, and local leaders need to work closely together in partnership to quickly advance the science and practice to detect and effectively treat cyanotoxins in drinking water and to target our efforts based on our collectively best understanding of the threats to human health posed by cyanotoxins.
- We believe the steps articulated in H.R. 212 are an appropriate series of actions to be taking, at this stage.
- ASDWA and individual states stand ready to continue to lead in this effort and will gladly work with partners, at all levels, to tackle this tough and very important challenge.

Mr. SHIMKUS. Thank you very much.

Now I would like to recognize Mr. Aurel Arndt, the chief executive officer of Lehigh County Authority in the State of Pennsylvania, on behalf of the American Water Works Association.

And before I recognize you for 5 minutes, he was accompanied early this morning by a colleague of ours, Mr. Charlie Dent, so we don't want to hold that against him as he gives his testimony.

But it was good to see Charlie walking through our chamber to say hi to you. So, with that, sir, you are recognized for 5 minutes.

STATEMENT OF AUREL ARNDT

Mr. ARNDT. Thank you, Mr. Chairman.

Good morning, members of the subcommittee. My name is Aurel Arndt. I am chief executive officer of Lehigh County Authority, based in Allentown, Pennsylvania. I am also chair of the American Water Works Association's Water Utility Council. I deeply appreciate the opportunity to offer input on the critical issues surrounding algal blooms, cyanotoxins, and drinking-water sources and H.R. 212, the Drinking Water Protection Act.

As the chairman said, I am here on behalf of the American Water Works Association today. Established in 1881, AWWA is the word's oldest and largest nonprofit scientific and educational association dedicated to water. Our utility members provide safe and affordable water every day to more than 70 percent of the American population. My remarks today reflect the experiences and perspectives of AWWA's nearly 50,000 members.

As you know, we are brought here today largely due to the algal bloom in Lake Erie last August that resulted in the formation of a toxin known as microcystin, requiring the city of Toledo to issue a do-not-drink advisory to its customers. We also know that other water systems that rely on lakes and reservoirs for their drinking-water supplies have also had to wrestle with algal blooms.

The formation of algal toxins is very complex and not fully understood. Similarly, the same can be said for the possible human health effects of cyanotoxins. But one thing is very clear: The problem is always associated with excessive amounts of nitrogen and phosphorus in the water.

According to the U.S. Geological Survey, nonpoint sources, predominantly runoff and deposition from the air, account for 90 percent of the nitrogen and 75 percent of the phosphorus in our waters. We believe the most sensible strategy for reducing the scope and severity of this problem is bringing nonpoint sources of nutrient pollution under more effective management.

There are some Federal programs that have a bearing on nutrients in our water, such as the conservation title of the farm bill. However, these conservation programs are largely voluntary in nature.

Drinking-water treatment technology exists to allow utilities to remove toxins produced by algal blooms; however, this technology is very expensive to install and maintain. In addition, removing these toxins after they occur does nothing to protect the ecosystem and the people within the watershed.

As a utility manager, the protection of public health is always my most important priority, as it is for American Water Works and

all of its membership. Even before this summer's event, AWWA had taken steps to help water systems at risk from algal events. They include the following: First, developing and distributing information to assist water systems in anticipating and responding to source-water challenges, including cyanobacterial blooms and cyanotoxins. Also, AWWA is preparing a water utility manager's guide to cyanotoxins, which will be published later this month.

Having said these things, utility managers can't solve this problem on their own. We do need Federal help. Federal agencies, including EPA and USDA, should use existing authorities to give much higher priority to nutrient-reduction projects that protect downstream drinking-water supplies. For example, the Clean Water State Revolving Loan Fund and the farm bill conservation programs could be targeted and used more effectively to reduce nutrient pollution and protect our drinking-water sources.

With regard to drinking-water regulation, we support the methodical, science-based standard-setting process in the Safe Drinking Water Act. EPA has already placed some cyanotoxins on its Contaminate Candidate List and has indicated that it will use the Unregulated Contaminant Monitoring Rule process to help determine whether regulation of cyanotoxins would afford a meaningful opportunity to protect public health. We certainly support these efforts.

We applaud the goal of H.R. 212 to have EPA develop a strategic plan to protect people from cyanotoxins when they appear in source waters. EPA has already begun work on developing health advisories for two of those, as we heard earlier. We also commend the bill's author, Congressman Latta, for not disrupting the effective, established processes in the Safe Drinking Water Act for determining whether or not a substance should be regulated.

We have offered the technical expertise of our membership to Congress and EPA, as we all continue to work to protect the public from potential health threats in the environment. However, I must emphasize, we also ask that Congress consider ways to increase the effectiveness of nonpoint-source pollution programs.

They should include discussing whether nonpoint pollution should be brought under the jurisdiction of the Clean Water Act and, if so, the appropriate way do so. To reemphasize what we said in similar testimony last fall, we believe it would not be equitable to put an additional burden on water systems and their customers to solve problems if the most significant sources of nutrient pollution are not also asked to do more.

In closing, I would like to thank the subcommittee for the leadership it is taking today in holding this hearing. I would be happy to answer any questions, both today and in the future. Thank you.

[The prepared statement of Mr. Arndt follows:]

American Water Works Association

The Authoritative Resource on Safe Water [SM]

Testimony on
H.R. 212, the Drinking Water Protection Act

Presented by
Aurel Arndt
Chief Executive Officer
Lehigh County Authority, Allentown, Penn.
&
Chair, Water Utility Council
American Water Works Association

Before the House Subcommittee
on Environment and the Economy
February 5, 2015

Good morning, Chairman Shimkus and members of the subcommittee. My name is Aurel Arndt, and I am Chief Executive Officer of the Lehigh County Authority based in Allentown, Pennsylvania. I deeply appreciate this opportunity to offer input on the critical issues the subcommittee is addressing today: cyanotoxins in water supplies.

As for my background, the Lehigh County Authority provides high-quality, affordable and reliable water and sewer service to more than 200,000 people in Lehigh County and Northampton County, Pennsylvania. I have worked for the Lehigh County Authority since 1974. In addition, I have served on the Executive Board of the Government Finance Officers Association, then the board of the Pennsylvania Infrastructure Investment Authority (PennVest), and now and the chair of the Water Utility Council of the American Water Works Association (AWWA), which

oversees the association's government affairs efforts. I am here today representing AWWA and its more than 50,000 members across the United States.

My remarks today reflect the experiences and perspectives of AWWA's members. Established in 1881, AWWA is the world's oldest and largest non-profit scientific and educational association dedicated to water, the world's most important resource. Our members provide solutions to improve public health, protect the environment, strengthen the economy and enhance the quality of life for millions of North Americans. In keeping with AWWA's vision of a better world through better water, our utility members are proud to provide safe and affordable water every day to more than 70 percent of the American population.

Background. In a similar hearing last fall, we discussed an algal bloom in western Lake Erie in August that resulted in the formation of a toxin known as microcystin in the part of the lake from which the city of Toledo draws its drinking water. For three days, the city had to issue a "do not drink" advisory, affecting more than 400,000 people served by the city water system.

The factors leading to algal blooms and the occasional subsequent formation of a class of toxins called cyanotoxins are very complex and not completely understood. So, too, are the possible human health effects of the various kinds of cyanotoxins that algae can produce, at least at the low levels likely to be encountered in drinking water. Because of the uncertainties surrounding the human health effects of cyanotoxins, city officials felt it wise to issue the "do not drink; do not boil" order last August. Officials at every level of government involved in that emergency acted out of an abundance of caution to protect human health.

Source Issues. There may be uncertainty as to which combination of events – water temperatures, water flow patterns, presence of bacteria, etc. – may lead to a specific type of

algal bloom and whether cyanotoxins will be produced. There may be uncertainty about all of the possible human health effects resulting from exposure to cyanotoxins. However, there is no uncertainty about one critical aspect of this problem: it is always associated with excessive amounts of nitrogen and phosphorus in the water. Moreover, we know a great deal about the sources of those contaminants in our nation's lakes and rivers. Although each watershed is unique and has its own mix of nutrient sources, across the nation the most prominent uncontrolled sources of nitrogen and phosphorus are nonpoint sources, that is, runoff. These sources are at the same time both the hardest to manage and the furthest from being subject to meaningful federal regulatory authority.

