



Pennsylvania Fish & Boat Commission

**Bureau of Fisheries
Division of Environmental Services
450 Robinson Lane
Bellefonte, PA 16823
814-359-5133**

October 30, 2009

Mr. Daniel J. Hufton, P.E., Senior Director, Production
Pennsylvania American Water Company
300 Galley Road
McMurray, PA 15317

Re: Pennsylvania American Water letter of Oct. 13, 2009 regarding chlorine and chloramine toxicity

Dear Mr. Hufton:

Thank you for your letter of October 13, 2009 to Dr. Tim Schaeffer. Your letter has been referred to me for response.

Our Division of Environmental Services confirms that both free chlorine and chloramines are quite toxic to aquatic life. Consequently, both compounds are used effectively as disinfectants. Chlorine is toxic to many aquatic organisms at concentrations less than 1 part per million, and we find that slightly higher chloramine concentrations are necessary to produce the same level of toxicity. We understand that combined chlorine (chloramines) is more persistent in water supply distribution systems, which makes use of this form of disinfection desirable at times. Greater persistence may also be a characteristic of chloramines if released into streams and lakes. The incomplete nature of fish kill data makes these data less useful in evaluating toxicity of chlorine and chloramines than laboratory toxicity data we examined.

Pennsylvania American's strict use of best management practices when dealing with both products is wise due to adverse environmental impacts of any disinfectant. This letter may assist you and others in understanding our position and is consistent with our mission to protect, conserve and enhance the Commonwealth's aquatic resources and provide fishing and boating opportunities. You may use this letter and statements we have made to represent our agency's position. We do not intend to offer a position with regard to which disinfectant may be most appropriate in your water supply systems.

We appreciate your interest regarding accurate portrayal of issues and protection of aquatic life. If you have any questions, you may contact me at (814) 359-5133.

Sincerely,

Mark A. Hartle, Chief
Aquatic Resources Section
Division of Environmental Services

c: J. Arway, T. Schaeffer, L. Young

Our Mission:

www.fish.state.pa.us

To protect, conserve and enhance the Commonwealth's aquatic resources and provide fishing and boating opportunities.