South Miami Hospital
An Affiliate of Baptist Health System of South Florida

I.A. FEINGOLD, MD, FRCP(C), FCCP
CHIEF, DIVISION OF PULMONARY MEDICINE
SOUTH MIAMI HOSPITAL

6200 Southwest 73rd Street
Miami, Florida 33143
Tel: (305) 661-4611 ext 5229
Facsimile: (305) 662-5314
E-mail: AllanF@bhssf.org
24 hr emergency: (305) 661-4611

PLAINTIFF'S EXHIBIT
USX-1063

Mr. Rick Taylor,
U.S. Steel,
600 Grant Street,
USX Tower, Suite 1500,
Pittsburgh, PA 15219

May 23, 2001

Re: All Allegheny County, Pennsylvania USX Remnant Cases
Evolution of medical knowledge ("State of the Art")
in
Asbestos related diseases

Dear Mr. Taylor,

As a further supplement to my two earlier Expert Reports dated May 11, 2001 and May 14, 2001, relating to the above-referenced group of cases, I am providing this additional supplemental report.

In medicine, a causal relationship between an agent such as asbestos dust and a disease such as lung cancer (i.e. a cause and effect relationship) cannot be determined to exist merely upon the report of individual case studies. For example a report that lung cancer has occurred in an asbestos worker does not prove that asbestos causes lung cancer, if only because lung cancer is known to be caused by cigarette smoking and many asbestos workers smoke. Scientists and physicians normally determine that a cause and effect relationship exists either by direct laboratory experimentation or by analysis of epidemiological investigations. Direct experimentation on human beings with substances that may be harmful is generally unethical and cannot be performed; therefore, epidemiological analysis of populations who have been exposed to certain substances is normally relied upon to establish the existence of cause and effect relationships.

Green, Freedman and Gordis,[1] writing in the chapter on epidemiology of the Reference Manual on Scientific Evidence, (Second Edition), published by the Federal Judicial Center, explain the nature of epidemiology and how it is used to establish causal relationships:

> "Epidemiology is the field of public health and medicine that studies the incidence, distribution, and etiology of disease in human populations. The purpose of epidemiology is to better understand disease causation and to prevent disease in groups of individuals. Epidemiology assumes that disease is not distributed randomly in a group of individuals and that identifiable subgroups, including those exposed to certain agents, are at increased risk of contracting particular diseases.... Epidemiologic evidence identifies agents that are associated with an increased risk of disease in groups of individuals, quantifies the amount of excess disease that is associated with an agent, and provides a profile of the type of individual who is likely to contract a disease after being exposed to an agent. Epidemiology focuses on the question of general causation (i.e.,is the agent capable of causing disease?) rather than that of specific causation (i.e.,did it cause disease in a particular individual?). For example, in the 1950s Doll and Hill and others published articles about the increased risk of lung cancer in cigarette smokers. Doll and Hill's studies showed that smokers who smoked ten to twenty cigarettes a day had a lung cancer mortality rate that was about ten times higher than that for nonsmokers. These studies identified an association between smoking cigarettes and death from lung cancer, which contributed to the determination that smoking causes lung cancer. However, it should be emphasized that an association is not equivalent to causation. An association identified in an epidemiologic study may or may not be causal.

Once a statistical association between a substance and a disease has been reliably established, scientists and physicians apply certain criteria to determine whether or not the observed association is causal. The most commonly set of criteria used in this endeavor was described by Bradford Hill, a contemporary and colleague of Sir Richard Doll who was among the first, in England, to establish the causal relationship between cigarette smoking and lung cancer and between asbestosis and an increased risk of lung cancer. In 1964 the first United States Surgeon General Report on Smoking and Health quoted the Bradford Hill criteria as follows:

> "As already stated, statistical methods cannot establish proof of a causal relationship in an association. The causal significance of an association is a matter of judgment which goes beyond any statement of statistical probability. To judge or evaluate the causal significance of the association between cigarette smoking and lung cancer a number of criteria must be utilized, no one of which by itself is pathognomonic or a sine qua non for judgment. These criteria include:

(a) The consistency of the association
(b) The strength of the association
(c) The specificity of the association
(d) The temporal relationship of the association
(e) The coherence of the association.

In the preparation of my May 11, 2001 report I considered epidemiological reports in the selection of the dates I set forth on pages 2-4 and it is my opinion, to a reasonable degree of medical certainty, that the dates I listed represent the first time each of those accompanying principles were knowable by any entity, including U.S. Steel. Conversely, U.S. Steel could not have known any of those principles prior to the dates I have set forth.

Furthermore, inasmuch as the 1991 Kronenberg et al[2] report was the first of its kind to even examine whether the incidence of asbestos-related disease was increased in steel mills, (the Kronenberg report was preliminary and ultimately failed to demonstrate an increased incidence of asbestos-related diseases in a steel mill), I believe that 1991 is the earliest date that U.S. Steel even arguably could have been placed on notice that steelworkers could be at risk for contracting asbestos-related disease. The dates at which U.S. Steel could have known about the risks to workers other than steelworkers working in a steel mill, for example the risks to asbestos insulators brought in for contract work in a steel mill, would have been established by articles published in the medical literature about those trades. I provided those dates in my May 11, 2001 report.

I look forward to answering any additional questions Plaintiffs' counsel may have about my Reports during my deposition on Thursday, May 24, 2001, beginning at 1:00 P.M.

Allan Feingold, M.D.

I. A. Feingold, M.D., F.R.C.P.(C), FCCP

1. Green MD, Freedman DM, Gordis L: Reference Guide on Epidemiology in Reference Manual on Scientific Evidence, Second Edition, Federal Judicial Center, 2000. http://air.f jc.gov/public/f jcweb.nsf/pages/16

2. Kronenberg RS, Levin JL, Dodson RF, Garcia JGN, Griffith DE: Asbestos-related disease in employees of a steel mill and a glass bottle-manufacturing plant. Ann NY Acad Sci 1991; 643-403.