According to a 1999 report by the U.S. Geological Survey, nonpoint sources – predominantly runoff and air deposition – account for 90 percent of the nitrogen and 75 percent of the phosphorus in U.S. waters. We know that is an old report, but there is no reason to think the situation has fundamentally changed since that study. Indeed, it is likely that as point sources of pollution, mainly municipal and industrial wastewater treatment plants, have been made subject to ever-tighter permit conditions under the Clean Water Act, the relative portion contributed by nonpoint sources has only grown larger.

While point sources, such as Publicly Owned Treatment Works, sewer overflows, and industrial discharges contribute to overall loadings of nutrients in the nation's waters, it remains beyond dispute that nonpoint sources are the predominant source of phosphorous and nitrogen in many watersheds.

Simply put, prevention is the best way to deal with algal blooms and cyanotoxins. Therefore, the fairest and best strategy for reducing the scope, scale, and impact of this problem in the future

is to bring nonpoint sources of nutrient pollution under more effective management. At present, these sources lie largely outside the jurisdiction of the Clean Water Act.

To be sure, there are some federal programs that can have a bearing on the contaminants we are talking about today, such as the conservation title of the Farm Bill. However, the conservation programs of the Farm Bill are voluntary in nature, and the program requirements are not based upon the quality of receiving waters or the need to protect downstream sources of drinking water. In contrast, Clean Water Act regulations require point sources to obtain water quality and technology-based permits with fixed terms. Permit conditions are reviewed on a regular basis and are routinely ratcheted towards greater stringency based on the quality of the receiving stream. These important features are absent from the Farm Bill's voluntary programs.

It is true that states have authority to control nonpoint sources, but most state programs are limited and are too weak to adequately protect U.S. water supplies. If these programs were stronger, the unfortunate events in Toledo might not have occurred.

Drinking water treatment technology does exist to allow drinking water utilities to remove toxins produced by algal blooms in source waters, but this technology is very expensive to acquire and maintain.

In addition, removing these toxins after they occur versus preventing them from occurring in the first place does absolutely nothing to protect the ecosystem and the people within the watershed impacted by these algal blooms.

The question to be answered is this: Should the financial burden of solving this important problem fall solely on the customers of the affected public water systems, or also on those responsible for creating or contributing to the overall problem in the first place?

I'd like to describe what we do not think would be a fair response to the problem of excessive nutrient pollution. It would not be fair to put the entire burden of addressing this problem on municipal wastewater and drinking water utilities. It would not be fair to them or their customers to require that municipal utilities spend more of their financial resources attempting to buy a pound of cure to this problem, when many ounces of prevention are available at a lower cost.

For drinking water professionals the protection of public health is clearly the most important priority, and we will do whatever is necessary to ensure that the water we deliver to our customers is safe every day. But water systems and their customers are in a real sense the victims of this pollution. It would not be fair to put the entire burden of response on them.

What AWWA Is Doing. Because we recognized the problem of algal blooms and cyanotoxins even before the unfortunate episode last summer, AWWA has undertaken certain proactive steps towards helping water systems at risk from this kind of event. Among other things:

1. AWWA is developing and distributing information to assist water systems in anticipating and responding to source water challenges, including cyanobacterial blooms and cyanotoxins. We are preparing a water utility manager's guide to cyanotoxins, which is now undergoing final review. This will be available to utility managers who have to cope with the problem of algal blooms, providing an overview of the current knowledge on algal blooms, their health effects, methods for testing for cyanotoxins, and treatment options for removing cyanotoxins from drinking water. This guidance is in the final stages of production and is to be published later this month.

2. AWWA is encouraging water systems to evaluate their circumstances to determine whether they might have an unrecognized cyanotoxin concern, and to establish appropriate safeguards.
3. AWWA is assisting water systems with guidance and training on emergency preparedness so that water systems have protocols in place to respond to events like that experienced by Toledo, including early and effective communication with the public.

What Can the Federal Government Do? To help prevent future incidents like that experienced in Toledo, it is critical that this nation brings nonpoint sources of water pollution under more effective control. We recommend that Congress consider ways to greatly increase the effectiveness of nonpoint source pollution programs, including the question of whether nonpoint sources of pollution should be brought under the jurisdiction of the Clean Water Act.

In the shorter run, federal agencies, including EPA and USDA, should use existing authorities to give much higher priority to nutrient reduction projects that protect downstream drinking water supplies and therefore, public health. Among other tools available, the Clean Water State Revolving Loan fund and Farm Bill programs can be targeted and used more effectively to protect drinking water sources.

We note that EPA has included some cyanotoxins in its Contaminant Candidate Lists for potential regulation in drinking water. We also expect to see cyanobacteria and cyanotoxins included in the upcoming Fourth Unregulated Contaminant Monitoring Rule, which we expect to come out before the end of this year. We applaud the agency for taking these actions. We also observe that EPA will need the resources from the federal budget and appropriations process to do this right. For example, with sufficient funding, EPA could engage in pilot tests of monitoring

protocols and coordinate with existing research being done with entities such as the Water Research Foundation.

In the shorter term, EPA is now working on health advisories for two cyanotoxins, which will establish the concentrations of such contaminants below which adverse health effects are not expected. We do appreciate those efforts.

Finally, we also recommend that EPA and USDA emphasize water quality objectives that specifically recognize the protection of drinking water supplies, rather than thinking of drinking water as an indirect beneficiary of generic nutrient reduction.

H.R. 212, the Drinking Water Protection Act. In January, we observed that Representative Bob Latta of Ohio introduced H.R. 212, the Drinking Water Protection Act, with cosponsorship by representatives Candice Miller of Michigan, Mike Quigley of Illinois and Marcy Kaptur of Ohio. As you know, the bill would have EPA develop and submit to Congress a strategic plan for assessing and managing risks from cyanotoxins in drinking water. As we stated earlier, EPA is already working on health advisories for cyanotoxins and is considering whether regulation of cyanotoxins under the Safe Drinking Water Act would provide meaningful protection to human health. The first step in this process was listing cyanotoxins in its Contaminant Candidate Lists, and a listing in the UCMR would be another key step. However, we do understand that members of Congress would want to ensure that potential risks from cyanotoxins are being addressed.

The Safe Drinking Water Act requires that EPA follow methodical, scientific processes for determining which substances warrant regulation. We know these processes can seem long

and complicated, but we appreciate the fact that H.R. 212 does not bypass the SDWA and allows scientific processes to continue toward regulatory determinations.

It was wise in H.R. 212 to ask for a strategic plan for addressing cyanotoxins rather than requiring a specific date for final human health effects findings, monitoring and analytical methods, desired treatment options, and the like. Even though research is in progress on these issues, the timeframe for conclusions is not predictable. Utilities would also appreciate technical assistance and cooperative agreements in managing cyanotoxins risks, as the bill mentions. We would point out that cyanotoxins can pose a risk to a great number of water utilities across the country, as a great many utilities draw water from lakes and reservoirs.

Conclusion. In closing I want to thank the subcommittee for the leadership it is taking today in holding this hearing. The American Water Works Association is eager to help in any way it can as the nation moves forward in addressing this important issue.

I will be happy to answer any questions you may have concerning my statement, either today or in the future.

Attached to this statement is a summary of current technical knowledge concerning algae and cyanotoxins.

Attachment to Testimony of Aurel Arndt
Before the House Subcommittee on Environment and the Economy
February 5, 2015

Technical Issues Concerning Cyanobacteria and Cyanotoxins.

Cyanobacteria, also known as blue-green algae, are photosynthetic bacteria that can live in many types of water, and are important components of aquatic ecosystems. While critical to water and soil resources, excessive cyanobacteria growth can cause ecological and public health concerns, as we have seen. Rapid, excessive cyanobacteria growth is commonly referred to as a "bloom."

Cyanobacteria blooms can be inches thick, especially those located near the shorelines of lakes and reservoirs, and they commonly occur during warm weather. They sometimes appear foamy or accumulate as mats or scum covering the water surface. Some cyanobacteria sink and rise through the water column, depending on the time of day. Cyanobacteria blooms may appear blue, blue-green, brown and other colors depending on many factors. Sometimes blooms are mistaken for materials such as spilled paint because they can have a similar appearance.

Cyanobacteria can cause problems for water utilities, including

- Unpleasant tastes and odors, usually earthy and musty;
- Interference with water treatment plant performance;
- Increased disinfection byproduct precursors; and
- Production of **cyanotoxins**. As of November 2014, EPA has not established a safe level for cyanotoxins in drinking water.

