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SUPERIOR COURT OF CALIFORNIA
IN AND FOR THE COUNTY OF SAN FRANCISCO
(UNLIMITED JURISDICTION)

JOSEPH G. VELIKANEEYE and
DOROTHY VELIKANEEYE,

Plaintiffs,

vs.

AC and S, INC., et al,
Defendants

) Case No.: CGC 09 - 275291

) **DECLARATION OF BARRY**
) **CASTLEMAN IN SUPPORT OF**
) **PLAINTIFF'S OPPOSITION TO UNION**
) **CARBIDE CORPORATION AND**
) **MONTELLO, INC.'S MOTION FOR**
) **SUMMARY ADJUDICATION**

I, BARRY CASTLEMAN, declare and state as follows:

BACKGROUND

1. My name is Barry I. Castleman. I received a Bachelor's Degree in Chemical Engineering from Johns Hopkins University 1968. I have a Master's Degree in Environmental Engineering, which was mainly in areas related to air pollution control from Johns Hopkins University, 1972. I have a Doctor of Science Degree in Health Policy from Johns Hopkins School of Hygiene and Public Health, 1985.

2. My professional experience goes back over 30 years in the area of asbestos and other occupational and environmental health problems. My field is occupational and environmental health policy, which is a branch of Public Health, mainly

1 oriented towards the recognition of risk factors and the prevention of disease from
2 industrial activities.

3 3. My Doctoral degree was awarded for two years of course work, various
4 examinations, and the writing of a doctoral dissertation. The course work was mainly in
5 the areas of toxicology, epidemiology, biostatistics, physiology, and public health policy.
6 These are the tools that are used to understand how the body works and can be damaged
7 by toxic substances, how these effects can be identified by means of various studies of
8 people, studies of animals experimentally exposed, etc.

9 4. My Doctoral thesis was, Asbestos: A Historical Case Study of Corporate
10 Response to an Industrial Health Hazard, and is largely identical to a book published in
11 1984 by Prentice Hall Law and Business called Asbestos: Medical and Legal Aspects
12 (now in its 5th Edition, 2004). My doctoral thesis is an historical review of the asbestos
13 problem as a public health problem in society worldwide, but mainly in the United States.
14 It encompasses a comprehensive review of medical literature of all kinds, as well as other
15 literature available in libraries and published sources such as government publications,
16 safety magazines, engineering journals, trade magazines, insurance publications,
17 encyclopedias, popular magazines, and newspapers. The doctoral thesis also involved
18 research based on unpublished government records. The government records included
19 workers' compensation claims files where claims had been made by individuals alleging
20 that they had asbestos-related diseases of the lungs, claims against various companies that
21 were their employers, some of which companies were also manufacturers of asbestos
22 insulation products these individuals has used in the course of their work.

23 5. In addition to published information of all kinds, I examined files,
24 unpublished information available from the U.S. government archives, the archives of
25 scientists and the archives of institutions that had worked for and with asbestos
26 companies.
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1 6. I have also looked at unpublished information which was obtained in
2 legal discovery. This included trade association minutes, corporate documents, and
3 testimony of corporate officials who were associated with asbestos hazards over the
4 years- doctors, plant managers, executives, and other people who were aware of events
5 that transpired.

6 7. In addition to published information and corporate knowledge that came
7 primarily out of legal discovery, I have also interviewed numerous current and former
8 leading officials in the field of industrial medicine and hygiene. They included physicians
9 who were active in the field of occupational medicine, such as Harold Stewart, M.D.,
10 who first published on asbestosis in 1931, and Alfred Angrist, M.D., who first published
11 on asbestos and lung cancer in 1942. Another, Dr. Wilhelm Hueper, was a leading United
12 States authority in the field of occupational cancer and first director of the environmental
13 cancer section of the National Cancer Institute. Dr. Harriet Hardy, Dr. Thomas Mancuso,
14 Dr. Gerrit Schepers, and others I interviewed were involved in the area of asbestos and
15 health over the past decades.

