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The York Water Company
Public Comments to the Environmental Quality Board
Regarding Proposed Rulemaking
(25 Pa. Code Chapter 109)
Disinfection Requirements Rule
(46 Pa. B. 857)
April 5, 2016

Respectfully, The York Water Company does not support the Department's efforts to amend Chapter 109 as put forth in the Disinfection Requirements Rule. We agree with the 'ideals' of the Department and with the mission of protecting public health. The York Water Company has taken this mission of protecting our resident's and our customer's health by providing good, high quality, potable water for the past two hundred (200) years. However, The York Water Company respectfully disagrees with the Department's justifications, as defined by the Preamble, for this regulatory package. Additionally we disagree with the impacts that the proposed changes would have on both the regulated community and those served with public water; including the actual costs associated that add up to nearly two orders of magnitude greater than (100X) the Department's projections. We question whether an evaluation of the costs versus potential benefits of the proposed package (*as written*) has been fully accounted for, yet.

"What problem are we trying to solve with this reg. package?" - Quoted from a colleague in the water industry.

If the main focus of the Department is to "define a detectable residual", where 0.02-mg/L is not accepted as "detectable, we humbly suggest that the Department simply change the detectable residual in Chapter 109 to 0.1-mg/L leaving all else in place – including HPC as the alternative compliance criteria for low chlorine residual situations. This is very similar to what the TAC Board had recommended to the Department. The Philadelphia Water Department has made an alternative suggestion as part of the most recent Stakeholder Group meeting via, Jeff Rosen that also has merit.

Since there is no scientifically defensible threat(s) that this proposed reg. package is attempting to solve AND since there are no scientifically defensible benefits, AND there are significant costs / detriments associated with meeting the reg. package, as written, it seems logical to change tact. The least intrusive and most easily accomplished path is to simply exchange 0.02-mg/L and insert 0.1-mg/L, without altering the remainder of Chapter 109 . The Department has the science and the math relating to 0.1-mg/L being the minimum detectable residual.

However, we still feel compelled to address and challenge many details of the Proposed Package in the following written testimony.



As well as can be defined at this point, the Cost / Benefits can be summarized in the below table:

Cost vs. Benefit Table	
Costs	Benefits
- Approximately 50X to 100X (fifty to one-hundred) times DEP's estimated costs - statewide	- Possible Protection from Waterborne Disease Outbreaks - EXCEPTING those that US CDC focuses on as a direct result of the top deficiencies; this package does <u>not</u> address: 1) Premise Plumbing - 66% 2) Untreated Ground Water - 13%
- Cost increases to customers, especially to those of Large and Medium sized systems - 91% of PA population served with public water is Med and Large water systems.	Per the US CDC, Combined these two deficiencies make up 79% of all waterborne disease outbreaks in the USA http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6431a2.htm
- Simultaneous compliance problems - Lead & Copper and DBPs (cancer-causing) http://www.cdc.gov/safewater/chlorination-byproducts.htm http://www.cdc.gov/nceh/lead/leadinwater/	- Possible improvement in coliform compliance: The average increase in compliance should be about 1.4%, based on the dataset the Department provided in the Preamble. (also see tables below)
- Increased civil liability - removal of HPC as an ACC	- DBP violations may not be as bad as the science suggests they likely should be.
- Increased public notification for non-health related violations	
- More customer complaints - high chlorine is already the most common customer complaint	

The ideals of the justifications as proposed in the Preamble are good – to protect the public health. The goals as set forth in the Preamble are:

- 1) Decrease Waterborne Disease Outbreaks,
- 2) Improve Coliform Compliance,
- 3) Zero impact on DBP compliance.
- 4) No or Minimal Cost impact to the majority of Water Systems

Unfortunately, when we investigate and compare what actions are being proposed to each individual goal, we find that there is no scientific evidence justifying the proposed regulations.

