BEFORE THE POLLUTION CONTROL BOARD
OF THE STATE OF ILLINOIS

IN THE MATTER OF:	)	
	)	
PUBLIC WATER SUPPLIES:	)	
PROPOSED NEW 35 ILL. ADM.	)	**R18-17**
CODE 604 AND AMENDMENTS	)	**(Rulemaking – Water)**
TO 35 ILL. ADM. CODE PARTS	)	
601, 602, 607, AND 611	)	

NOTICE OF FILING

To: Don Brown, Clerk
Tim Fox, Hearing Officer
Illinois Pollution Control Board
100 West Randolph
Suite 11-500
Chicago, IL 60601

And Attached Service List

Please take notice that on December 20, 2017, I filed electronically with the Office of the Clerk of the Illinois Pollution Control Board the attached **Post-Hearing Comments of the City of Springfield, Office of Public Utilities d/b/a City Water, Light and Power**, a copy of which is attached and served upon you.

Respectfully submitted,

THE CITY OF SPRINGFIELD,
a municipal corporation

By _____
One of its Attorneys

Dated: December 20, 2017

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POST-HEARING COMMENTS OF THE CITY OF SPRINGFIELD, OFFICE OF PUBLIC UTILITIES d/b/a CITY WATER, LIGHT AND POWER

Now comes the City of Springfield, Office of Public Utilities, d/b/a City Water, Light and Power, by and through one of its attorneys and pursuant to the Hearing Officer Order entered during the November 16, 2017 hearing in this matter, and timely files these Post-Hearing Comments in the above-captioned rulemaking proceeding.

Background

The City of Springfield owns and operates the municipal utility referred to as City Water, Light and Power ("CWLP") and provides water service to a population of nearly 150,000 people in and around Springfield. This includes retail service to Springfield as well as Southern View, Leland Grove and certain unincorporated areas around the city. Wholesale service is provided to the surrounding communities of Grandview, Jerome, Loami, Rochester, Sugar Creek Public Water District, Williamsville-Sherman Water Commission and Round Prairie Water Cooperative. Springfield also serves as a back-

up, secondary water supply for the Village of Chatham and the Curran-Gardner Water District.

CWLP is responsible for planning, constructing and maintaining the City's integrated water supply, purification, and distribution system—which includes Lake Springfield, the Water Purification Plant, three water storage tanks, and approximately 750 miles of water mains. The Water Division's primary mission is to ensure that all utility customers will have a safe and plentiful water supply in both the immediate and long-term future. Toward this end, the Division operates a 24-hour plant where plant operators consistently and continually check drinking water quality throughout the water system. Division employees are also actively involved in researching and implementing best management practices for protecting our current supply source.

Through its Water Division Manager, Ted Meckes, CWLP participated in the stakeholder process which assisted in the development of the rulemaking proposal in this matter. Mr. Meckes is also the current past chair of the Illinois Section of the American Water Works Association and presented testimony to the Board at the November 16, 2017 hearing in this matter.

On August 3, 2017, the Illinois Environmental Protection Agency ("Agency" or "Illinois EPA") filed a rulemaking proposal with the Pollution Control Board ("Board") that made changes to 35 Ill. Adm. Code Parts 601, 602, 607 and 611 and adds a new Part 604. The Board scheduled hearings for October 17 and November 16, 2017. At the October 17th hearing, CWLP pre-filed questions for the Agency witnesses on a handful of issues raised by the proposal. Agency witnesses effectively clarified the intent of their proposal or agreed to changes to the proposal that addressed the City's initial

concerns, with the exception of the amendments to Section 604.725, Residual Chlorine. Ted Meckes submitted pre-filed testimony for the November 16, 2017 hearing in this matter to highlight these concerns and responded to questions raised by the Board at that time. In these Post-Hearing Comments, the City of Springfield will briefly summarize the evidence entered into the Record on this issue.