16 8. I have provided testimony to United States congressional committees
17 concerning the hazards of asbestos and other toxic substances. I have also testified before
18 United States congressional committees regarding the development of asbestos
19 knowledge. I have been a paid consultant to the Office of Toxic Substances of the United
20 States Environmental Protection Agency and have performed research on environmental
21 asbestos hazards. I have performed consulting work for the United States Occupational
22 Safety and Health Administration. In my research, I have reviewed thousands of
23 publications and documents pertaining to asbestos-related disease and have interpreted
24 and related the contents of the same. I have acted as consultant for The National Science
25 Foundation and the European Commission. I have been a consultant to the World Bank
26 on asbestos.
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1 9. I have testified as an expert witness in over three hundred (300) cases
2 throughout the nation on issues related to asbestos state-of-the-art and historical
3 development of asbestos knowledge.

4 **THE BODY OF KNOWLEDGE ABOUT ASBESTOS**

5 10. The originally published reports in the era of the modern asbestos industry
6 came at just before the turn of the last century, and the first reports in the English
7 language were included in the annual reports of the chief inspector of factories and
8 workshops in Great Britain. The report published in 1899, the report for the year 1898,
9 talked about the observation of lung disease in individuals who had worked in asbestos
10 manufacturing plants and about the "evil effects of asbestos dust."

11 11. The medical literature of asbestos disease mainly developed after the
12 publication of a case report in the British Medical Journal by Dr. Cooke, a pathologist in
13 Britain in 1924. This was called, "Fibrosis of the Lungs Due to the Inhalation of Asbestos
14 Dust." Dr. Cooke reported on the death of a 33-year-old woman who had worked off and
15 on in asbestos plants from the age of 13. According to Cooke, the scarring of her lung
16 tissues was largely attributable to the inhalation of asbestos in the course of her work.
17 There followed a number of other reports in British sources, and this is reflected as well
18 in the United States in editorials of the Journal of the American Medical Association. In
19 one on January 14, 1928, called "Pulmonary Asbestosis," reference is made to Cooke's
20 case and other reports on the disease now called asbestosis. The Journal of the American
21 Medical Association recommended that further attention be paid to this disease, as it may
22 well be occurring in the United States. The Journal of the American Medical Association
23 issued another editorial in 1930 about asbestosis, this time noting the asbestosis had
24 become a compensable occupational disease in Great Britain under the workers'
25 compensation law. The Journal of the American Medical Association was believed to
26 have been read by 80 percent of American physicians in those years, medical historians
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1 have written. Additionally, there were additional reports of asbestosis published in the
2 British Medical Journal, which is in every medical library I have ever walked into. The
3 reports mainly involved deaths of individuals who were verified as having asbestosis by
4 autopsy.

5 12. In 1930, a report was published by a physician, Dr. E.R.A. Merewether,
6 and an engineer named C. W. Price. Merewether and Price reported a survey that had
7 been conducted by the Factory Inspectorate in England, including 363 asbestos workers
8 who were actively employed. Of these individuals, 26 percent were found to have
9 asbestosis. Merewether and Price reported that the people longest exposed had the
10 highest prevalence of the disease. 80 percent in workers with 20 years or more in the
11 industry. There were no cases of asbestosis in individuals with less than five years, and
12 Merewether referred to that phenomenon that the disease was delayed in appearance and
13 developed gradually over a period of years. It could in seven years be substantially
14 developed in the most severe cases, but more often 11 years or more would elapse before
15 the disease had become largely developed in exposed individuals. This is the time from
16 the onset of exposure. Merewether urged that workers be "educated to a sane appreciation
17 of the risk" to health posed by asbestos dust. Merewether's 1930 writings on asbestosis
18 are among those most often cited in the literature on asbestosis.

19 13. By 1932 there were 60 or more publications in print on asbestosis. These
20 were noted by way of reference in a bibliography published by the International Labor
21 Organization in 1932. These publications continued to emerge from many countries. The
22 first cases of asbestosis in the United States were reported in 1930. Asbestosis was also
23 described in an article in the trade magazine Asbestos in the United States in the March
24 1930 issue, amid numerous advertisements from asbestos mining and manufacturing
25 companies.
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1 14. In 1932, the first case of asbestosis in an asbestos product user was
2 reported at a conference held by the Industrial Commission of Wisconsin, which
3 published their proceedings. Here, Dr. Albert Russell of the United States Bureau of
4 Mines described an individual who had worked maintaining the insulations on pipes in a
5 government hospital and had been diagnosed as having asbestosis and had been
6 compensated by the government for disability sustained from this asbestos condition.
7 This is the first published product user case. There were other cases reported in the
8 United States in 1933 by Philip Ellman and also reported by Ellman in 1934 in The
9 British Journal of Radiology. Wood and Gloyne reported in 1934 reported on cases of
10 asbestosis including a boiler riveter who would have been exposed to asbestos because it
11 was used as an insulation material on boilers. Wood & Gloyne's report was called
12 "Pulmonary Asbestosis: A Review of 100 Cases." That was published in The Lancet, the
13 world's oldest medical journal, in 1934. The Lancet is, like the British Medical Journal, a
14 general medical journal published in England and available very widely in medical
15 libraries in the English-speaking world. This article was widely cited in subsequent
16 literature.
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18 Of the hundred cases of asbestosis they reported on, the shortest duration of exposure in
19 any case was six months, in the case of two women who had worked in an asbestos plant.

