

St. Louis 66, Missouri

April 13, 1963

Vinyl Chloride Polymer;
Tenneco Chemical

H. F. Clark

J. A. Koppke/M. J. Luning
R. H. Kline/M. D. Volgers
W. B. Howard - Texas City
H. H. Roote - Texas City
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C. F. Fullerton - Texas City

(C-VCM)
xf-Tenneco

Shelby Gibbs (Tenneco Oil) corrected several slight
mistaken provisions for us last week. Tenneco Chemical
have shipped several million pounds of VCM from their
Houston operations. From other sources we do know that
they have been forced to supplement this with purchased
material to meet their commitments to Cary Chemicals.

However, they are still having plenty of trouble with
their acetylene burners. Joe King's greeting to Shelby
when he visited the ship channel plant about ten days
ago was: "Welcome to the coal factory." They had
trouble to run half of the burners while cleaning the
balance in order to keep some on stream at all times--
in this they have been unsuccessful. Present operation
is to run the whole plant for "five to six days," then
shut down and clean out the asset.

Robert J. Lewis

HFL/vc

CBY 1023692

RSV0031848

Texas City, Texas

April 19, 1963

W. E. Alexander
W. J. Burkett
L. B. Bullock
L. A. Schroeder - Spfld.
Eng. Central Files

C. L. Knowles, Jr.
St. Louis

Chet,

I am not a VCM expert, and in the time you have allotted for your answers I will not be able to become one. Adding to my problem, Burnie Bullock, who is an expert, is off on a Japan tour. However, before he went I did check the following answers to your questions of April 15 and believe I have correctly understood Bernie.

You ask how much new capital was needed to expand VCM production to 170 M lbs/yr. No new manufacturing capital is needed - that is the plant as it stands, assuming adequate acetylene, can make approximately 175 M pounds in our estimate. You recognize that proportionately more utilities are consumed, and whether these require new capital or not depends upon the timing and operating rates in other parts of the plant. I do not have firm estimates of manufacturing costs of the expanded rate. However, the drop in cost should be about 2/10 cents/lb of VCM.

You asked about the relative merits of expanding via ethylene versus acetylene. Many studies have been made on this subject in the past and undoubtedly more will be needed throughout the future years. Generally these studies have inclined toward usage of acetylene as being more economical for us. You recognize that the attractiveness of incremental acetylene versus incremental ethylene has influenced the studies in this fashion in the past. My own estimate is that ethylene-based VCM will tend to prove more attractive in the future than it has in past studies, as improved oxidative performance, (which I anticipate) is realized, and as better estimates of costs of ethylene at Chocolate Bayou become available. I regret not being able to state a position any firmer than this. The newest plants (Tenneco and Monochem) are both on acetylene, you will note. I doubt they are finding acetylene as cheap as anticipated when they made their choice.

You asked for our judgment on how Monsanto's VCM process compared with Dow or Ethyl. As you perhaps remember, we sold Ethyl the process they practice, an ethylene-chlorine route with by-product HCl utilized in tetraethyl lead operations. Accordingly, Ethyl's process is identical with our's, and any

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differences in economics would depend on ethylene and HCl values. I doubt that Ethyl can buy ethylene as cheaply as we know we will have it. They do probably value HCl higher than we, as it permitted them to shut down some expensive HCl-generating furnaces. We made a study on Monsanto versus Ethyl in 1960, which I have not had time to update. Broadly it appeared that, if Ethyl could value HCl at chlorine value, we must value acetylene at 6 ¢/lb to realize an equal return. Dow's technology also should be quite similar to ours. We strongly suspect they practice oxidative chlorination in Louisiana. They probably do not practice it in Texas, as they merchant the HCl to Tenneco for their Houston vinyl chloride operation. Of course, Dow is basic in chlorine.

I learned that Shawinigan Chemicals will be phased out of the vinyl acetate supply to Shawinigan Resins over the next two years. It was correct that our appropriation request on vinyl acetate predicted a sellout by 1965 when supplying only half of Shawinigan Resins' business. Accordingly, the vinyl chloride impact on vinyl acetate should be negligible. As you know, part of the capital you received on vinyl acetate is for ethylene used to supply the acetic. This too is forecasted to be consumed by 1965. Accordingly, I suggest we drop vinyl acetate from this study to simplify an already complex picture.

I questioned Lou Schroeder on your approach into the plasticizer operations. As no buying was involved, his inclination was to omit consideration of this end. If Plastics stop consuming the plasticizers, it seems reasonable to believe that Organics Division will be quite affected. Feedstocks to plasticizers include naphthalene and xylene from Chocolate Bayou, another segment of capital we had not discussed. Chet, I am not trying to make the problem more complicated than it is - I just think it is more complicated than can be properly answered by April 23.

We will be back in business on April 23 should you have more questions. Note your carbones were not covered.

R. W. Kienker

/mj

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