



- b. That eventually all mercury (elemental or compounds) converts to soluble or volatile methyl mercury which is highly toxic.
- c. That there is either no threshold of tolerance to methyl mercury or that it is "as low as a handful of parts per billion" for aquatic life and "may be harmful to man in the parts-per-billion range". The majority opinion of the Board appears to be substantially influenced by the assumption that there is no tolerance to methyl mercury.
- d. That mercury use in paints has only adverse possible health effects.

To the contrary, mercury in paints controls several species of molds and fungi to which many persons have allergic reactions. Until acceptable substitutes are found and adequately tested, it is entirely possible that the potentially harmful effects from the use of mercury in certain paints is offset by the benefit from the control of allergenic organisms.

The concept of benefit/risk is recognized in the majority opinion which exempts hospitals from the .5 ppb standard.

3. A zero standard required in certain effluents.

A unique situation obtains when the intake water for an industry or municipality is already at the established water quality standard for the receiving water. The mercury standard of the PCB does not give the water user the right to add .5 ppb.

In that case the effluent standard is zero. In the case of mercury, and perhaps many other constituents, the background level is to be subtracted from the listed effluent standard in determining the tolerable effluent level for the industry or municipality.

We know that the cost to remove pollutants rises curvilinearly. The last 10 percent may be as costly to remove as the first 90 percent; the last 1 percent as costly as the first 99 percent.

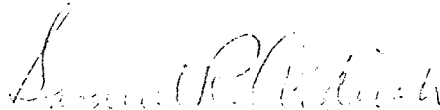
The Environmental Protection Agency requires the Board to consider economic reasonableness in setting standards.

In order for the Board to order a complete ban on any discharge to a stream or lake, I feel that the Board must have irrefutable evidence that: 1) there is no natural detoxification; and 2) the tolerance of the aquatic life and humans is at the level of the water quality standard.

The Act requires the Board to consider technical feasibility and economic reasonableness. Granted that mercury is an extremely hazardous element, I have reservations as to whether we follow the guidelines in the Act when we require an industry or municipality to do one of the following:

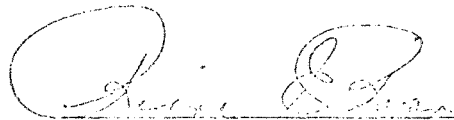
- 1) remove 100 percent of their contribution.
- 2) install a completely closed system with attendant waste disposal problems.
- or 3) close the factory.

Because of the considerations described here, I register misgivings about the proposal to force all users of mercury to meet the zero effluent standard where the extremely strict standard of .5 ppb is encountered in intake water. In the long run it seems to me that downstream dilution will somehow need to be considered so as to modify the zero effluent standard for existing industries.



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Samuel R. Aldrich  
Member, Illinois Pollution Control Board

I Regina E. Ryan, Clerk of the Illinois Pollution Control Board certify that Dr. Samuel R. Aldrich submitted the above opinion on 7 day of April, 1971.



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Regina E. Ryan  
Clerk, Illinois Pollution Control Board