- 1) **“Decrease Waterborne Disease Outbreaks”**: If we truly want to seriously limit or eliminate Waterborne Disease Outbreaks, according to the US CDC need:
 - a. Premise Plumbing issues must be addressed
 - b. There needs to be additional focus on any remaining groundwater systems that are not presently disinfecting.

What’s the supporting evidence that the Department should focus on these issues?

According to the US CDC, Waterborne Disease Outbreaks in the USA (and PA) are related primarily to two known, and specifically identified deficiencies:

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6431a2.htm>:

- c. 66% = Premise Plumbing – completely separate from the water distribution system as defined multiple times in multiple locations by the US CDC
- d. 13% = Untreated Groundwater



Per the US CDC, **“The two most commonly identified deficiencies† leading to drinking water–associated outbreaks were Legionella in building plumbing§ systems (66%) and untreated groundwater (13%). Continued vigilance by public health, regulatory, and industry professionals to identify and correct deficiencies associated with building plumbing systems and groundwater systems could prevent most reported outbreaks and illnesses associated with drinking water systems.”**

“† Outbreaks are assigned one or more deficiency classifications based on available data.
(<http://www.cdc.gov/healthywater/surveillance/deficiency-classification.html>).

§ **“Plumbing” refers to the pipes that are within a building or within a service line leading into a building, distinguished from the distribution system of pipes that compose the water supply.”**

Quoted Text Copied From:

The US-CDC Morbidity and Mortality Report Weekly, Titled: Surveillance for Waterborne Disease Outbreaks Associated with Drinking Water – United States, 2011–2012, Weekly

August 14, 2015 / 64(31);842-848

Karlyn D. Beer, PhD^{1,2}; Julia W. Gargano, PhD²; Virginia A. Roberts, MSPH²; Vincent R. Hill, PhD²; Laurel E. Garrison, MPH³; Preeta K. Kutty, MD³; Elizabeth D. Hilborn, DVM⁴; Timothy J. Wade, PhD⁴; Kathleen E. Fullerton, MPH²; Jonathan S. Yoder, MPH, MSW²

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6431a2.htm>

The US CDC further clarifies the differences between “Building Plumbing / Premise Plumbing” and Distribution Systems.

Below is copied from the US CDC page linked below – screen-shot of the entire page follows immediately after.

(<http://www.cdc.gov/healthywater/surveillance/deficiency-classification.html>).

*“*For a community water system, the distribution system refers to the pipes and storage infrastructure under the jurisdiction of the water utility prior to the water meter or property line (if the system is not metered). For noncommunity and nonpublic individual water systems, the distribution system refers to the pipes and storage infrastructure before entry into a building or house.”*

“† Contamination of drinking water and deficiencies occurring in plumbing and pipes that are not part of the distribution system as defined previously. For community systems, this means occurring after the water meter or outside the jurisdiction of a water utility; for noncommunity and nonpublic systems, this means occurring within the building or house (e.g., in a service line leading to a house or building, in the plumbing inside a house or building, during shipping or hauling, during storage other than in the distribution system, or at point of use).”



(<http://www.cdc.gov/healthywater/surveillance/deficiency-classification.html>).

Screen-shot below from US CDC webpage (link immediately above)

Deficiency Classification for Drinking Water and Other, Non-recreational Waterborne Disease Outbreaks

Waterborne disease outbreaks are assigned one or more deficiency categories based on available data. The deficiencies provide information about how the water became contaminated, water system characteristics, and factors leading to waterborne disease outbreaks.

