PLAINTIFF'S EXHIBIT

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ENVIRONMENTAL HEALTH GUIDE

ROLE OF HEALTH AND ENVIRONMENTAL RESEARCH (H&ER)

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The role of the Health and Environmental Research (H&ER) in Dow's Environmental Health Program is to provide the knowledge necessary to help prevent Dow employees, Dow customers, and the public from excessive exposure to chemicals or sources of harmful energy. To phrase this another way, our role is to develop information about the chemical and physical stresses that may result from the manufacture, sale, and use of Dow products; to assess the significance of these stresses as they may affect our lives; and to describe how they can be maintained at acceptable levels.

Broadly speaking, H&ER is the focal point in the corporation for expertise in the fields of Industrial Toxicology, Industrial Hygiene, and Environmental Impact. It is the place where persons anywhere in Dow can come and get up-to-date information and expert counsel about problems in these fields. It is the responsibility of H&ER to develop facilities and people capable of meeting these challenges.

The mission of H&ER may be outlined as follows:

1) To give guidance to all levels of Company management so as to permit judgments that will maximize the probability that our products will be profitably manufactured, transported and used with the highest degree of safety reasonably possible. This includes safety to Dow employees, Dow neighbors, Dow customers, Common Carriers, the general public and the environment. In other words, to enhance the Dow concept of "Product Stewardship".

2) To develop , or encourage the development of, an appropriate data base needed in order to achieve "Product Stewardship". This may include data such as:
   - chemical and physical properties
   - toxicity to animals
   - metabolism and pharmacokinetics
   - toxicity to environmental systems
   - exposure intensity data from workmen, users and the public (Industrial Hygiene)
   - medical surveillance of people exposed to the material.
   - epidemiologic data wherever possible.
   - bioaccumulation, persistence and movement of chemicals.

ST0820657

- analytical methods.
- information from the literature or private communication.

There are three sections in H&ER that are primarily involved in Dow's Environmental Health Program: the Toxicology Research Laboratory under the direction of Perry Gehring, the Industrial Hygiene Laboratory under the direction of Harold Hoyle and the Environmental Science Laboratory under the direction of Robert Moolenaar.

ST0820658

The role of the Toxicology Research Laboratory is:

1) to develop basic toxicological information on every chemical or chemical composition of significant interest to Dow. The extent to which these properties are determined will be predicated upon the importance of the material and upon the probability and degree of exposure likely to be encountered either by workmen, by customers, or by the public. In any case, the first consideration is the acquisition of sufficient toxicological data to permit a reasonable assessment of handling hazards. In this day and age, problems of carcinogenicity, mutagenicity, and teratogenicity must be dealt with.

2) to keep up with current developments in the field through the literature and through contacts with other professionals. This will include evaluation of new information, new techniques, and new methodologies.

3) to develop new techniques and methods;

4) to maintain close liaison with Dow Medical and Safety departments so as to properly serve their needs for toxicological information;

5) to disseminate to Dow people with a need to know pertinent information, conclusions, and recommendations having a bearing on Dow operations or interests;

6) to publish the results of credible toxicological research when appropriate;

7) to provide expert consultation to customers when appropriate;

8) and last but not least, to select and train qualified young professional persons to be knowledgeable toxicologists.

The Role of the Industrial Hygiene Laboratory is:

1) to maintain a staff of highly qualified professional people with expertise in the various fields of Industrial Hygiene (dealing with exposure to chemicals, radiation, noise, heat, and light);

2) to keep up with current developments in the field through the literature and through contacts with other professionals outside Dow. This will include evaluation of the results of others.

ST0820659

3) to develop techniques appropriate for the sampling, analysis, and control of environmental contamination. This will include the evaluation and adaptation of commercially available equipment to Dow needs.

4) to develop data that describe the environmental conditions in any plant when such information is requested.

5) to maintain close liaison with Dow Medical, Dow Safety, and Dow Environmental groups so as to properly serve their needs for data describing environmental conditions;

6) to provide expert consultation to customers--even to the extent of doing studies in their plants;

7) to assist in the training of safety engineers to help them recognize hazardous or potentially hazardous conditions, and to conduct such tests of the environment as are appropriate.