Blooms Are Not Always Harmful

Cyanobacteria blooms that produce cyanotoxins are sometimes called Harmful Algal Blooms (HABs). This can be misleading because cyanobacteria that are capable of producing cyanotoxins do not always produce those toxins. Further complicating the picture, while some cyanobacteria that produce cyanotoxins also produce taste and odor problems, not all taste and odor-producing blooms produce cyanotoxins, and not all cyanotoxin-producing blooms produce taste-and-odor problems.

Cyanotoxins make up a large and diverse group of chemical compounds that differ in molecular structure and toxicological properties. They are generally grouped into major classes according to their toxicological targets: liver, nervous system, skin, and gastrointestinal system. A single bloom may contain multiple types of cyanotoxins, and some cyanobacteria can simultaneously produce several toxins.

Cyanotoxins and Human Health

Human exposure to cyanotoxins can occur in several ways:

(1) Ingestion of contaminated water, fish, or shellfish;

(2) Dermal contact with water containing cyanotoxins;

(3) Inhalation or ingestion of aerosolized toxins; and

(4) Consumption of drinking water impacted by a toxic cyanobacterial bloom.

While confirmed occurrences of adverse health effects in humans are rare, some incidents have been documented in different parts of the world. In 1931, approximately 8,000 people fell ill when their drinking water originating from tributaries of the Ohio River that had been contaminated by a massive cyanobacteria bloom. In 1975, approximately 62% of the population

of Sewickley, Penn., reported gastrointestinal illness, which the Centers for Disease Control attributed to cyanotoxins created in open finished water storage reservoirs.

Health effects of cyanotoxins can be acute or chronic, and have been observed in the liver, nervous system, and gastrointestinal system. Liver cyanotoxins (i.e. microcystins) seem to be the most commonly found in cyanobacteria blooms and the most frequently studied. Scientists have identified at least 80 varieties of microcystins. Both acute and chronic effects of microcystins have been investigated through laboratory animal studies. In studies, microcystins have rapidly concentrated in the livers of test animals.

Animal studies for the effects of microcystins conducted using high doses have reported organ damage, heart failure, and death. Long-term animal studies of chronic effects from repeated exposure have found liver injury, renal damage, and an increased number of tumors.

The impacts of chronic or acute cyanotoxin exposure in humans are not clear, especially in the low levels more likely to be found in treated drinking water. Studies in China have reported a correlation between liver or colorectal cancer with the consumption of water contaminated by microcystin-producing cyanobacteria blooms. More research is needed to understand whether and how cyanotoxins may promote tumor growth and cancer.

Anatoxin-a targets the nervous system and can induce paralysis and death by respiratory failure at very high levels of exposure. Other non-lethal cyanotoxins can trigger fevers, headaches, muscle and joint pain, diarrhea, vomiting, or allergic skin reactions. Children are at a higher risk than adults of experiencing toxic effects.

Previous Episodes with Cyanotoxins

Although they have been observed and reported more frequently in recent years, cyanobacterial blooms are not a new problem. At least 35 states have reported cyanobacterial blooms, with many of those blooms producing cyanotoxins. When considering cyanobacterial blooms and cyanotoxin events, it is important to distinguish between ***recreational water*** and ***drinking water***. Cyanotoxin producing blooms have been identified in recreational waters more frequently in recent years, and contact recreation (such as swimming) has been restricted more often in the last decade than in previous decades. In the summer of 2006, at least 12 states posted advisories or closed lakes and rivers due to elevated levels of cyanotoxins, out of concern for people and animals.

Cyanotoxins have been found less often in drinking water supplies than in recreational waters. A 2000 Florida finished-drinking water survey reported cyanotoxins ranging from below detection level to 12.5 ug/L microcystin, 8.46 ug/L anatoxin-a, and 97.1 ug/L cylindrospermopsin. As of late 2014, nationwide occurrence data for finished drinking water has not been gathered, although it could be conducted in the future through the fourth round of the Unregulated Contaminant Monitoring Rule (UCMR).

Regulations and Advisories

As of late 2014, there are no federal regulatory standards or guidelines for cyanobacteria or cyanotoxins in drinking water. The Safe Drinking Water Act (SDWA) requires EPA to publish a list of substances of potential concern that warrant further study, known as the Contaminant Candidate List (CCL). EPA uses the CCL to prioritize research efforts to help determine whether a contaminant should be considered for regulatory action. Cyanotoxins are listed on the third CCL as a group, with EPA identifying research needs for them and prioritizing development of information on anatoxin-a, microcystin-LR, and cylindrospermopsin. AWWA strongly supports

such science-based decision making regarding drinking water regulations for contaminants that may pose a risk to human health.

For microcystin-LR, the World Health Organization (WHO) has developed a provisional finished drinking water guideline of 1 µg/L, based upon chronic exposure. Results from a 2014 survey of state drinking water administrators indicate that five states out of the 34 states responding to the survey have established drinking water advisory thresholds for microcystin, and two states have established drinking water advisory thresholds for other cyanotoxins. In addition to these five states, four states have draft policies and eight more are preparing policies.

Factors Leading to an Algal Bloom

Field experience shows that the following conditions are the most important factors leading to a cyanobacterial bloom:

- The many types of cyanobacteria and diversity of their habitats. This diversity makes it complicated to predict the precise conditions favoring the growth of cyanobacteria. Physical factors that affect whether cyanobacteria grow include available light, weather conditions, water flow, temperature, and mixing within the water column. Chemical factors include pH and nutrient concentrations (primarily nitrogen and phosphorus).
- Water Temperature. Most algae favor temperatures between 60 and 80°F; optimum conditions for many cyanobacteria are in even warmer waters, but some cyanobacteria will grow at temperatures below 60°F.
- Nutrients. Elevated levels of nutrients favor algae and cyanobacteria growth. Cyanobacteria are favored by a low nitrogen to phosphate ratio (<6:1 total N to P).

- Flow. Quiescent or low flow conditions favor cyanobacteria blooms. Turbulence disrupts the bacteria's buoyancy and light can be limiting at depth when there is vertical circulation in the water column.
- Thermal stratification. Cyanobacteria can regulate their buoyancy giving them a competitive edge when the water column is stratified. Stratification can also affect nutrient availability to favor cyanobacteria.
- Rainfall. Large and frequent storm/heavy rain events can temporarily disrupt cyanobacteria blooms by flushing and de-stratification within a water body; frequent small rainfall events can lead to cyanobacteria blooms by contributing nutrients that favor cyanobacterial growth without disrupting water body stratification.

Cyanobacteria blooms usually develop in waters rich in nutrients, especially phosphorus. Such nutrients originate from both point and nonpoint sources. Municipal wastewater and stormwater as well as agricultural runoff are common sources of nutrients. Failing septic systems can also be contributors. Some water bodies already contain enough "stored" nutrients in their sediments and aquatic ecosystem that cyanobacteria blooms can occur without additional nutrient input from any of these sources. Most of our nation's lakes and reservoirs are from 50 to more than 100 years old and many of them have been accumulating sediment and nutrients for a long time. In some cases, the cycling of nutrients within the reservoir is the major cause of algae blooms. In-lake mitigation practices may need to be considered alongside watershed management measures to effectively deal with this problem.

Managing cyanobacteria blooms effectively requires an understanding of the limnology of the water supply. The conditions that trigger blooms reflect site-specific conditions (e.g., the presence of cyanobacteria, nutrient levels, and hydraulic conditions). Some utilities experience blooms in surface water supplies in early summer when the water reaches a sufficiently warm

temperature. Others witness blooms when the thermocline begins to destratify in late summer or early fall (i.e. when turnover begins in the water column). Blooms may take place after a rain event or they may occur after a series of sunny days. Algae and zooplankton as well as cyanobacteria can flourish under particular source water conditions and can have implications for drinking water treatment. By understanding the limnological conditions of their particular source waters, utilities gain a better understanding of the conditions that are most likely to lead to a bloom.

Experiencing a cyanobacteria bloom does not always mean there is a cyanotoxin problem. Multiple strains of cyanobacteria can exist in a single bloom, and not all strains are capable of producing cyanotoxins. Even strains that can produce toxins do not always do so in all conditions, and the conditions that trigger or inhibit production of cyanotoxins remain poorly understood. Laboratory analysis is usually needed to determine if the cyanobacteria are actually producing toxins.