Deficiencies Assigned to Outbreaks Associated with Drinking Water, Other Water, and Unknown Water Exposures

Contamination of drinking water (i.e., public, individual, or bottled water systems) at/in the water source, treatment facility, or distribution system¹

- 1: Untreated surface water
- 2: Untreated ground water
- 3: Treatment deficiency (e.g., temporary interruption of disinfection, chronically inadequate disinfection, or inadequate or no filtration)
- 4: Distribution system deficiency, including storage (e.g., cross-connection, backflow, contamination of water mains during construction or repair)
- 13: Current treatment processes not expected to remove a chemical contaminant (e.g., pesticide contamination of ground water treated with disinfection only)
 - A: Surface water
 - B: Ground water

Contamination of water at points not under the jurisdiction of a water utility or at the point of use²

- 5: *Legionella* spp. in water system
 - A: Drinking water (i.e., public, individual, or bottled water systems)
 - B: Other non-recreational water (e.g., cooling/industrial, water reuse, irrigation, occupational, decorative/display; includes water consumed from sources such as back-country streams)
 - C: Unknown water use (i.e., the intended purpose or use of the water is unknown or the water exposure category could not be determined)
- 6: Plumbing system deficiency after the water meter or property line (e.g., cross-connection, backflow, or corrosion products)
- 7: Deficiency in building/home-specific water treatment after the water meter or property line
- 8: Deficiency or contamination of equipment using or distributing water (e.g., drink-mix machines)
- 9: Contamination or treatment deficiency during commercial bottling
- 10: Contamination during shipping, hauling, or storage
 - A: Drinking water – tap water
 - B: Drinking – commercially-bottled water
- 11: Contamination at point of use
 - A: Tap
 - B: Hose
 - C: Commercially-bottled water
 - D: Container, bottle, or pitcher
 - E: Unknown
- 12: Drinking or contact with other non-recreational water

Unknown/Insufficient Information

- 99: Unknown/insufficient information
 - A: Drinking water – tap water
 - B: Drinking water – commercially-bottled water
 - C: Other non-recreational water
 - D: Unknown water use

¹For a community water system, the distribution system refers to the pipes and storage infrastructure under the jurisdiction of the water utility prior to the water meter or property line (if the system is not metered). For noncommunity and nonpublic individual water systems, the distribution system refers to the pipes and storage infrastructure before entry into a building or house.

²Contamination of drinking water and deficiencies occurring in plumbing and pipes that are not part of the distribution system as defined previously. For community systems, this means occurring after the water meter or outside the jurisdiction of a water utility; for noncommunity and nonpublic systems, this means occurring within the building or house (e.g., in a service line leading to a house or building, in the plumbing inside a house or building, during shipping or hauling, during storage other than in the distribution system, or at point of use).



<http://www.cdc.gov/healthywater/burden/need-for-estimate.html>

Another instance where the CDC is defining Premise Plumbing as separated from the Public Water System's Jurisdiction. (Link above and screenshot below)