20 15. Literature on asbestosis was substantially developed by 1935. The disease
21 was shown to have a distinctive pathological appearance with asbestos bodies, types of
22 scarring that would form around the asbestos fibers trapped in the lung tissues. This was
23 commented upon a great deal by pathologists in the 1920s. The disease was shown to
24 have an identifiable radiological appearance on chest X-ray distinctly different from such
25 diseases as TB and silicosis. The disease was also characterized by shortness of breath,
26 which would become more pronounced as the individual became more seriously affected
27 by the disease.
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1 **THE PENNSYLVANIA AND PUBLIC HEALTH SERVICE STUDIES**

2 16. In 1934 and 1935, the Industrial Hygiene Section of the Pennsylvania
3 Department of Labor and Industry published a report on asbestosis in the asbestos
4 fabricating industry in the state. This article was called Asbestosis, published by William
5 B. Fulton and three of his coworkers at the Pennsylvania Department of Labor and
6 Industry.

7 17. One-fourth of the workers examined had asbestosis. Their article included
8 an impressive bibliography of 125 references to asbestos-related disease previously
9 published in journals in the United States, England, France, Italy, Germany and other
10 countries. Among the references cited by Fulton, Dooley et al., were the historic 1930
11 report by Merewether and Price for the British government and the version published
12 later that year in the US in the Journal of Industrial Hygiene. The Merewether reports
13 made recommendations for the control of asbestos dust in asbestos plants, recommended
14 periodic medical examinations of workers exposed to this dust and dust suppression
15 measures in processes involving the use of asbestos, and noted the hazards of asbestos
16 insulation work in shipyards. The Pennsylvania study was one of the first surveys of this
17 kind in the United States similar to that which had been done by Merewether and Price
18 and published in Great Britain and the United States separately in 1930.

19 18. The Pennsylvania study also included an effort to relate dose and
20 response. The authors had sampled the exposure of the workers to dust in four asbestos
21 plants, including one that produced asbestos containing insulation known as 85 percent
22 magnesia, and found that, overall, average concentrations of dust could be broken down
23 into three groups that varied from 4.64 million particles per cubic foot up to 44 million.
24 Asbestosis was reported in all three groups, with the prevalence and severity of disease
25 greater in the more heavily exposed groups. But no level of exposure was found to be
26 free of the disease, including levels below 5 million particles per cubic foot.
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1 In summary, in the Pennsylvania study at least 25 percent of the workers were diagnosed
2 as having asbestosis and levels of exposure even below 5 million particles per cubic foot
3 were found to cause asbestosis.

4 19. In 1938, a study similar to the Pennsylvania study was done by the Public
5 Health Service, including an effort to account for workers who had been discharged
6 before the Public Health Service was admitted to the North Carolina asbestos textile
7 plants to do the study. An estimated asbestosis rate in the workplace was given as 27.5
8 percent. The report recommended that dust exposure in asbestos plants be limited to 5
9 million particles per cubic foot. This guideline was recommended as a tentative
10 occupational exposure limit, though it was noted that the Pennsylvania study had found
11 cases of asbestosis at that level of exposure.

12 20. By the mid 1930s, cases of asbestosis were found not only among workers
13 in asbestos fabricating plants, but also among users of some asbestos products, mainly
14 insulation products such as these used by insulation workers.

