

You and I know that drinking water standards and being poisonous are two different things. For many years when I lived in the West I drank water that would not qualify—all the time I drank it—by drinking water standards and I don't feel that I have been unduly poisoned. I feel that our choice of terms, our choice of words here, might best be looked at pretty carefully.

However, mere generalizations are not enough. I have another citation of a generalization from a very respected agency, from the publication "Soil Conservation." I am going to be praising the Soil Conservation Service in just a minute; but I would like to point out that in the January 1968 issue here is a quotation from page 143 of the magazine "Soil Conservation." It says:

"The pH of water"—it is talking about the saline content—"in streams which carry mine drainage is consistently below five and frequently three or lower."

Now, the Department of the Interior report, the massive compilation we have talked about, on page 24 says, on the other hand, that more than 50 percent of the streams had a pH of five or less, so in one case we are talking about apparently 100 percent of the streams, and in the other case, just more than 50 percent. In the one case we are saying pH worse than three and in the other case pH worse than five. There is a large difference here in the way we cite these figures.

That is what I am saying: mere generalizations are not enough. The quantity of acid load calculated for a stream, when based on inadequate sampling, is not only highly erroneous but causes us to adopt unwarranted and ineffectual means of remedying the problem.

Indiana University has recently prepared a report that will be given at a technical meeting here in a couple of weeks. This report points out that when you take mean daily flows of streams and calculate the acid load on the basis of a 24-hour mean daily flow, you have taken the sample at just one instance during that 24-hour period. It is very necessary that you take an instantaneous discharge measurement of the stream at the moment you take the sample to run the water quality analysis because that water quality analysis is valid only for the amount of water that is flowing in that stream at that moment, not during the whole day or sometimes during the mean month or even the mean yearly data if these are all the data we have available. I am not saying that we should not use these data, but we should know the restrictions or the tolerances within which these data are applied.

In any event, in our recent study in western Indiana, using the instantaneous discharges that we were able to measure with the Federal Water Pollution Control Administration people in the field at the time we took the samples, we have found that there would have been errors as great as 200 percent if we had taken the mean daily discharges. Here again is one of our sacred cows or one of our warnings on the type of data that we gather and the type of interpretation that we make from these data.

Continuing at the bottom of page 5 of my statement the woeful inadequacy of such data is amply documented in a second report that is being written right now by Mr. Corbett and myself concerning a research project that is an excellent example of voluntary cooperation of industry and several Federal and State agencies.