While some of the same types of cyanobacteria can produce cyanotoxins along with taste and odor compounds, such as geosmin and 2-Methylisoborneol (MIB), *a taste and odor episode does not necessarily mean cyanotoxins are also present.* In addition, some cyanobacteria that produce cyanotoxins do not produce these musty and earthy compounds. Cyanotoxin production and taste and odor production should not be assumed to always occur together. However, a history of taste and odor concerns linked to cyanobacteria blooms in a particular water body indicates at least the potential for cyanotoxin contamination.

Detection of Cyanotoxins

Several assays and analytical methods have been developed to either screen for or quantify cyanotoxins. In some cases, a utility's laboratory may be able to perform testing, provided the

necessary laboratory equipment and expertise are available. In other instances, especially for advanced techniques, an external laboratory with experience and appropriate approvals may be recommended. Not all laboratories are equipped to analyze samples for cyanotoxins.

Treatment of Drinking Water

Identifying which cyanobacteria and cyanotoxins are present helps utilities know they are using the appropriate treatment processes. Key factors to consider are the type of cyanotoxin and whether it is intracellular (contained within the cyanobacteria cells) or extracellular (dissolved in the water). Intracellular toxins can be eliminated by removing the cyanobacteria cells. Extracellular toxins are generally more difficult to remove. Under some circumstances water treatment can release toxins from cyanobacteria, turning the toxins from intracellular to extracellular. Research is currently underway concerning the most effective means of removing cyanobacteria cells and their toxins from drinking water. Treatment selection is context-specific and depends upon the concentration of cyanobacteria and/or cyanotoxins to be removed or inactivated. Careful site-specific examination is necessary prior to making definitive treatment decisions. The exact configuration of treatment systems may determine the effectiveness of any particular treatment option.

Common cyanotoxin treatment practices and their relative effectiveness

Treatment Process	Relative Effectiveness
Intracellular Cyanotoxins Removal (Intact Cells)	
Conventional coagulation, sedimentation, filtration	Effective for the removal of intracellular/particulate toxins by removing intact cells. It generally is more cost effective than chemical inactivation/degradation, removes a higher fraction of intracellular taste and odor compounds, and is easier to monitor.
Flotation	Flotation processes, such as Dissolved Air Flotation (DAF), are effective for removal of intracellular cyanotoxins since many of the toxin-forming cyanobacteria are buoyant.
Pretreatment oxidation (oxidant addition prior to rapid mix)	Overall, pretreatment oxidation can either assist or make treatment more difficult, depending upon the situation. Pre-oxidation processes may lyse cells, causing the cyanotoxins contained within to release the toxins. Ozone may be an exception (see "Ozone" below) because it both lyses cells and oxidizes the cyanotoxins.
Membranes (microfiltration or ultrafiltration)	Microfiltration and ultrafiltration are effective at removing intracellular/particulate toxins. Typically membranes require pretreatment.
Extracellular Cyanotoxins Removal/Inactivation	
Chlorination	Effective for oxidizing extracellular cyanotoxins (other than anatoxin-a) when the pH is below 8
Chloramines	Not effective.
Potassium Permanganate	Effective for oxidizing microcystins and anatoxins. Not effective for cylindrospermopsin and saxitoxins.
Chlorine dioxide	Not effective with doses typically used for drinking water treatment.
Ozone	Very effective for oxidizing extracellular microcystin, anatoxin-a and cylindrospermopsin.
Activated Carbon (Powdered Activated Carbon and Granular Activated Carbon)	Most types of carbon are generally effective for removal of microcystin, anatoxin-a, saxitoxins and cylindrospermopsin. Because adsorption varies by carbon type and source water chemistry, each application is unique; activated carbons must be tested to determine effectiveness.
UV Radiation	When used at high doses UV degrades toxins. UV doses used for disinfection are not adequate to destroy cyanotoxins.

Membranes (reverse osmosis or nanofiltration)	Reverse osmosis is effective removing extracellular cyanotoxins. Typically, nanofiltration has a molecular weight cut off of 200 to 2,000 Daltons, which is larger than some cyanotoxins. Individual membranes must be piloted to verify toxin removal.

Controlling Nutrient Levels

It is always more effective to prevent contamination of sources of drinking water than it is to clean up the water after contamination. In that light, we point out that:

1. Managing nutrient levels in surface waters, especially nitrogen and phosphorus, is critical to reducing the likelihood of cyanobacteria blooms and thus the potential for the production and release of cyanotoxins.
2. Elevated levels of nutrients in the water supply can contribute to a number of other drinking water quality challenges, including taste and odor complaints, reduced filter run times in water treatment plants, and increased potential for disinfection by-product formation.
3. Managing nutrient levels in public water supplies is already a major policy objective for EPA and USDA.

The events last August in Toledo place an exclamation point on the urgency of protecting the nation's water supplies and highlights the need to make the management of nutrients in those supplies a national priority. No city should be put in the position that Toledo found itself in, and we strongly recommend steps to prevent such events in the future.

Each watershed has its own unique mix of major nutrient discharges, but universally, the most challenging source of nutrients to manage is non-point source pollution. It is within Congress'

power to set new policy objectives for managing non-point source pollution under the Clean Water Act. Under the current law, communities across America are shouldering significant costs as storm water systems and wastewater treatment facilities face more and more stringent nutrient control requirements. These control requirements carry significant cost and lead to significant rate increases for utility customers. In many cases these costs are borne to reduce nutrients by a meaningless percentage compared to uncontrolled or relatively uncontrolled nonpoint sources in the watershed, because municipal sources are subject to permits while other important sources are not. The rate increases borne by customers of municipal water and wastewater systems also reduce the utility's ability to address other problems, such as aging infrastructure or improving resilience to disasters or unforeseen events. Communities cannot afford to bear the entire cost of managing nutrients just because the municipal facilities that serve them are subject to Clean Water Act permits, and no community should be expected to do so if we fail as a nation to bring nonpoint sources of nutrient pollution under control.

The Federal Role in Managing Cyanotoxins

The federal government has a number of programs that can provide significant and immediate assistance in helping drinking water systems anticipate and respond to the potential risk posed by cyanotoxins. There are already considerable synergies between several current program goals and the kinds of assistance helpful to water systems. Ready examples include:

1. Coordinated federal focus. Nationally, responsibility for managing in-stream water quality is typically delegated to EPA, based on the Clean Water Act and other statutes. However, programs in a wide cross-section of federal agencies are central to evaluating and ultimately managing cyanotoxins. As an example, Farm Bill conservation title funds could be used more effectively to reduce nonpoint nutrient runoff as a preventative

measure, and could be targeted to water bodies threatened with excessive nutrients that also serve as drinking water supplies.

2. Data aggregation. EPA and CDC have both organized websites focused on harmful algal blooms. Due to the limited resources and historic purposes of these sites, there is substantial opportunity to consolidate water quality data, incorporate remote sensing information, and make available other data important to inform the management of nutrient levels in water supply watersheds. Data sites like those provided by USGS on stream flows and USDA on drought have been central to effective resource management and leverage limited federal dollars very effectively.

3. Clean Water Act stream body assessments for nutrients. Current CWA programs enumerate nitrogen and phosphate levels, but limited consideration is given to determining the potential for cyanobacteria blooms or to correlate nutrient conditions with available cyanotoxin concentrations with respect to water supplies. Providing more information on nutrient loadings and known cyanotoxin levels would be extremely helpful. Congress should also examine renewed funding of Clean Lakes program under EPA, Section 314 of the Clean Water Act. This program was used in the 1980s and '90s to fund research into limnology and make assessments of the nation's lakes. It could be used to study the cost effectiveness of in-lake techniques.

4. Harmful Algal Bloom and Hypoxia Research and Control Act. We applaud Congress for passing the Harmful Algal Bloom and Hypoxia Research and Control Act Amendments last June. We urge Congress to make sure that the research contained in this act receive robust funding, and that Congress to pay close attention to the research reports

that will result from this act.

5. Scrutiny under the SDWA. Several cyanotoxins are on the SDWA contaminant candidate list and the agency anticipates including some of these cyanotoxins in the next cycle of required unregulated contaminant monitoring. These actions are the first steps in a science-based SDWA regulatory decision-making process. AWWA's members appreciate that EPA is taking steps to inform water utilities about cyanotoxins now, while this regulatory process proceeds.