Section 604.725 Residual Chlorine
Illinois EPA Proposal and State Agency Testimony

The current Illinois regulations establishing minimum chlorine residuals were adopted by the Agency and are found at 35 Ill. Adm. Code 653.604. Section 653.604 requires a minimum free chlorine residual of 0.2 mg/l and a minimum combined (total) chlorine residual concentration of 0.5 mg/l to be "maintained in all active parts of the distribution system at all times." The proposed rule raises the minimum free chlorine residual that must be maintained in all a parts of the distribution system at all times to 0.5 mg/l and the combined/total chlorine residual to 1.0 mg/l in proposed New Section 604.725(a).

In preparation for the first hearing in this matter, the City of Springfield submitted pre-filed questions to the Agency which were intended to ascertain the scientific basis for this new requirement and the Agency's conclusion that "this increase is necessary for the protection of public health." Pre-filed Testimony of Dave McMillan at p. 5. In response to the City of Springfield's questions, Illinois EPA pointed the parties to a United States Environmental Protection Agency ("U.S. EPA") webinar as the basis for the increase in the free chlorine residual requirement. Illinois EPA's October 12, 2017 Responses to Pre-Filed Questions at p. 36. For increasing the combined chlorine

requirement, Illinois EPA pointed to a single American Water Works Association publication (M-56 Fundamentals and Control of Nitrification in Chloraminated Drinking Water Distribution Systems) that the Agency indicated supported the general proposition that chlorine concentrations of greater than 1.5 mg/l are less likely to experience nitrification. Id. A single hard copy of this document was made available to the Board on November 1, 2017. Illinois EPA's November 1, 2017 Responses to Follow-Up Questions Posed at October 17th Hearing at p. 3. In the event the Board chooses to rely on this document as a technical basis to increase the combined chlorine minimum residual requirement, CWLP comments that the Board should provide a detailed explanation in its First Notice Opinion as to how this document supports an increase in the combined chlorine residual minimums so the public can adequately respond.

At the hearing, CWLP entered Exhibits 1-4 into the Record from the webinar cited by Illinois EPA in support of the increased free chlorine residual requirement. Exhibits 1 and 2 document the minimum chlorine residual requirements across the country. These Exhibits demonstrate that if the Board were to adopt the proposed changes, Illinois would join Louisiana as the only State with a free chlorine residual requirement of 0.5 mg/l or higher and would join five states (Iowa, Oklahoma, Kansas, North Carolina and Ohio) with a total chlorine minimum residual of 1.0 mg/l or higher. As explained in Mr. McMillan's testimony, there is no numeric minimum chlorine residual required under federal law. October 17, 2017 Hearing Transcript at pp. 36-37. U.S. EPA simply requires community water supplies to maintain detectable levels of chlorine in their distribution systems.

Exhibit 3 (Total Coliform Positives in Surface Water, 2006-2011) and Exhibit 4 (E. Coli & Fecal Coliform Positives in Surface Water, 2006-2011) are tables presented in the U.S. EPA webinar cited by the Agency which were taken from the study "Six-Year Review 3 Technical Support Document for Microbial Contaminant Regulations, EPA 810-R-16-10 (December 2016)." The bar graphs contained in these Exhibits demonstrate the findings of that study that correlation can be found between total chlorine residual levels below the detection level of 0.2 mg/l and positive bacteria samples. For *e coli* and fecal coliform samples, there seems to be no significant reduction in positive samples for levels above 0.2 mg/l while for Total Coliform samples, there was some additional reduction in positive samples for levels between 0.2 mg/l and 0.5 mg/l with no significant improvement at total chlorine residual levels greater than 0.5 mg/l compared to those greater than 1.0 mg/l. There is no evidence in the record that increasing the total chlorine residual from 0.5 mg/l to 1.0 mg/l would result in statistically fewer positive bacteria samples. The Agency did not dispute these conclusions in its testimony at the October Board hearing and indicated that no additional analysis had been performed on Illinois data that would reach a different conclusion. See, Transcript at pp. 40-43. The Agency also presented no scientific evidence in the record that would demonstrate to the Board that increasing the minimum chlorine residual requirements will not adversely affect the levels of disinfection byproducts. Id. at 41, https://www.youtube.com/watch?v=nd0pFsiKL30.