<p>Waterborne Disease & Outbreak Surveillance & Reporting</p> <p>Reporting (NORS)</p> <p>Health Data</p> <p>Environmental Tracking Data</p> <p>Biomonitoring Data</p> <p>Health Promotion Materials</p> <p>Newsroom, Features, Observances, & Announcements</p> <p>Training & Education</p> <p>CDC at Work: Healthy Water</p> <p>Policy & Recommendations</p> <p>Fast Facts</p> <p>Index of Water-Related Topics</p>	<p>The ideal waterborne disease burden estimate will provide a cohesive umbrella estimate that covers</p> <p>All water uses, including:</p> <ul style="list-style-type: none"> • <u>Drinking and household uses</u> • <u>Recreation and leisure</u> • <u>Industry</u> • <u>Agriculture and food production</u> • <u>Medical and healthcare uses</u> <p>All water venues, including:</p> <ul style="list-style-type: none"> • Drinking water systems (public, private) • Natural swimming waters (beaches, fresh water) • Chlorinated swimming venues (pools, hot tubs/spas, water parks, foot spas) • Premise plumbing and building distribution systems • Irrigation and food processing water systems • Reclaimed water, graywater 	<p>Premise Plumbing</p> <p>Premise plumbing is the drinking water system that is inside housing, schools, and other buildings. It connects to the main drinking water distribution system, but the water utility does not monitor its safety. A large proportion of drinking water outbreaks are linked to pathogens that grow in premise plumbing and building water system parts—like hot water tanks, cooling towers, decorative fountains, shower heads, and water taps—and are inhaled through steam or aerosol 1-5.</p>
<p>References</p> <ol style="list-style-type: none"> 1. Haupt TE, Heffernan RT, Kramarzak J, Nehls-Love H, Rhebeck R, Powell C, Leonhardt KK, Chinis AS, Davis JP. An outbreak of Legionnaires' disease associated with a decorative wall fountain in a hospital. <i>J Infect Control Hosp Epidemiol.</i> 2012; 33(2):185-91. 2. Falkenstein JO 3rd. <i>Non-tuberculous mycobacteria from household plumbing of patients with nontuberculous mycobacterium disease.</i> <i>J Emerg Infect Dis.</i> 2011; 17(3):419-24. 3. Falkenstein JO 3rd. <i>Hospital water filters as a source of Mycobacterium avium complex.</i> <i>J Med Microbiol.</i> 2010; 58(Pt 10):1198-202. 4. Totin D'Angelo M, Glass MA, del Rio C, Halvosa JS, Blumberg HM, Horsburgh CR. <i>Hospital water as a source of Mycobacterium avium complex isolates in respiratory specimens.</i> <i>J Infect Dis.</i> 2004; 189(1):98-102. 5. Fields BS, Benson RF, Besser TE. <i>Legionella and Legionnaires' disease: 25 years of investigation.</i> <i>J Clin Microbiol Rev.</i> 2002; 15(2):566-76. 		

Sadly, this proposed reg. package does not address either of the two main deficiencies identified by the US-CDC, premise plumbing and untreated groundwater, though the CDC is referenced many times in the Preamble. Additionally, the Department continues to insist that Premise Plumbing is somehow under the jurisdiction of the Water Supplier and a part of the Distribution System. **Premise Plumbing is NOT part of the Distribution System.** The US-CDC goes to great efforts to distinguish and identify the differences between "The Distribution System" and "Premise Plumbing" so that there will be no confusion. The US CDC has specifically identified the jurisdictional dividing line(s) as the meter, the property line, or piping before entry into a building or house.

Additionally, The York Water Company is not authorized to enter local schools, hospitals, industrial campuses, or other premise plumbing networks to operate valves in their plumbing systems. We cannot



legally flush their piping, we cannot legally confirm or investigate internal cross-connections or plumbing failures (*unless a failure impacts the public water system's distribution system directly*), we cannot aid with moving water through lesser used areas, and we cannot maintain their plumbing network for them. Similarly, premise plumbing owners cannot operate or maintain a PWS' distribution system.

Should the two leading causes of Waterborne Disease Outbreaks ("and death") as identified by the US CDC not be addressed as part of this package, then how can the claim of preventing the same be made by the Department in item #17 in the Regulatory Analysis Form?

Also in item #17 The Department states that the costs associated with two disease outbreaks would be a "Cost Saved" by PA, should we enact the proposed package. Unfortunately, these costs cannot be claimed as a cost savings for PA as elevated chlorine residual could not have impacted either of the outbreaks listed. The Department is making the assertion that an elevated chlorine residual in a Distribution System would have prevented the cryptosporidiosis outbreak in Milwaukee, WI. This is patently false. It is well documented that cryptosporidium MUST be physically removed or inactivated by coagulation/settling/filtration and/or advanced forms of oxidation/disinfection (beyond chlorine disinfection). Cryptosporidium oocysts are extremely resistant to chlorine disinfection. Chlorine residual was not a factor in this outbreak. Since the inception of the Enhanced Surface Water Treatment Rule (2000), there have been no cryptosporidium outbreaks in the USA from a drinking water treatment system that is meeting the existing regulations filter turbidity regulations. The Salmonella outbreak was directly attributed to un-disinfected groundwater, serious lack of maintenance on a finished water facility (cracks, holes, sediment, animal penetration, etc...), and the lack of follow-through of both the PWS and local regulatory body – that had documented the failures in an inspection report eleven (11) years prior to the outbreak.