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Summary of Statement
by Aurel Arndt, CEO Lehigh County Authority
before the House Subcommittee on Environment and the Economy
February 5, 2015

- I am testifying today on behalf of the American Water Works Association (AWWA).
- The factors leading to algal blooms and the occasional subsequent formation of a class of toxins called cyanotoxins are very complex and not completely understood.
- So, too, are the possible human health effects of the various kinds of cyanotoxins that algae can produce, at least at the low levels likely to be encountered in drinking water.
- There is no uncertainty about one critical aspect of this problem: it is always associated with excessive amounts of nitrogen and phosphorus in the water.
- According to a 1999 report by the U.S. Geological Survey, nonpoint sources – predominantly runoff and air deposition – account for 90 percent of the nitrogen and 75 percent of the phosphorus in U.S. waters.
- AWWA is educating and preparing water utility managers for cyanotoxins threats.
- The fairest and best strategy for reducing the need to issue "do not drink" orders in the future is to bring nonpoint sources of nutrient pollution under more effective management.
- We recommend that Congress consider ways to greatly increase the effectiveness of nonpoint source pollution programs, including the question of whether nonpoint sources of pollution should be brought under the jurisdiction of the Clean Water Act.
- We commend EPA's use of the CCL, and potentially, the UCMR processes as the first steps in determining whether the regulation of cyanotoxins affords a meaningful opportunity to protect public health. If it does, EPA should set a National Primary Drinking Water Regulation for these contaminants.
- We also recommend that EPA and USDA adopt water quality objectives that specifically recognize the protection of drinking water supplies, rather than thinking of drinking water as an indirect beneficiary of generic nutrient reduction.
- EPA is already undertaking some of the actions that would be mandated under H.R. 212, but we appreciate Congress' interest in ensuring that they do take place.
- We appreciate that H.R. 212 would allow the SDWA's methodical, scientific processes for determining whether cyanotoxins should be regulated to continue.
- We thank the Subcommittee for its leadership in pursuing these topics and offer the experiences and expertise of our membership in further addressing cyanotoxins and related issues.

Mr. SHIMKUS. Thank you very much.

Now I would like to turn to Ms. Kristy Meyer, who is representing the Ohio Environmental Council.

Again, you are recognized for 5 minutes. Your full statement is in the record.

STATEMENT OF KRISTY MEYER

Ms. MEYER. Thank you. And good afternoon, Mr. Chairman, Mr. Ranking Member, and members of the subcommittee. I want to thank you for allowing me to testify before you today on the Drinking Water Protection Act, introduced by the Honorable Bob Latta.

My name is Kristy Meyer, and I am the managing director of agricultural, health, and clean water programs with the Ohio Environmental Council. Our organization, the OEC, is a 46-year not-for-profit advocacy organization whose mission is to secure healthy air, land, and water for all who call Ohio home.

On behalf of the OEC, I would like to thank Representative Latta for introducing this piece of legislation and this subcommittee for holding this hearing today. I have with me an updated version of my testimony. I apologize that you don't have it, but I was given very little time to turn it around.

I will never forget Saturday, August 2, 2014. At 8 a.m., my good friend from Toledo called me. She was talking so fast. She told me that Toledo area residents weren't able to drink their water. She told me she had a cup of coffee that morning and used tap water and asked me if she would be OK. My head started spinning thinking about this news—all those people without drinking water. And boiling that water would further concentrate those toxins.

Imagine parents telling their children that they can't drink the water or that they should not touch the water, or hospital staff trying to ensure the safety of their patients, or local mom-and-pop businesses temporarily closing their doors to protect their customers. While thankfully nobody was hurt during this emergency, some small businesses unfortunately paid the ultimate price.

How could this be? A modern American city in a first-world nation dealing with third-world water problems. This news spread like a wildfire, reaching the furthest parts of the globe, giving the U.S., Ohio, Toledo, and Lake Erie a black eye.

Clean, potable water is essential to life. And, according to the U.S. EPA, there is not one State in this Nation that has not experienced a harmful algal bloom. And, in fact, in Ohio, Lake Erie is not the only lake that has experienced a harmful algal bloom. In 2010, more than 10 inland lakes also experience a harmful algal bloom.

So if this bill is enacted, as the U.S. EPA moves forward in developing this report it is essential that the Agency take into consideration the whole-body burden of these toxins when establishing recommendations for standards, which should, along with recreational activities, consider fish and shellfish consumption as part of what is considered for other purposes.

It is vitally important to ensure safe drinking water, but we cannot continue to diagnose the symptoms and expect this problem to go away. According to the Ohio Phosphorus Task Force, we need to, in Ohio, slash nutrients flowing into Lake Erie by 40 percent at least. Members of the Ohio Phosphorus Task Force included the

Ohio Environmental Council, Federal and State local agencies, the Ohio Farm Bureau, Ohio AgriBusiness Association, and the Ohio Certified Crop Advisors.

Achieving this 40-percent-reduction goal means that we need to protect our waterways and wetlands. Meandering streams can help assimilate nutrients, allowing nutrients and sediments to fall out of the waterway as it flows down the river, whereas straightened ditches move the nutrients quickly into the next receiving body—and in Ohio, such as the Maumee and then Lake Erie.

We also must slash phosphorus from all sources, such as wastewater treatment plants and sewer overflows and farm-field runoff. We cannot, however, allow for the wastewater treatment plants to bear the burden of this reduction alone, especially when, according to the Ohio Phosphorus Task Force, the major culprit in Ohio in Lake Erie is farm-field runoff. We must ensure that each farmer samples their soil using precision soil-sampling techniques for the appropriate amount of fertilizer to be applied as well as develop and implement a nutrient management plan, at the very minimum.

So, in conclusion, in Ohio, we always say that Lake Erie is the canary in the coal mine for the Great Lakes region. The weekend-without-water crisis is a wakeup call not just for Ohio but for our Nation. Our waterways are at risk from excessive nutrient pollution. We must address this problem for the health and safety of our children and grandchildren. And this bill will help ensure safeguards are in place to protect our families and future generations. But without the end goal being the protection and attainment of water quality in our own waterways, I fear we will only continue to treat the symptoms.

The OEC thanks Representative Latta once again and this subcommittee for holding this hearing today and allowing me to testify before you. I am happy to answer any questions you may have.

[The prepared statement of Ms. Meyer follows:]

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Testimony of Kristy Meyer, Managing Director of Agricultural, Health & Clean Water Programs, Ohio Environmental Council
Before the U.S. House of Representatives Committee on Energy & Commerce, Subcommittee on Environment and Energy
Honorable John Shimkus, Chair, Gregg Harper, Vice Chair, and Paul Tonko, Ranking Member
February 5, 2015

Mr. Chairman, Mr. Ranking Member and members of the Subcommittee, thank you for this opportunity to testify before you today on the Drinking Water Protection Act, H.R. 212, introduced by the Honorable Bob Latta. I am truly honored to be here today.

My name is Kristy Meyer and I am the Managing Director of Agricultural, Health & Clean Water Programs with the Ohio Environmental Council (OEC).

Our organization, the OEC, is a 46 year-old non-for-profit advocacy organization. Our mission is to secure healthy air, land, and water for all who call Ohio home. We use scientific principles, legislative initiatives, legal action, and partnerships to secure a healthier environment for Ohio's families and communities.

On behalf of our network of more than 100 local and state environmental-conservation organizations and thousands of members across the state, I would like to thank Representative Latta for recognizing the need for public health advisories and standards by which drinking water utilities can monitor and test for cyanotoxins, as well as starting this vital conversation. We fully support this legislation going forward.

This legislation, coupled with the regulatory guidance that should be coming out later this year, will ensure the safety of Toledo residents, Ohioans, and the citizens of our great nation.

Lake Erie

(over, please)

Lake Erie is a foundation of health, economic vitality, and recreation for millions of Ohioans and those that vacation in our state. Unique among the Great Lakes, Lake Erie is the shallowest, warmest and most biologically productive. The Lake supports one of the largest freshwater commercial fisheries in the world and the largest sport fishery in the Great Lakes, producing more fish for human consumption than the other four Great Lakes combined.

Each year more than twelve million people flock to Ohio's portion of Lake Erie to wildlife watch, fish, hunt, recreate and create family memories. As a result, more than $12.9 billion in travel and tourism revenue is generated each year and $1.7 billion in federal, state, and local taxes, supporting more than 119,000 direct jobs.