In addition to the Agency testimony, the Illinois Department of Public Health ("IDPH" or "Department") submitted pre-filed testimony from Justin DeWitt for the November 16, 2017 hearing regarding the proposed increase in chlorine residual

minimums. Mr. DeWitt's testimony with regard to this issue focused on an outbreak of Legionnaires disease at the Veteran's Home in Quincy, Illinois. Mr. DeWitt testified:

> In 2015, Illinois experienced its largest outbreak of Legionnaires disease at the Illinois Veterans Home in Quincy. This century old campus is served by a public water supply operating within the current parameters for disinfectant residual, however those parameters proved insufficient to prevent the colonization of the domestic water systems and the eventual proliferation of Legionella bacteria. 12 deaths and over 50 ills [sic] were associated with a two year long outbreak. Ultimately, the veteran's home installed a water treatment plant to retreat the water received from the public water supply in Quincy. ...Due to the age and condition of the plumbing found on site, the minimal residual disinfectant found in the public water supply was found to be drastically ineffective. With total free residual chlorine at or above 1ppm throughout the domestic water system, the veteran's home has seen remarkable improvement in biological monitoring results across the campus. The veteran's home in Quincy is representative of the aging water infrastructure in Illinois.
>
> IEPA has determined to increase the residual disinfectant levels required of public water supplies in order to improve and maintain water quality in plumbing systems. IDPH provides specific support to this proposed change as there are approximately 300 annual cases of Legionellosis in Illinois. Improving the disinfectant residual across the potable water systems is anticipated to have an effect on associated cases of illness.

DeWitt testimony at pp. 2-3.

In addressing this issue before the Board at the November hearing, Mr. DeWitt stated "If we can increase the -- the potential for reducing pathogens throughout the system, we feel that that's the appropriate step to take and in my testimony you will find discussion of outbreaks where the department has found in its testing that no residual chlorine, whether free or combined, was found at sites where we had outbreaks and so any increase that can be made will certainly move towards improving the quality of water and plumbing systems in buildings. We don't feel it will create any necessary hazards at the levels proposed by the agency." November Hearing Transcript at p. 24.

This testimony from Mr. DeWitt highlights the assumption being made by IDPH that issues with aging private plumbing which may be contributing factors in disease outbreaks can be addressed by simply requiring higher levels of residual chlorine to be delivered to already inadequate plumbing systems and achieve a reduction in pathogens. There is no scientific evidence presented that increased chlorine residuals would address the concern raised with aging private plumbing infrastructure and, in fact, the evidence presented demonstrates that adding additional chlorine compounds for their own sake will increase the production of cancer-causing disinfection by-products. While CWLP shares IPDH's concern that disease outbreaks be prevented, we do not share their conclusion that this proposal would be a public health solution. Large private plumbing systems like the Veterans Home need to develop Water Quality Management Programs to ensure adequate turn-over of water to reduce water age and maintain adequate chlorine residuals.

When the Board inquired about any evidence that could be gleaned from the Department's sampling of chlorine residual levels in connection with disease outbreaks, Mr. DeWitt testified that:

> HEARING OFFICER FOX:. Mr. DeWitt, moving along. The board's question ten asks for the department's comment on whether the sampling parameters include residual chlorine and, if so, whether IDPH has found any correlation between the measured residual chlorine levels and the outbreaks that you referred to?
>
> MR. DEWITT: When IDPH performs indicator[1] is the amount of residual chlorine found in the potable water system. IDPH investigative staff are trained and equipped to perform field tests for total and free chlorine water. While water systems may contain residual levels of chlorine and still be found contributing to the spread of disease, those systems found

[1] "When IDPH performs indicator" from the hearing transcript should read "One IDPH performance indicator."

> have **no residual chlorine at all are almost universally implicated in related outbreaks**." (emphasis added).

November Hearing Transcript at Page 28-29.

With regard to the sampling conducted specifically with regard to the Quincy Veteran's Home outbreak Mr. DeWitt testified that: "as part of that investigation we looked at the facility prior to any changes being made and in that case we found little to no residual chloramine being delivered to that campus." November Hearing Transcript at pp. 29-30. Mr. DeWitt's testimony highlights the conclusion CWLP has presented in its testimony to the Board – detection of residual chlorine throughout the water distribution system is necessary to protect public health, but there is no scientific evidence that doubling those levels as proposed by the Agency would have any impact on preventing disease outbreaks. It would be more effective for water supplies to ensure that they meet the current standard rather than increasing that standard with no scientific basis.