8) and again, last but not least, to select and train qualified young professional persons to be professional Industrial Hygienists.

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The role of the Environmental Research Laboratory is:

1) to study the fate of chemicals we make, sell, and dispose of in the total ecological system. I am not going into this subject further because I want you to hear it directly from Dr. Moolenaar who I am sure will be able to do a far better job than I in telling you what his laboratory missions are.

I suspect that many of you who have known me for quite a few years are wondering what I am supposed to be doing these days. In answer, I am not always sure but believe me--there hasn't been a dull moment. To be more helpful I will try to outline some of my obligations as Director of Toxicological Affairs. First, how could anyone be so fortunate as to be associated with a boss like Etcyl Blair who gives you all the freedom to make decision one could ask for. And to be associated with such professionals as Gehring in Toxicology, Hoyle in Industrial Hygiene, and Moolenaar in Environmental Sciences. I think any of you who have had the privilege of knowing these men can appreciate my enthusiasm. My job has been a dream and it is really fun to see the programs develop under the fine leadership of these men.

ST0820661

During the last few years, a large part of my time has been devoted to what can best be called consultation in all areas of the company. Product Stewardship, ETAB, Industrial Health Board and the Toxicology Center have taken a fair

amount of time. Naturally much effort has been devoted to giving advice to production departments and product departments as to the suitability and safety of processing procedures and products for sale. Many questions arise about the toxicology of various materials, what hazards do they present, what do we need to plan for in terms of the future; these are questions that reoccur everyday.

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Aside from these internal activities, serving on the OSHA Advisory Committee on Carcinogens was one of my recent experiences. It was the most time consuming, frustrating and, I felt, one of the least productive efforts I have ever been engaged in. On the positive side, I feel that that experience gave me a clear and concise concept of the ultimate purpose of some of our adversaries.

Now as to the future I expect to continue doing much of the same as I have. I am spending more time studying the future needs of the corporation including the development of priorities to justify appropriate programs. As many of you know, at present we are engaged in a crash program to build a new toxicology laboratory which will house the most modern facilities for inhalation toxicity in existence. It will also have additional facilities for metabolism and pharmacokinetic work, better facilities for handling animals and also it will house the entire Industrial Hygiene group.

One of my greatest concerns is the fact that the credibility of industrial labs is under vigorous attack by the Epstein's and the Nader's and we may see the attack broadened to include others as they climb aboard the bandwagon driven by the environmentalists.

Consequently, I hope I can develop closer relations with these people, and particularly, government and university people to show them that Dow is responsible not irresponsible. I have little hope for the Nader and Epstein groups, but I do not want to abandon hope for some useful contacts even there.

How to accomplish this is still something of a mystery to me. Cooperation in projects, perhaps helping worthy research programs with funds and having a seat at the table will crack some ice, particularly at the universities. I also feel that we have to get better acquainted and keep in close contact with various government agencies, consult with the decision makers, offer help where it counts and even take them into selected confidences.

We need to be ever diligent in developing our Dow programs and in seeing that they are of such a high professional caliber that they will continue to be the envy of our competitors and will command the respect of government, universities, and all other competent scientists. To do so

ST0820663

we need to be on the frontier of science, publish quality papers and participate in scientific meetings of all sorts. I want to encourage each of you to seriously consider this. Publication of data is and will be, one of the most valuable assets we have with which to fight our adversaries.

I hope in the few years I have left I can be a part of bringing about such progress, progress that will make health and environmental research and the Dow Chemical Company an example of industrial competence and good citzenship.

I am sure that Dr. Blair shares with me the hope that as a result of this workshop you will have gained a better understanding of the hazards to health associated with the toxicological and physical stresses encountered in the workplace as well as in the public environment. If you do, we are sure you will be better able to recognize by sight, circumstance, or measurement, environmental hazards that might otherwise go undetected. The early detection and elimination of environmental hazards are equally as important to the over-all Safety and Loss Prevention Program as the detection and elimination of the unguarded chain drive, the ladder with the broken rung, the nonfunctional eyewash fountain, or the lack of proper personal protection.

Power to you and thanks for the privilege of talking with you. If I can ever be of help, please don't hesitate to call on me.

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