

Academic Journal Articles on Ozone and Ballast Water

Joel Mandelman

to:

Stephanie Sanzone

06/09/2011 12:07 PM

Cc:

Ryan Albert, "Robinson, Jack", "Robinson, Jack", Bill Heidrich, Richard Mueller, 'Michael Jennings', Joel Mandelman, David Wright, Bill Cooper

Show Details

Dear Stephanie,

Attached are the 3 academic journal articles that should have been considered by EPA's Science Advisory Board when it was drafting its report on ballast water treatment and invasive species. I do not understand why this highly relevant material was seemingly withheld from the SAB by persons unknown. Two of these articles appeared in the Marine Pollution Bulletin in 2006 so the excuse that "they weren't available" to the SAB in 2010 does not hold. The third article was published in 2010 right around the time the SAB was meeting. Even if it appeared in the same journal a few weeks later that is no reason for this critical data to have been ignored by the SAB.

Ozone is a significant, highly effective technology - both scientifically and economically - for treating ballast water and killing all Aquatic Nuisance Species found in it. Moreover, ozone poses no threat that corrosion rates will increase thus endangering the vessel's hull. As the Wright article discusses, in detail, this technology was tested on a 125,000 dead weight ton oil tanker, the Prince William Sound. The two earlier articles discuss testing of a prototype system on another 125,000 DWT tanker, the Tonsina.

Ozone injection is one of the few ballast water treatment technologies that stands a reasonable possibility of meeting the Coast Guard's Phase II treatment requirement of finding no more than 1 microbe per 100 cubic meters of treated ballast water. At a minimum, it comes far closer to it than any other technology of which we are aware.

If the SAB has scientific questions that for which it needs additional data, please contact Dr. David Wright

at [\\_\\_\\_\\_\\_](#). You can contact Professor William Cooper

at

University of California-Irvine.

[wcooper@uci.edu](mailto:wcooper@uci.edu).

His e mail address is

I have separately sent to you a copy of the e mail I sent to Elsevier which is the publisher of the three articles. Based on my conversations with Michlele Ravey, in Elsevier's clearance office, there should be no difficulty in obtaining clearance. In any event, *the matter is already under review*. She may call and I gave her your phone number. Ms. Ravey can be reached at 215 239 3804 if you or the SAB have any further questions relating to the copyright issue.

Again, many thanks for your help.

Joel Mandelman

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Citations to the recommended articles:

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- 1. Jones, Adam C., Robert W. Gensemer, William A. Stubblefield, Eric van Genderen, Gail M. Dethloff, and William J. Cooper. 2006. Toxicity of Ozonated Seawater to Marine Organisms. *Environmental Toxicology and Chemistry* 25(10): 2683-2691.
- .
- 2. Perrins, Jake C., William J. Cooper, J. (Hans) van Leeuwen, Russell P. Herwig. 2006. Ozonation of seawater from different locations: Formation and decay of total residual oxidant- implications for ballast water treatment. *Marine Pollution Bulletin* 52(9):1023-1033.
- .
- 3. Perrins, Jake C., Jeffery R. Cordell, Nissa C. Ferm, Jaime L. Grocock, Russell P. Herwig. 2006. Mesocosm experiments for evaluating the biological efficacy of ozone treatment of marine ballast water. *Marine Pollution Bulletin* 52:1756-1767.
- .
- 4. Wright, David A., Robert W. Gensemer, Carys L. Mitchelmore, William A. Stubblefield, Eric van Genderen, Rodger Dawson, Celia E. Orano-Dawson, Jonathon S. Bearr, Richard A. Mueller, and William J. Cooper. 2010. Shipboard trials of an ozone-based ballast water treatment system. *Marine Pollution Bulletin* 60:1571-1583.