15 **ASBESTOS AND LUNG CANCER**

16 21. In 1935, another aspect of the hazards of asbestos was identified with the
17 publication of medical case reports of asbestosis in combination with lung cancer. The
18 first such reports were published by Lynch and Smith in the United States in 1935 in the
19 American Journal of Cancer and by Dr. Gloyne in Great Britain in Tubercle in two
20 separate reports in 1935 and 1936. In these reports, the question was raised that chronic
21 irritation of the lung tissues from asbestos might be producing cancer as well as lung
22 scarring already well identified as an asbestos-related phenomenon.

23 22. There were additional reports of lung cancer in combination with
24 asbestosis reported by Egbert and Geiger at Yale in 1936, and Nordmann in 1938. An
25 abstract of this last publication appeared in the United States in the Journal of Industrial
26 Hygiene & Toxicology, also in 1938. The article was entitled "The Occupational Cancer
27 of Asbestos Workers." The German author, Nordmann concluded that asbestosis was
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1 definitely related to lung cancer, that lung cancer was in fact an occupational disease of
2 asbestos workers. Various features of the six cases Nordmann knew of were tabulated to
3 justify that. Nordmann noted, among other things, that the prevalence of lung cancer
4 among autopsied victims of asbestosis was one in six both in Germany and Great Britain.
5 This was very much higher than the prevalence of lung cancer in the general population,
6 which tended to be more like 1 percent or several percent at most. The high rate of lung
7 cancer among people dying with asbestosis would be a most consistent finding around
8 the world.

9 23. There were additional publications of cases of lung cancer and asbestosis
10 in 1939 in the United States and in 1941 and 1942 in Germany. Holleb and Angrist
11 reported in the American Journal of Pathology on two individuals who had been pipe
12 coverers (users of asbestos products) diagnosed at autopsy as having both asbestosis and
13 lung cancer. These were the first cases of cancer and asbestosis in users of asbestos
14 products published in the medical literature. Holleb and Angrist tabulated a total of 10
15 cases of lung cancer in combination with asbestosis that had been published in the United
16 States, Britain, and Germany.

17 24. Articles linking asbestos and cancer appeared in the *Archives of Industrial*
18 *Hygiene and Occupational Medicine* in the early 1950s. The March, 1952 edition of this
19 journal contains an article by Dr. Wilhelm Hueper entitled "Occupational Cancer
20 Hazards in American Industries." In the article, Dr. Hueper discusses the excessive
21 incidence of lung cancer associated with asbestosis in a series of 235 documented cases
22 of asbestosis.

23 25. Dr. Wilhelm Hueper is an important figure in the history of the knowledge
24 of occupational cancer and in the development of the knowledge of asbestos hazards. In
25 1942, Dr. Hueper published a book on occupational cancer called Occupational Tumors
26 and Allied Diseases, nearly 900 pages long. It included a lengthy section on asbestosis
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1 and cancer from asbestos, in which a large number of references from the United States,
2 Great Britain and Germany were cited in support of the view that asbestos most likely did
3 cause occupational cancer. Dr. Hueper made unequivocal statements the next year in the
4 article called: "Cancer in its Relation to Occupational and Environment" published in the
5 Bulletin of the American Society for the Control of Cancer. There, Hueper said that
6 "asbestosis cancer of the lung" as he called it then, was the newest proved
7 occupational cancer of the lung, to be listed with the ones that were already known at that
8 time. In the Journal of the American Medical Association (JAMA), there appeared an
9 editorial called "Environmental Cancer" in 1944, in which asbestos was listed among
10 agents known and suspected of causing occupational cancer,

11 26. In 1946, Dr. Hueper also published an article in the Journal of the
12 American Medical Association (JAMA) discussing asbestos and other cancer causing
13 substances that were used in industry. In 1944 and 1949, at the invitation of the editors
14 of JAMA, Dr. Hueper wrote editorials for JAMA that discussed asbestos as a cause of
15 lung cancer. Beginning in 1948, Dr. Hueper became Chief of the Environmental Cancer
16 Section of the National Cancer Institute ("NCI").

17 27. Dr. Hueper's writings were widely known, For example, in an interview
18 with Newsweek Magazine in 1950, Dr. Hueper stated that the rising rates of lung cancer
19 in urban dwellers in this country could be attributable to the air pollution of industrial
20 carcinogens such as asbestos, Dr. Hueper retired in 1964, In my opinion, during his
21 tenure at the NCI, Dr. Hueper was the federal government's leading official concerned
22 with environmental cancer, Indeed, it is my opinion that he was considered by many to be
23 the world's foremost authority on environmental cancer in the 1940s, 50s, and 60s.

