

April 4, 1960

Mr. H. S. Weiner

Mr. J. Burton

River Contaminants, and  
Your Memo of March 31st

cc: R. Seimoneit  
L. P. Scoville  
R. C. Sutter

CONFIDENTIAL

The complete story of our various effluents and our disposal history is pretty long and complicated, but I will give you a rough outline below as a starter. To get more accurate measurement and composition data on these, will require some time and engineering and lab work. Please keep me posted as to the amount of this which you may wish to do.

Until approximately 1956, we disposed of all our plant effluents into the Passaic River. Approximately 1956, the Passaic Valley Sewage Commission (PVSC) officially objected to our polluting the river, and we spent approximately \$15,000 for a sewer connection to the Newark city sewer. Since that time, we run some of our effluents to each of these outlets. The ruling on the Passaic River is that no materials should be put in it which are not as pure as the river itself. PVSC does the spot inspection approximately once a month. The New York Harbor Commission also was interested in keeping it free from strong acids as a safeguard to shipping. I believe the Coast Guard is the official inspecting agency on this. Approximately once a year we get a very fast check by them, looking for acids only. The Passaic River is seriously contaminated at present by other industries, particularly in regard to oil effluents. In the past year or two, PVSC has apparently been making more efforts to clear these up.

As I recollect, the official rules by the Sewer Department of Newark are that no material be put into the city sewer unless it is neutral and pretty free of chemicals. We checked our particular Lister Avenue branch before we connected to it, however, and found a variety of acids and chemicals which were actually being put in it. I believe this is fairly common throughout Newark, although I have had the feeling that we might



at some time have to separate out or neutralize our strong acids and perhaps the bulk of our phenolic materials. My impression is that the city sewer is a pretty good bet for getting rid of modest amounts of chlorophenols which otherwise would be serious contaminants in rivers, etc.

All of our unsold muriatic acid is dumped in the Passaic. The Sales-Production-Inventory schedule will show our current figures on this. In 1958 we dumped 2000 tons; in 1959 we dumped 4400 tons. Incidentally, this may seem like a large amount, but the flow in this river is very large and we get no apparent corrosion in our cooling water system even though our river water pump intakes are located between our points of dumping muriatic.

We produce approximately 2000 tons of 2,4-D per year with a yield slightly less than 60%. This means that we discard approximately the molecular weight equivalent of 400 tons of 2,4-D per year. I would guess that at least three quarters of this is in the form of 2,6-dichlorophenol, 2,4-dichlorophenol, and 2,4,6-trichlorophenol. Considering molecular weights, this would be approximately 110 tons of chlorophenols. I would guess we lose 50 tons of 2,4-D acid, 2,4-D sodium salt and 2,4-D esters. The pH and concentration of those different streams varies. If we were to undertake an effluent treatment system, we could concentrate most of the chlorophenol effluent to a relatively small volume.

We discard the acidic effluent from our chlorosulfonation operations to either the city sewer or the river. This effluent contains dilute sulfuric acid and/or dilute muriatic acid together with small quantities of sulfonyl chlorides, etc. I do not have even good guesses at hand on the quantities of this, but it is much smaller in acid content than the muriatic acid, and much smaller in organic content than the 2,4-D effluent.

The 2,4,5-T effluent is generally similar to 2,4-D, but is only approximately one quarter the amount. The effluent would consist of mostly trichlorophenols with some 2,4,5-T acid and 2,4,5-T esters.

The above represents the major contaminants, although at various times we have spills or special products which involve additional contamination problems. The "unimportant violations" are minor quantities of slightly dirty liquids which we sometimes get from washing down the floors near the river or the

river front. I call them "unimportant" because overzealous inspectors sometimes comment on slight signs of poor housekeeping at the river front even though it is pretty obvious spills from them would be cleaner than the often dirty-looking river itself.

My suggestion on handling the muriatic effluent is to try to get Sales to make commitments whereby we sell it all even at a lower price. If we have to improve our phenolic effluent handling, my suggestion would be to segregate and separately discard the concentrated phenolic effluent, and to blend, neutralize and discard to the city sewer the remainder of the phenolic effluent.

J. Burton

JB:jp