Travel and tourism is a $40 billion industry in Ohio, nearly a third of that comes from the eight counties along the Lake. To help understand how significant this is, compare Lake Erie Travel and Tourism to other prominent industries in Ohio. For example, according to the Ohio Coal Association, Ohio's coal industry generates $4.3billion in revenue annually for the state of Ohio and directly employs nearly 3,000 people. According to the Homebuilders Association, building houses in Ohio accounts for approximately 10,500 direct jobs. It is clear that a healthy Lake Erie means a better economy for Ohio.

Lake Erie, however, is not only an unique ecosystem that provides habitat for wildlife and recreational opportunities, but it also supports heavy manufacturing, commerce, and farming.

While it does so much for us, it desperately needs our help. Since 1995, phosphorous in the Lake (specifically, bioreadibly available phosphorus, or dissolved reactive phosphorus)has been increasing. This has led to an increasing frequency of harmful algal blooms that put water

(over, please)

quality at high risk. For example, in 2011, phosphorous in Lake Erie was found in concentrations1,000 times higher than what the World Health Organization recommends for safe contact. Continued phosphorous loading in Lake Erie is what led to a "do not drink" water advisory on September 4, 2013 for the residents of Carroll Township and a weekend without water for nearly a half of million people on August 2, 2014.

Drinking Water Crisis

I will never forget Saturday, August 2, 2014. At 8 a.m.my good friend who lives in Toledo called me, talking very fast. She told me that Toledo residents had been told not to drink the water. She stated she had a cup of coffee made with tap water and asked if she would be okay. My head was spinning thinking about this news - all those people had no drinking water and boiling the water would only further concentrate the toxins found in the toxic algae. Imagine parents telling their children they could not drink, or should not even touch, their water, hospital staff trying to safe guard their patients, or a local mom-and-pop businesses that temporarily closed their doors to protect their customers. While no one was seriously injured during this emergency, some small businesses , unfortunately, paid the ultimate price. Thankfully the Ohio EPA and the U.S. EPA quickly stepped in and worked with Toledo to ensure the safety of Toledo's residents. Within approximately three days tap water to the residents of Toledo was restored.

How could this be? A modern American city in a first-world nation dealing with third-world water problems. This news spread like a wildfire to the furthest reaches of the globe giving the U.S., Ohio, Toledo, and Lake Erie a black eye.

(over, please)

Frankly many of my friends that live in the Toledo area still tell me they are scared to drink the water. They buy bottled water instead of turning on their tap.

Clean potable water is essential to life and according to the U.S. EPA there is not one state in this amazing nation that has not experienced a harmful algal bloom. This is not just a problem for Lake Erie. In fact, in 2010 more than 10 inland lakes in Ohio, as well as Lake Erie, experienced a toxic algal bloom.

In Ohio, we always say that Lake Erie is the canary in the coal mine for the whole Great Lakes region. The "weekend without water" crisis is a wake up call not just for Ohio, but for our nation. Our waterways are at risk from excessive nutrient pollution, whether that be phosphorous or nitrogen. We must address this problem for the health and safety of our children and grand children and this bill will help ensure safe guards are in place to protect our families and future generations.

Need to Treat the Problem Not Cure the Symptom

It is vitally important to ensure safe drinking water, but we cannot cure the symptoms and expect this problem to go away. According to the Ohio Phosphorus Task Force, we need to slash the nutrients flowing into Lake Erie by at least 40%. This task force, which the Ohio Environmental Council participated in, was lead by the Ohio Lake Erie Commission. Members included federal and state agencies, well-known universities such as Ohio State University, Ohio Sea Grant College Program; Heidelberg University; the Ohio Farm Bureau; Ohio Agribusiness Association; Ohio Certified Crop Advisors; and the Ohio Soybean Council. Slashing phosphorus inputs flowing into Lake Erie by 40% was agreed to by all partners.

(over, please)

Achieving this 40% reduction goal means that we need to curb phosphorus from all sources such as: (1) wastewater treatment plants and sewer overflows by upgrading our sewer infrastructure and utilizing green infrastructure like wetlands where and when appropriate; (2) reducing farm field runoff by ensuring that each farmer samples their soil for the appropriate amount of fertilizer to be applied as well as develop and implement a nutrient management plan at the very minimum; (3) curbing urban landscape runoff via the use of green infrastructure amongst other measures; and (4) ensuring our wetlands and small streams are protected and are healthy ecosystems - meandering streams can help assimilate nutrients where as straightened ditches move the nutrients quickly into the next receiving body, such as the Maumee River and then Lake Erie.

Conclusion

The Ohio Environmental Council thanks Representative Latta for acting quickly and recognizing the importance of ensuring safe potable drinking water. Because of the critical importance of ensuring potable drinking water, we urge this committee to swiftly adopt this legislation so that hopefully measures will be in place before the 2016 toxic algal bloom season begins.

Thank you again for the privilege of testifying before this committee today. I am happy to answer any questions you may have.

(over, please)

Mr. SHIMKUS. Thank you very much.

And I would like to recognize myself 5 minutes for the questions of the panel, and my first question will go to Mr. Baker.

Based on the lessons learned from this event last fall, do you perceive this bill to be helpful to improve protocols for testing and data analysis?

Mr. BAKER. Thank you, Mr. Chairman.

Yes, I do think that it will. As I stated in my testimony, it covers all the bases of needs that we have identified, first off, by establishing a national health advisory number so that States aren't developing those numbers on their own; developing, analyzing, giving us robust analytical methods and further information on treatment technologies. So yes.

Mr. SHIMKUS. What are the analytical methods that you see that are critical from the previous experiences with algae and source water?

Mr. BAKER. I think that there are a couple that we want to be looking at. The State of Ohio has utilized the ELISA ADA methodology, which looks at total microcystin, which we believe is important. And it is also relatively quick and relatively inexpensive method so that public water systems can monitor what is in their source water, the effectiveness of their treatment, and the water that they are producing.

But we also believe that there may be more robust methods that are appropriate when making determinations on final safety of water.

Mr. SHIMKUS. Thank you.

And, Mr. Arndt, in your testimony, you state that drinking-water utilities would also appreciate technical assistance and cooperative agreements provided for in H.R. 212 to aid in managing the cyanotoxin risk.

Can you elaborate a little bit more?

Mr. ARNDT. Yes. We would value and welcome any new research findings with regard to detection, monitoring, and practical and affordable treatment technologies. Some of our utilities and research entities associated with our association would be very interested in helping to pilot-test such technologies and methods.

We also would be appreciative of additional research to develop a more thorough understanding of why and how these blooms occur. There are multiple moving parts that have an effect on the generation of cyanotoxins. Such information could perhaps, in turn, lead to the development of early-warning technologies that could be applied by water systems across the country.

Mr. SHIMKUS. So the association considers this bill helpful in moving the ball forward on the problems addressed?

Mr. ARNDT. Say it again. I am sorry.

Mr. SHIMKUS. So your association considers this as a helpful legislation to move us forward in trying to obtain the goals that you have outlined?

Mr. ARNDT. Yes, we do. It is not by itself the solution to all of the issues, but certainly it is something that should facilitate answering those needs.

Mr. SHIMKUS. It is a step in the right direction, let's hope.

That is all the questions I have. Does anyone want to use the balance of my time for a question or two?

If not, I will yield back my time, and then I will ask the ranking member, Mr. Tonko, for 5 minutes.

Mr. TONKO. Thank you, Mr. Chair.

Welcome to our panel.

Last November, we discussed the crisis in Lake Erie, where a toxin-producing algal bloom forced the closure of a major drinking-water system. Half a million people in Toledo, Ohio, had no safe tap water for several days. Treating pollution after it has entered our drinking-water sources is obviously costly and inefficient.

Mr. Baker, what funding did the State of Ohio provide to water utilities to respond to the cyanotoxin emergency of last year?

Mr. BAKER. Thank you, Ranking Member.

Immediately following the events in Toledo, we made $50 million available for zero-interest loans for water systems to install additional treatment or avoidant strategies, such as new intakes or storage, and we received applications in weeks to exceed that amount.

Another thing that we did was we made up to $1 million available in grants for water systems to improve their early-detection and analytical capabilities.

Mr. TONKO. So $50 million, and you said you received applications in excess. So that amount wasn't limited by the need of water utilities, but it was more about what the State had available?

Mr. BAKER. It was based upon what we had available and what we could make available out of existing SRF funding.