- 2) **"Improved Coliform Compliance"**: We, as an industry, have just made significant changes to operations, sampling, and compliance criteria as part of the Federal RTCR – Revised Total Coliform Rule that went into effect four (4) days ago, April 1, 2016. The Department is still working to publish its own version of the RTCR. However, the Federal RTCR was vetted via the FACA process and was created to protect public health from deficiencies in the distribution system, specifically as related to coliforms. The Federal RTCR specifically avoided identifying a mandatory chlorine residual for distribution systems. Additionally, federal advisory committees are meeting and investigating whether a specific residual should be included in a future reg package and if so, how it might be implemented.

The Department provided graphs as part of the Preamble and suggested that they demonstrated that states with mandatory distribution system residuals >0.2-mg/L had higher TCR (total coliform rule) compliance rates than PA – and rightfully suggest that the statistics could be applied to what PA should expect. Unfortunately, we disagree with the statistical interpretations of the dataset. Typically any result falling within two standard deviations can be considered an "insignificant difference" and those falling within one standard deviation are considered as the same result, or indifferent from "noise".

Our interpretation of the dataset is very different from that which the Department provided following its graphs in the Preamble. The evaluation below suggests that PA can expect no



statistically significant increase in coliform compliance rates (0.5% - 1.3% improvements). Please see the table below summarizing the data set that the Department provided in the Preamble. We can identify three states that performed better than PA (average of 1.3% better), four states performed effectively the same as PA (averaging 0.5% better), and one state performed worse than PA.

This is hardly worth the costs associated especially since the Federal RTCR just changed the compliance and testing environment in all distribution systems, less than 4-days ago! Additionally, it is flawed logic to presume improvements or compliance capabilities when proposing multiple and overlapping changes to the regulatory landscape at the same time, especially when the aspects of this reg package directly impact simultaneous compliance issues on more than one front quite directly and obviously.

Tables below were constructed from the data contained in the graphs located in item #28 of the Regulatory Analysis Form, as provided by the Department.

Total Coliform Rule (TCR) Violation Summary Utilizing Data from Bar Charts Presented in the Preamble (pages 863 - 866)										
Percentage of Community Water Systems with TCR Violations During the Years: FY2011 through FY2014										
Comparing PA violations vs. that of states with mandatory residuals >0.2-mg/L										
Summary:	State	Pennsylvania	Alabama	Tennessee	West Virginia	Illinois	Kentucky	Kansas	North Carolina	Ohio
PA should be able to expect 0 - 1.3% better TCR compliance rates with elevated distribution system residual.	Required Residual (Total/Free in mg/L)	0.02/0.02	0.5/0.2	0.2/Free	0.2/Free	0.5/0.2	0.5/0.2	10/10	10/10	10/10
	FY 2011	2.9	0.9	2.5	0.6	1.5	4.9	2.8	1.3	1.2
	FY 2012	2.6	2.4	1.9	0.4	1.9	4.1	3.2	1.1	1.0
	FY 2013	1.0	2.9	1.0	1.8	1.9	2.5	3.1	1.1	1.1
	FY 2014	2.1	1.7	1.5	1.7	1.9	3.9	3.4	0.8	1.5
3-states slightly better than PA (avg 1.3% better compliance rates)	Average Percent Violations Reported	2.9	1.8	1.7	1.1	1.9	3.6	3.1	1.1	1.2
	Std Deviation of Violations	0.94								
3-states effectively the same as PA	Average Difference from PA		0.6	0.7	1.3	0.6	1.4	0.7	1.3	1.2
			Same as PA	Same as PA	Better than PA	Same as PA	Worse than PA	Same as PA	Better than PA	Better than PA
1-state worse than PA (1% worse)										