Section 604.725 Residual Chlorine
Testimony from CWLP and Other Community Water Supplies

On November 7, 2017, CWLP Water Division Manager Ted Meckes, P.E. submitted his pre-filed testimony to the Board in this matter. That testimony expressed several concerns with the proposed increase to the total chlorine residual minimum for the City of Springfield's combined chlorine system. Mr. Meckes testified that although CWLP maintains levels of 2.2 to 2.5 mg/l of chlorine residual leaving the treatment plant, at times, in the far reaches of the system, chlorine residuals as low as 0.5 mg/l may be found. Meckes testimony at p. 2. Mr. Meckes testified that chlorine residuals at these levels are absent of bacteria growth and do not have an objectionable odor or

taste for most customers. Id. Mr. Meckes also testified that he had concerns that requiring an increase in chlorine residual to 1.0 mg/l could have the unintended consequence of increasing complaints of a chlorine odor or taste thereby undermining already skeptical public confidence; increasing levels of dangerous trihalomethane compounds, haloacetic acids and other chlorinated by-products; encouraging community water supplies to relocate sampling points to the main; and increasing costs to communities with no demonstrated increased benefit. Meckes testimony at pp. 2-4. Finally, Mr. Meckes testified that no public health issues have been observed in Springfield at the current chlorine residual concentrations.

In Mr. Meckes' presentation to the Board, he summarized the issue this way:

> "A combination of these facts, waters disinfected prior to first use, pipelines remain pressurized and any detectable amount of chlorine assures water was, indeed, properly treated. This demonstrates that a residual of 0.5 or even a 1.0 total residual is irrelevant. The federal regulation that chlorine residual is detectable provides an adequate public health protection. Increasing chlorine residual will increase disinfection bi-products. The formation of disinfection by-products is simple math. The more disinfectant, the more disinfection by-products and there is a cost with this change: Increased flushing costs, increased chemical cost due to raising chlorine feed as well as installing water samplers."

November 17, 2017 hearing transcript at pp.16-17.

CWLP is not the only community water supply to express concerns with this increase in the minimum chlorine residual. To date, comments have been submitted to the Board from Illinois Section American Water Works Association - Water Utility Council (Public Comment #7), Illinois American Water (P.C. #24) and the following communities in opposition to this change:

1. Central Lake County Joint Action Water Authority – William J. Soucie (PC#8 and PC#12)
2. City of Batavia - Jeremy P. Barkei (PC#9)
3. City of Decatur- Keith Alexander (PC#10)
4. Village of Aurora - Paul S. Young (PC#11)
5. Village of East Dundee –Phillip W. Cotter (PC#13)
6. Village of Romeoville - Carl Groth (PC#14)
7. City of Crest Hill – Mayor Raymond R. Soliman (PC#15)
8. Otter Lake Water Commission - Dennis Ross (PC#17)
9. City of Lockport - Scott Green (PC#18)
10. Village of Montgomery – Matthew T. Brolley (PC#20)
11. Village of South Elgin - Steven Ward (PC#22)

As of the date of filing of these Post-Hearing Comments, no stakeholders have submitted comments in support of the position of the Agency and IDPH on this issue.

Technical Feasibility and Economic Reasonableness

Pursuant to Section 27(a) of the Environmental Protection Act, the Board must consider the technical feasibility and economic reasonableness of all rulemaking proposals. 415 ILCS 5/27(a). With an eye to this requirement, CWLP inquired of the Agency regarding the cost of this new requirement in Section 604.725. Mr. McMillan testified that "from the data that I reviewed, most water systems – 80 percent of the water systems in June of 2017, the reported combined residuals were maintaining greater than 1." October Hearing Transcript at p. 53. In adopting this proposal, the Board must determine the economic reasonableness of achieving compliance for the

remaining community water supplies that do not currently comply with the increased residual requirements at all times, under all conditions, and at all points in their distribution systems.

When asked to present evidence of the cost, Mr. McMillan testified that "We looked at the cost and feel that it is an incremental cost. In other words, when we identify an area, then we would expect the water system – there's so many tools in the toolbox – to address the issue. We feel it's a manageable cost." October Hearing Transcript at pp. 56-57.