24 ASBESTOS AND MESOTHELIOMA

25 28. The disease mesothelioma of the pleura was attributed to exposure to
26 asbestos or asbestosis starting in 1943 with the report of Dr. H.W. Wedler in Heidelberg,
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1 Between 1943 and 1960, there were additional reports in the German literature as well as
2 British literature. The case reports that appeared prior to 1960 are annotated and cited by
3 way of reference in Chapter 2, table 5 of my book. Dr. Wedler was the first to state that
4 he believed the pleural cancers were occupational cancers, and his work was prominently
5 cited in the United States in the 1940s. Other German pathologists starting with Leicher
6 in 1954 would identify peritoneal mesothelioma as an asbestos disease.

7 29. Of special note is the study by Dr. HB. Eisenstadt and Dr. F.W. Wilson in
8 the *Journal-Lancet* in 1960. Dr. Wilson was a medical doctor employed by Texaco at
9 their Port Arthur facility. The study reported on two mesothelioma cases among Port
10 Arthur refinery workers, one of whom had asbestosis. One of the workers was a Texaco
11 refinery worker. The report noted that, "the etiologic association of asbestos and
12 mesothelioma has been repeatedly discussed in the literature", citing references from the
13 US, the Netherlands, Germany, and Italy. It did note that not all investigators agreed that
14 asbestos predisposed to the very uncommon malignancy of the pleura, but that the
15 patient's history of asbestos exposure "alerted the suspicion of the authors in the second
16 case."
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18 30. A major report of pleural mesothelioma came from South Africa by
19 Wagner and his coworkers, published in the *British Journal of Industrial Medicine* in
20 1960. Within a very short time it was widely accepted: that asbestos did cause
21 mesothelioma; that levels of asbestos exposure present from environmental exposure as
22 well as occupational exposure were sufficient to cause mesothelioma.

23 31. In 1964, Dr. Irving Selikoff and his coworkers published a mortality study
24 in the *Journal of American Medical Association* showing that there was a substantial
25 excess of occupational cancer and deaths from asbestosis among people involved in the
26 insulating trades. A group of workers who installed insulation and removed it regularly
27 was found to have 45 deaths from pulmonary cancer in a group where only six or seven
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1 such deaths would have been expected. There were four deaths from peritoneal and
2 pleural mesothelioma in this cohort, and this was described as a very rare disease and a
3 substantial excess over what would have been expected. There were also 12 deaths from
4 asbestosis in this work force. The study also noted that the symptoms of these disease
5 might not become manifest until decades after the exposures.

6 32. Subsequently, later in 1964, at an international conference held in New
7 York and published in 1965, Selikoff and coworkers reported that around 80 percent of
8 the people who were in the insulating trade had developed asbestosis by the time they had
9 been in trade for 20 or 30 years or more. At the conference in New York, British
10 researchers Newhouse and Thompson presented a report on 76 deceased mesothelioma
11 patients and an equal number of "controls," based on interviews with relatives. Their
12 report showed strong evidence that mesothelioma patients were far more likely to have
13 had occupational, household, or neighborhood exposure to asbestos than the comparison
14 patients who died from other causes at the same hospital.

15 **OIL INDUSTRY KNOWLEDGE OF THE HAZARDS OF ASBESTOS**

16 33. The hazards of asbestos were well known in the oil industry, where
17 tremendous amounts of asbestos products were used, including raw asbestos fiber in oil
18 drilling "muds". Standard Oil of New Jersey industrial hygienist Roy Bonsib wrote an
19 extensive report in 1937, "Dust Producing Operations in the Production of Petroleum
20 Products and Associated Activities", which stressed the hazards of asbestos. The oil
21 industry trade group, the American Petroleum Institute (API) had regular meetings of
22 doctors from the oil companies starting at least as early as 1945, with the formation of
23 subcommittees including a subcommittee on carcinogenicity. Among the reports that the
24 doctors' group, the Medical Advisory Committee (MAC), reviewed, was Shell Oil
25 chemist HH Zuidema's "Carcinogenic Hydrocarbons and Related Compounds/ A
26 Literature Review", which named asbestos as having been documented to have cancer-
27 producing ability (1945).
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1 34. In 1948, the MAC received a memorandum summarizing a presentation
2 by Dr. we Hueper at the annual meeting of the American Public Health Association, in
3 which Hueper identified asbestos as a material for which a definite correlation with
4 cancer incidence had been shown. Hueper was the Chief of the Environmental Cancer
5 Section, US National Cancer Institute, and the most prolific author of articles on
6 occupational cancer in the US. It was the practice of the committee to circulate
7 memorandums such as this and published papers to its members.