Disinfection Byproduct (DBP) Violation Summary Utilizing Data from Bar Charts Presented in the Preamble (pages 863 - 866)										
Percentage of Community Water Systems with DBP Violations During the Years: FY2011 through FY2014										
Comparing PA violations vs. that of states with mandatory residuals >0.2-mg/L										
Summary:	State	Pennsylvania	Alabama	Tennessee	West Virginia	Illinois	Kentucky	Kansas	North Carolina	Ohio
PA should be able to expect 0.4 - 4.1% worse DBP compliance rates with elevated distribution system residual.	Required Residual (Total/Free in mg/L)	0.02/0.02	0.5/0.2	0.2/Free	0.2/Free	0.5/0.2	0.5/0.2	10/10	10/10	10/10
	FY 2011	2.0	0.9	3.8	2.2	0.9	6.6	1.9	2.0	2.1
	FY 2012	1.2	0.2	2.7	1.2	0.9	3.8	1.4	1.8	1.5
	FY 2013	0.9	3.8	1.7	1.0	0.4	2.0	1.2	1.6	1.4
	FY 2014	0.7	1.7	4.2	4.2	1.0	10.0	2.4	1.8	3.2
0-states better than PA	Average Percent Violations	1.9	1.7	3.1	2.2	0.6	5.4	1.7	1.8	2.1
	Std Deviation of Violations (Excluding Kentucky as an Outlier)	0.79								
4-states effectively the same as PA	Average Difference from PA		0.40	1.65	0.90	0.70	4.10	0.48	0.55	0.50
			Same as PA	Worse than PA	Worse than PA	Same as PA	Worse than PA	Same as PA	Same as PA	Worse than PA
4-state worse than PA (0.7-4% worse)										

3) "Zero impact on DBPs."

This is not correct. Under the same conditions, the higher the concentration of chlorine (free or combined) for a given water, the higher the DBPs (Disinfection By-Products – cancer causing). The table immediately above bears this out. This is the summary of the series of graphs the



Department provided in the Preamble summarizing DBP compliance in PA as compared to those states that have a mandatory distribution system residual >0.2 -mg/L of chlorine. This analysis shows that no state is better than PA at DBP compliance, four states are effectively the same as PA, and four are worse than PA, including one that is dramatically worse than PA (Kentucky). So, by both scientific and statistic projections, we can agree that DBPs will increase in PA should the minimum distribution system residual increase by ten-times (10X) as put forth in this proposed package.

The statistics and the science directly refute box number 13 of the Regulatory Analysis Form. DBPs and the Disinfection By-Product Rule will be directly impacted as a result of this regulatory package. Additionally, the Lead and Copper Rule will also be directly impacted. Elevated levels of residual disinfectant as necessary to comply with this proposed package will change corrosion of lead, specifically of those closest to the Point of Entry into the Distribution System where that residual will be highest.

4) **“No Significant Cost Impacts to the majority of Water Systems”**

Cost information for many utilities and suppliers was provided to the Department as part of the TAC Board testimony. Unfortunately, the Department has ignored those numbers and has made no notation in the Preamble nor updated its cost projections in the Regulatory Analysis Form.

We will detail the cost breakdown from a survey of water suppliers in PA that serve over 65% of the population that receive public water. The early estimates indicate that the capital expenditures will exceed the Department’s projections by over thirty-million dollars (\$30-million) and may actually be much more than that. The operating costs were not accounted for in the Department’s projections and are annual, recurring costs. These annual operating costs (recurring) also exceed the Department’s projections for capital investment, on an annual basis, by a significant margin.

Item #19 in the Regulatory Analysis Form is inaccurate because the math cannot be utilized in this fashion. The inaccuracies have been identified repeatedly and are part of the public record on multiple occasions, including testimony before the TAC and as part of the “Stakeholder Meetings”, but no qualifiers are mentioned nor noted that the estimates have been challenged, repeatedly, in the strongest possible manner. One cannot utilize average residuals for a water system to project ease of compliance nor projected expenditures, especially since compliance as proposed by the Department is on a single sample basis (not monthly average).