The Agency's written response to CWLP's question 5a "What cost was assumed for this increased chemical usage?" was "The Agency believes there could be a minimal increase in chemical usage. Increased cost may result from proper water quality management including, but not limited to, installation of tank mixers, looping water mains, employing flushing, and enhancement to treatment (e.g. improved organic removal, biological active filtration, and improved chemical addition controls)." October 12, 2017 Agency Response to Pre-Filed Questions.

In his testimony to the Board, Mr. Meckes raised issues about the conclusion that cost will be minimal or manageable. First Mr. Meckes asked the following question in his pre-filed testimony:

> As a provider of wholesale water to other neighboring communities and water districts, we question if those satellite systems experience low chlorine residuals in their system would the water producer be required to raise their chlorine levels or would the individual community be required to install a rechlorimination system? A chlorine/ammonia feed system that could accurately feed the correct amounts of chlorine and ammonia would be very difficult to operate and very expensive to install and maintain. If the water provider was required to raise chlorine levels so that purchasing supplies meet this requirement, this would place a burden on the water

> provider to maintain chlorine residuals without the ability to maintain the wholesale supplies distribution system.

Meckes testimony at p. 4.

In his oral testimony at the November 16th hearing, Mr. Meckes also referenced the cost of one action the City might take to ensure technical compliance with the requirement – moving sampling locations to avoid problem areas. "In Springfield alone, we have 48 sample sites and 41 alternates that are located strategically throughout our city. We look for sites that are accessible seven days a week, for example, gas stations, restaurants, city owned buildings, basically where people frequent so that we can test the water that the people are drinking. Installing sampling stations on our water distribution mains may solve that problem of the chlorine residuals, but it comes at a cost. Each sample station is about $900, plus we have to dig up the water main, tap the water main, install the sample station, clean up the area. It's a total cost of approximately $3,000 per station. For Springfield alone, that would be about $250,000. And, more importantly, we would not know the quality of the water that the people are drinking…" November Hearing Transcript at p. 20.

The evidence in the Record to date is insufficient for the Board to conclude that increasing the minimum combined/total chlorine residual from 0.5 mg/l to 1.0 mg/l is economically reasonable for all affected community water supplies. This is particularly true if the limited cost information presented is balanced against the lack of scientific evidence of public health or environmental improvements that would result from adoption of this proposal.

Conclusion

The City of Springfield, Office of Public Utilities appreciates this opportunity to provide additional comments and express our concerns with one Section of what overall is an excellent proposal to modernize, clarify and streamline the drinking water regulations for the community water supplies in the State of Illinois.

Respectfully submitted,

The City of Springfield, Office of Public Utilities

By _____

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Regulatory Affairs Director

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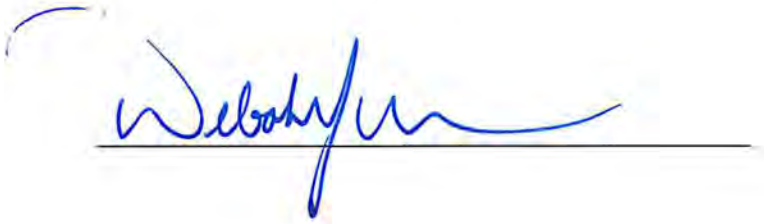
CERTIFICATE OF SERVICE

The undersigned, Deborah J. Williams, an attorney, certifies that I have served upon the individuals named on the attached Service List a true and correct copy of the **NOTICE OF FILING** and **POST-HEARING COMEMNTS OF THE CITY OF SPRINGFIELD, OFFICE OF PUBLIC UTILITIES d/b/a/ CITY WATER, LIGHT AND POWER**, by First Class Mail, postage prepaid, on December 20, 2017, from Springfield, Illinois unless indicated otherwise on the Service List. Where service by email is indicated on the attached Service List, service was made from the email address (deborah.williams@cwlp.com) of this 16 page document before 5:00 p.m. on December 20, 2017 to the address provided on the attached Service List.



This filing is submitted electronically and served on recycled paper as defined in Subpart B of the Procedural Rules

SERVICE LIST R18-17

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