Mr. TONKO. OK. Thank you.

And Ohio is far from the only State affected. Next year, Ohio or other States may not have that funding available.

Mr. Arndt, without funding from States or the Federal EPA, would it be difficult for water utilities to absorb the cost of treating for cyanotoxins?

Mr. ARNDT. Water utilities use a multiplicity of sources to fund their infrastructure and technology that is necessary to provide treatment, and a key part of that is the Federal funding that is made available through the State revolving loan funds. And so, yes, it is an important tool, particularly for smaller systems, as was stated in the earlier hearing.

And what AWWA has supported is developing a broad array of financing tools, recognizing that not every tool fits every need.

Mr. TONKO. Yes. But in terms of that funding mechanism, the difficulty remains in terms of treating the water supply. So would that be passed on to consumers?

Mr. ARNDT. Water systems are largely funded by borrowed funds which need to be at some point retired, and interest needs to be paid on that funding. And the source of revenues for most every water system—and it has been the policy of our association to support the cost of running water systems from the revenues derived from users. So, yes, those revenues would ultimately be derived from customers.

Mr. TONKO. Unfortunately, the algal toxins are just one of the contamination issues associated with nutrient pollution. Nitrate is another serous concern. Nutrient pollution required a municipal

water utility to invest over $4 million—millions of dollars in a nitrate-removal facility. Operating that facility at peak capacity costs the utility some $7,000 a day. This summer, the utility spent over $500,000 on nitrate removal alone.

And the problem is only getting worse. That utility has now said that they will be able to meet their customers' water demands without regulation of pollutants in their source water.

So, Mr. Arndt, as nutrient pollutant levels continue to rise, should we expect treatment costs to go up for many of our municipal water utilities?

Mr. ARNDT. I think it is clear that there is a correlation between enhanced or increased treatment requirements and the investment in facilities, not just in the capital but also for the operation of those facilities, that the result of that is increased user charges.

Mr. TONKO. Yes. And can huge capital costs like building a new $4 million plant be absorbed by water utilities?

Mr. ARNDT. Again, please?

Mr. TONKO. Sure. Can huge capital costs, like that of building a new $4 million plant, be absorbed by our water utilities?

Mr. ARNDT. That is very much a question which is unique to each individual system and its circumstances. Certainly, there are systems that have challenges because of the affordability of water rates already, and so, in those cases, any added costs are certainly just going to add to that burden and make it more onerous. And there are other systems that certainly may be able to handle it.

Mr. TONKO. Has AWWA done any estimates on what might be needed over the next decades or 2?

Mr. ARNDT. Yes, we have. We prepared a report a couple years ago called "Buried No Longer" which evaluated the water-main replacement costs that we will face in the country over the next 25 and 40 years. And the estimate for the next 25 years was that we would have to spend across the country approximately $1 trillion for the replacement of aged water mains, and over 40 years that number would be about $1.7 trillion.

Mr. TONKO. Thank you very much.

I yield back, Mr. Chairman.

Mr. SHIMKUS. The gentleman yields back his time.

The chair now recognizes, I think, the gentleman from Ohio for 5 minutes.

Mr. LATTA. Well, thanks again, Mr. Chairman. Thanks again for holding the hearing today.

And, again, thanks for our panel for appearing today and presenting testimony.

And, Mr. Baker, if I could ask the first couple questions to you. But, first, I just want to again thank Ohio EPA and the great coordination that went on, again, as I mentioned to Dr. Grevatt early this morning, about what had happened with U.S. EPA working with Ohio EPA and, of course, all the departments and agencies in Ohio working together, from the Department of Natural Resources, Department of Agriculture, and of course the city of Toledo and all the other local governments that were involved. So I just want to thank you again.

And my first question is on—Microcystin-LR is believed to be one of the most common and toxic of the algal toxins. Given the current

gaps on health-effects data, is it possible there may be other algal toxins or variants that are of even greater health concern that aren't known yet due to these gaps?

Mr. BAKER. Thank you, Representative Latta.

We know that there are a number of different types of cyanotoxins. We know that there are tens of different types of variants of each of those toxins, of which there is research out there that indicates that some of them are more toxic than LR.

We do think that there are significant gaps that need to be filled on that. I think that is why the approach in H.R. 212 of establishing a list of these potential toxins and collecting information, compiling information on their relative toxicity is a critical first step.

Mr. LATTA. Thank you.

And, also, can you discuss how you believe the bill tackles and helps these long-term issues that we could have, especially with these unknown and these gaps that could be occurring out there?

Mr. BAKER. Well, as I mentioned, the first step is just understanding what the total universe is of the toxins that are out there and what the potential health effects are, and then using that as a basis for developing further information on what their actual human health toxicological impacts are, analytical methods for even testing for them to see if they are present in our water supplies, and then certainly advancing treatment technologies to address them.

So I think, logically, those are the approaches that we should be taking to address toxins in drinking water.

Mr. LATTA. And, finally, how do the water treatment facilities and the Ohio EPA treat drinking water in which testing samples indicate multiple variants of microcystin, given that different variants have different toxin potency?

Mr. BAKER. Thank you, Representative.

Our approach in accordance with Ohio's strategy is that we look at the total microcystin, and we know that there is research out there that indicates that some of the variants of microcystin may be less toxic than LR, but there are studies out there that would indicate that there are some variants that are more toxic than LR.

So our recommended approach is that, where we have standards and we have analytical methods to look for those variants, we should be looking at not only Microcystin-LR but their equivalents and looking at those as a whole so that we are most protective of public health.

Mr. LATTA. Thank you.

Mr. Arndt, in your testimony, you state that it was wise in the legislation that we have today to ask for a strategic plan for addressing cyanotoxins rather than requiring a specific date for final human health effects findings, monitoring analytical methods, and desired treatment options, and the like.

Could you expound on that a little bit, why you think that is important?

Mr. ARNDT. I would love to, but I have to acknowledge that those areas are not my area of expertise. But our association would be happy to provide you with information that will expound on that and explain that further.

Mr. LATTA. OK. Well, thank you. If you could get that to the committee, we would appreciate it.

And then, Ms. Meyer, if I could just in my remaining time ask, as you heard this morning with Dr. Grevatt and what they are looking at on establishing the health advisories and getting the information—because, of course, with Ohio using the World Health Organization and other States doing the same—what do you see as the importance of having that standard set by the EPA for the health advisory instead of having the World Health Organization?

Ms. MEYER. Thank you, Congressman.

Well, I certainly think it is very important that the U.S. EPA sets that standard. They are the ones that are consistently looking at the pollutants and the toxins that are in our air and in our water and determining what a healthy level is for our body.

And recognize that right now they are taking a look at some health criteria and looking at the whole-body burden. So I think it is essential that the U.S. EPA be the leader in establishing these standards.

Mr. LATTA. Thank you.

Mr. Chairman, my time has expired, and I yield back.

Mr. SHIMKUS. The gentleman yields back his time.

The chair now recognizes the ranking member of the full committee, Mr. Pallone, for 5 minutes.

Mr. PALLONE. Thank you, Mr. Chairman.

I wanted to ask some questions of Mr. Arndt.

First let me say, harmful algal blooms and cyanotoxins present a significant threat to safe drinking water. And I recognize that working to overcome this issue has not been easy or cheap for both States and drinking-water systems, and I applaud the efforts you have made.

The bill, H.R. 212, would continue us on this path forward, requiring EPA to draft a strategic plan for addressing the problem, providing important guidance to States and water systems, and entering into cooperative agreements.

So, Mr. Arndt, do you see these as positive steps forward, first of all, you know, the bill and what the bill is suggesting?

Mr. ARNDT. I am a firm believer in developing a plan whenever attempting to address any complex undertaking. And it seems to me that the framework that is established within H.R. 212 represents an outline of a good plan and effort that can help us to answer the unanswered questions and obtain the information necessary to deal with these threats.

Mr. PALLONE. OK. Thanks.

But the plan is only going to be effective if it is implemented. And, as we heard from the first panel, the EPA will need funding to implement the plan and enter into cooperative agreements.

So would you agree that EPA will need resources to implement this plan and enter into these kinds of agreements with States and water utilities?

Mr. ARNDT. Well, I think that ultimately rests with the determination that comes out of the effort that is pursued as a result of the plan. There is no presumption in this legislation that there is a need for a specific regulation on cyanotoxins or cyanobacteria. That is the outcome of the work that would be accomplished under

that plan. And so to state at this point that there will be a necessary investment is, I think, premature.