- 1) Monthly Average chlorine residuals cannot mathematically aid in the prediction of potential compliance
 - i. Proposed Regs determine compliance based upon individual results
 - ii. *Theoretical Example (Extreme): 120-monthly samples required*
 - 60-of those samples = 2.00-mg/L and
 - 60-of those samples = 0.02-mg/L
 - Monthly average = 1.01-mg/L – this is reported to the Dept. under present regs and is also the number



used to make their projections for cost and ease of compliance

2. Based on the new reg, the PWS would be out of compliance 60 times in the first month (*below 0.2-mg/L but still meets present regs*)
 3. Based on the Dept's choice of math for projections, this system expects no capital expenditures (*no flushers & no chemical booster necessary*) and thus has no concerns as its **average** residual is well over the proposed 0.2-mg/L – excepting the fact that the utility would be in "violation" 720-times in the first year.
 4. Overall ease of compliance projections are severely overestimated by the Dept.
- 2) Actual costs to achieve compliance are much higher than the Dept.'s predictions
- i. Automated Flusher capital cost estimated at **\$2,000** each, by the Dept.
 - ii. The Philadelphia Water Dept. has published estimates for their system, their cost for purchasing, installing, and securing each flusher is **\$45,000**
 1. This is greater than an order of magnitude difference
 2. **Even if** the actual costs worked out to be halfway between (\$23,500) – the Dept.'s estimated costs are **dramatically** understated – still "off" by an order of magnitude.
 3. The number of flushers needed, statewide is dramatically underestimated.
 - a. More than three systems need flushers
 - b. Much more than the Dept's estimated \$30,000 will be spent by the medium and large water systems on flushers.
 - iii. Operating costs are NOT accounted for in the Dept.'s cost projections.
 1. Nearly all medium and large water systems operating costs will increase
 2. The York Water Company projects annual operating cost increases, just to comply with the 0.2-mg/L proposed residual at **\$200,000/yr.**
 3. The Philadelphia Water Dept. projects its operating costs to increase by **\$2,500,000/yr. (\$2.5-million/yr.)** to comply with the proposed residual of 0.2-mg/L.
 4. The Dept. estimates a total combined cost, statewide at \$780,000

Based on the above, we need to consider what problem is it that we are actually solving with this regulatory package? Additionally, what problems are we creating?

Sincerely,

A handwritten signature in black ink, appearing to read 'Douglas J. Crawshaw'. The signature is fluid and cursive, written over a white background.

Douglas J. Crawshaw
Water Quality Manager
The York Water Company

Cost vs. Benefit Table

<u>Costs</u>	<u>Benefits</u>
- Approximately 50X to 100X (fifty to one-hundred) times DEP's estimated costs - statewide	- Possible Protection from Waterborne Disease Outbreaks - EXCEPTING those that US CDC focuses on as a direct result of the top deficiencies; this package does <u>not</u> address:
- Cost Increases to customers, especially to those of Large and Medium sized systems - 91% of PA population served with public water is Med and Large water systems.	<ol style="list-style-type: none"> 1) Premise Plumbing - 66% 2) Untreated Ground Water - 13%
- Simultaneous compliance problems - Lead & Copper and DBPs (<i>cancer causing</i>) http://www.cdc.gov/safewater/chlorination-byproducts.html http://www.cdc.gov/nceh/lead/leadinwater/	Per the US CDC, Combined these two deficiencies make up 79% of all waterborne disease outbreaks in the USA http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6431a2.htm
- Increased civil liability - removal of HPC as an ACC	- Possible improvement in coliform compliance: The average increase in compliance should be about 1.4%, based on the dataset the Department provided in the Preamble. (<i>also see tables below</i>)
- Increased public notification for non-health related violations	
- More customer complaints - high chlorine is already the most common customer complaint	- DBP violations may not be as bad as the science suggests they likely should be.