BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
AMENDMENTS TO THE GENERAL USE	)	R18-32
WATER QUALITY STANDARDS	)	Rulemaking – Water
FOR CHLORIDE	)	

NOTICE OF FILING

To: Don Brown, Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph Street, Suite 11-500
Chicago, IL 60601

PLEASE TAKE NOTICE that I have today electronically filed with the Illinois Pollution Control Board, the **TROTTER AND ASSOCIATES, INC.** written comments in opposition of Petition in R18-32, a copy of which is herewith served upon you.

Dated: January 16th, 2019

Respectfully Submitted

Trotter and Associates, Inc.

By: _____

Scott Trotter, P.E., BCEE
President
Trotter and Associates, Inc.
40W201 Wasco Road, Suite D
St. Charles, Illinois 60175

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
AMENDMENTS TO THE GENERAL USE	)	R18-32
WATER QUALITY STANDARDS	)	Rulemaking – Water
FOR CHLORIDE	)	

TROTTER AND ASSOCIATES, INC.'S COMMENTS ON PROPOSED RULEMAKING

Introduction

Trotter and Associates, Inc. is a consulting engineering firm located in St. Charles, Illinois. We provide civil and environmental engineering services to roughly 60 municipalities throughout northeastern Illinois. In this capacity we routinely review and provide guidance to our clients in regards to proposed or pending regulatory changes.

Understanding of Proposed Amendment

It is understood that the proposed amendments to 25 ILL. ADM. CODE 302.102 and 302.208(g) WATER QUALITY STANDARDS FOR CHLORIDES include a proposed acute standard of 860 mg/L and a chronic standard of 230 mg/L from May 1st to November 30th, as well as an acute standard of 1,010 mg/L and a chronic standard of 640 mg/L from December 1st to April 30th.

Impact of Proposed Amendment

It is the position of Trotter and Associates that if adopted, the proposed chloride water quality standard would pose a significant and unintended economic burden on a number of communities throughout the State.

Many Illinois communities source their potable water supply from groundwater wells. These include wells of varying depths, drilled into distinct aquifers, with different raw water quality. Some of these wells contain radium in excess of the USEPA maximum contaminant level (MCL) of five picocuries per liter (5.0 pCi/L). Several technologies and processes exist for removal of radium from this drinking water. One commonly utilized technology is an ion-exchange process, identified by the USEPA as a "Best Available Technology" (BAT) for radium removal. However, as part of this process the resin bed which exchanges ions in the removal of radium must be

regenerated. The most commonly used substance for regeneration is sodium chloride (brine solution), and most ion-exchange radium treatment facilities are designed specifically for sodium chloride regeneration. During this regeneration process a waste discharge of heavily concentrated chlorides is produced, which is typically tributary to a municipal sanitary sewer system and wastewater treatment facility. As most wastewater treatment facilities are not designed or capable of removing these dissolved solids, the chlorides are discharged with the effluent to the receiving waterway.

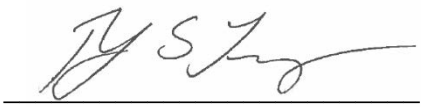
In discussions with several clients utilizing ion-exchange radium removal, Trotter and Associates has found that chloride concentrations in wastewater treatment facility effluent are typically below the current 500 mg/L single-value standard, but consistently above the proposed 230 mg/L chronic May – November standard.

Along with the use of ion-exchange technology for radium removal, the process is widely used in water softening applications as it removes the calcium ion found in drinking water. The same regeneration procedure and waste stream generated occur. This applies to both municipal water softening, as well as private home water softeners. Similarly, in discussions with clients Trotter and Associates has found that municipalities utilizing ion-exchange for water softening would consistently discharge an effluent in excess of the proposed 230 mg/L water quality standard. The effluent from wastewater treatment facilities analyzed by Trotter and Associates was found to be in the 300-450 mg/L range.

One representative client does not provide softened water; however they utilize ion-exchange for radium removal on roughly 25% of daily water produced. Most households within the community have private water softening systems. Trotter and Associates recently completed a Water Master Plan to evaluate softening alternatives and their relative impacts. As part of that study, a chloride mass balance was performed for removal of the ion-exchange system and found that the baseline effluent chlorides level would be approximately 300 mg/L (raw water chlorides and private home water softeners only). If the standard were amended, this community would be required to construct new radium removal facilities, and regulate home water softeners to maintain compliance.

Clearly, this is an undue burden for a number of communities throughout Illinois. Ion-exchange is widely used in radium removal and both municipal and residential water softening. Replacement or regulation of these systems would require significant capital expense.

In summary, we have found that our municipal client base is in compliance with the current chlorides water quality standard of 500 mg/L. Modification of the standard to a seasonal standard with a May - November chronic limit of 230 mg/L will have significant and unintended impacts. These impacts include required upgrade or replacement of numerous, well-functioning, potable water treatment facilities as well as banning or limiting the use of private home-based water softening systems. As such, each affected municipal or sanitary district wastewater authority may not have the regulatory powers to achieve compliance. Therefore, we request that the amendment not be adopted and that the current standard remain in place.



Scott Trotter, P.E., BCEE
Trotter and Associates, Inc.
President