Mr. PALLONE. Did you want to say something, Mr. Baker, on that?

Mr. BAKER. I think that EPA is expending a lot of resources to address several of the key elements that are identified and they would be required to address in the strategy.

And doing the science behind health advisories and analytical methods—I guess I would equate it to a bandwidth-type issue, as, you know, they can only do so much with the resources that they have available. And given the critical nature of the health threat that we face with this, more resources to advance the science quicker, I think, would be advantageous.

As well, as they enter into the real cooperative agreements with States and public water systems and providing direct technical assistance, it takes a substantial amount of resources, both at the Federal level, State, and the local level.

Mr. PALLONE. OK. I mentioned it because the President's budget includes significant funding for drinking-water infrastructure through the State Revolving Fund and a new bond measure.

Let me go back to Mr. Arndt, and then I will ask Mr. Baker.

Would you think that the increased funding—I mean, what would that kind of increased funding that the President's budget proposed mean for water utilities like yours, if that was made available?

Mr. ARNDT. I would concede that there is certainly a significant need for water infrastructure funding in order to meet all of the challenges that are before us, including dealing with new and emerging contaminants that are going to be regulated. And, certainly, any sources the Federal Government can bring to bear can certainly assist in meeting that need.

Mr. PALLONE. Do you want to answer that, too, Mr. Baker?

Mr. BAKER. I would agree with Mr. Arndt that there are tremendous infrastructure needs at our public water systems, including specific needs to address harmful algal blooms. And the money available through the SRF is a tremendous tool to assist public water systems with doing that.

Mr. PALLONE. OK.

Well, the budget also calls for more concerted efforts to address nutrient pollution. So let me just ask Ms. Meyer, do you think that funding is important, as well? I will ask you the same question.

Ms. MEYER. Thank you, Congressman.

Certainly, I do think that the funding is important to address the nutrient pollution. But there is always more need than there is funding. And so, you know, certainly, we have been doing a really good job at targeting that funding in the most, I would say, nutrient hotspots, but we need to continue to fully fund these programs to make sure that we are protecting our water quality.

Mr. PALLONE. All right.

I mean, I would just say, Mr. Chairman, that I guess my concern is that we can't expect new work, like the strategic plan under this bill, to come out of existing funds that are already stretched thin. I mean, that is my whole point here.

Thank you, Mr. Chairman.

Mr. SHIMKUS. The gentleman yields back his time.

The chair now recognizes the gentleman from West Virginia, Mr. McKinley, for 5 minutes.

Mr. MCKINLEY. Thank you, Mr. Chairman, and also for Congressman Latta for bringing this to our attention and really shedding light on this whole subject of funding for our clean water and drinking-water programs.

I have heard now several people testify that the SRF actually got more money. And I just heard from the ranking member say that increased funding—but I have here a report from the ASCE, the American Society of Civil Engineers, that the funding has been reduced to the SRF.

So I am just curious, did I—Mr. Chairman, did I hear wrongly that he said that they increased the funding for the SRF?

Mr. SHIMKUS. If the gentleman would yield.

Mr. MCKINLEY. Yes.

Mr. SHIMKUS. I think the issue was there was a reduction in the last budget year, and the President has proposed an increase in this budget year.

Mr. MCKINLEY. But the report I am getting from the American Society of Civil Engineers says it has actually been reduced by 2 ½ percent over the previous amount that was put in. Because the President had markedly reduced the money for the SRF last year, and it was the Appropriations Committee who put it back in, put money back in, to get it to a higher level, and he has reduced it again, the President has reduced it again.

So I am concerned whether or not they understand the problem we are facing here. The American Water Works Association has already indicated they have identified over a trillion dollars of water infrastructure problems, but yet they keep reducing the amount of money available. Because most communities rely very heavily on the SRF. And, once again, we are going to have to see if we can pump money back up into that.

So, again, representing small communities—I don't have a town in my district over 30,000 people. And when they are facing some of the problems that are going to be having to be addressed, with Latta's issue or others', how are we going to get the money? What are some of the projections of how we might be able to find the money if the administration keeps slashing money out of the SRF?

Mr. BAKER. Do you want——

Mr. MCKINLEY. I don't care. Whoever wants to take that on.

Mr. BAKER. Thank you.

Well, I think as I have indicated, our experience is that the SRF has been an extremely valuable tool in helping particularly small, medium-size public water systems and addressing their infrastructure needs and being able to provide them below-market funding and other incentives to address highly needed infrastructure repairs and replacements.

So we continue to support the funding of the SRF at levels that support that, and we appreciated seeing the increased level proposed this year.

Mr. MCKINLEY. Yes. I am glad the Congress put the money back in, but I hate seeing the fact that the administration now has re-

duced it and trying to represent through Dr. Grevatt that that was increased.

You know, when you look at the sheer numbers, we are talking about 50,000 to 55,000 treatment facilities across America, not all of which are getting surface water, but probably a great number of them are. And I am just concerned how we are going to address this long-term issue of funding, especially if it is a trillion dollars that is out there in that requirement.

Mr. Arndt?

Mr. ARNDT. The American Water Works Association has long supported funding to the SRF programs. And I think it is accurate to say that the SRFs have never been funded to the full level of the authorization for those programs. And yet, at the same time, the need for funding has grown not just with inflation but with the aging of facilities and increasing regulatory requirements and other needs.

So I think your point is very well-made that additional funding is necessary. And there is no one, single source that is going to resolve that shortfall. We need to look at a multiplicity of sources that can be applied to making those infrastructure investments that we need to make sure that we have safe water and we continue to provide the services that are needed to support our economy.

Mr. MCKINLEY. Thank you.

I yield back the balance of my time.

Mr. SHIMKUS. The gentleman yields back his time.

The chair recognizes the gentlelady from California.

Do you have questions?

Mrs. CAPPS. No.

Mr. SHIMKUS. Thank you.

Turning to my side, would anyone like time for questions?

Seeing none, we want to thank the panel for joining us today, and we look forward to working with you.

This is a step in the right direction. Are there more actions required in the future? Maybe. And we will address those as we move forward.

I want to thank my colleagues for bearing with us on the hearing today.

And I ask unanimous consent to include letters from the American Water Works Association and Clean Water Action—oh, I am sorry, the Association of Metropolitan Water Agencies. Is there objection?

Hearing none, so ordered.

[The information appears at the conclusion of the hearing.]

Mr. SHIMKUS. And we will adjourn this hearing and reconvene promptly for the markup.

[Whereupon, at 12:35 p.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

PREPARED STATEMENT OF HON. FRED UPTON

Today, we gather to discuss H.R. 212, Mr. Latta's bipartisan Drinking Water Protection Act. Following the hearing we'll proceed right to a subcommittee markup, and I thank all the members for their participation as we close out this week's work.

The whole nation was watching last summer when folks in Northwest Ohio were cautioned to avoid drinking their tap water due to the algal bloom in Lake Erie. The experience raised more questions than it answered:

- Which algae strains produce toxins that we need to worry about?
- How do we detect and measure those toxins?
- What steps can we take to protect the public?

As someone who represents a big chunk of Michigan coastline, I have long been a champion of all issues related to our Great Lakes and protecting those who live around them. This bill will give the EPA the tools they need to prevent future occurrences like the one that happened in Ohio.

Tackling this problem requires collaboration among EPA, the states, and Congress. That's what today's hearing is all about. Our first witness, EPA's Peter Gravatt, has been working with us since last fall on this complex issue. Thank you, Peter, for meeting with us, and for testifying before this subcommittee twice within three months on the algal toxin problem for drinking water. We appreciate your hard work, and we have confidence in your ability to help solve this.

That's why this bill doesn't tell EPA what plays to call, or even when to call them, it merely asks EPA to put together a game plan for tackling the issue.

In addition to collaboration, success will require the persistence of all of us, and maybe some patience. We can't wave a magic wand and make the algal toxin issue go away, but we can help EPA develop a plan to manage the problem. Let's get going.

CLEAN WATER ACTION

Testimony of
Lynn W. Thorp
National Campaigns Director
Clean Water Action

Before the
Subcommittee on Environment and the Economy
of the
U.S. House of Representatives Energy and Commerce Committee

Cyanotoxins in Drinking Water
November 19, 2014

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."