8 35. Additionally, in the early 1950s, Dr. Hueper was invited to appear at one
9 of the MAC meetings. In January 1953, one of Dr. Hueper's articles, "Environmental
10 Cancers: A Review", published in 1952 in the journal Cancer Research, was circulated to
11 members and associates of the MAC. This article pointed to asbestos as a cause of lung
12 cancer.

13 36. In 1954, Hueper presented a paper to the National Petroleum Association,
14 again describing asbestos as a cause of occupational cancer. This was published in a 1955
15 article, "Occupational Cancer Hazards", by the US Department of Labor, and was
16 circulated to members of the MAC and others prior to a meeting of the MAC and its
17 Subcommittee on Carcinogenicity in April 1955.

18 37. In addition, the oil industry was the special focus of one medical journal
19 called Medical Bulletin. This journal was published by Standard Oil of New Jersey and
20 carried articles mentioning asbestos hazards and precautions with X-ray for asbestos
21 workers at oil refining operations in Louisiana (4:98-109, 1939). Macdonald listed
22 asbestos as a carcinogen (15:193-201, 1955). Gardner and Green Esso noted that sawing
23 insulation was an asbestos hazard (14:46-64, 1954). Schneider said asbestos was a hazard
24 to maintenance and repair workers (18:123-139, 1958); and Esso's Meyer and
25 Church wrote that it was a hazard to insulators (21 :256-265, 1961). Abstracts prepared
26 by the Medical Research Division of Esso included Marr's paper on asbestosis in
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1 shipyard workers and Owen's report on 17 cases of mesothelioma in Britain (24:325,
2 1964).

3 **UNION CARBIDE CORPORATION'S KNOWLEDGE**

4 38. Union Carbide was a major user of asbestos and asbestos products and
5 sold asbestos from the company's chrysotile asbestos mines in 1963-1985. Union Carbide
6 mined and supplied fibers for use in the oil industry. The company was the exclusive
7 supplier of asbestos fibers distributed by Montello, Inc. under the trade names Visbestos
8 and Super Visbestos from 1968 to the mid 1980s'. Carbide received numerous articles
9 and abstracts noting the hazards of asbestos through its memberships in the National
10 Safety Council and the Industrial Hygiene Foundation in the 1930s and 1940s. In 1959,
11 Carbide's insurer called attention to high exposures of workers adding asbestos to mixers
12 and filling sacks with asbestos at its plant in Speedway, Indiana. In 1962, Carbide
13 conducted air sampling analyses to measure the dustiness of using asbestos thermal
14 insulation products.

15 39. Carbide officials were present at the historic asbestos conference held by
16 the New York Academy of Sciences in October, 1964, several blocks north of the firm's
17 corporate headquarters on Park Avenue. Following this, the company produced an
18 Asbestos Toxicology Report "in order to counteract any serious problems." The report
19 acknowledged that the recommended limit for dustiness of 5 million particles per cubic
20 foot was not visibly dusty, that concentrations of 8-10 MPPCF were necessary for the
21 dust in the air to be visible. But the report also said that cases of cancer in workers
22 without asbestosis was believed by authorities to be associated with exposures
23 significantly exceeding 5 MPPCF. It concluded that asbestos could be used safely as long
24 as exposures did not exceed 5 MPPCF.

25 40. In 1967, reassurances in the Toxicology Report (referenced in the previous
26 paragraph) were contradicted by a confidential report from Carbide's London offices.
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1 This report said that mesothelioma could result from brief exposure, and the 5 MMPCF
2 guideline was "no longer tenable." In a section of the report entitled "Moral Issues" the
3 Union Carbide report states: "On the basis of present evidence we are not entitled under
4 any circumstances to state that our material is not a health hazard. What is more, if it is
5 believed that a potential customer would use our materials 'dangerously,' and that he is
6 unaware of the toxicity questions, then it must surely be our duty to caution him and
7 point out means whereby he can hold the asbestos air float concentration to a minimum."
8 The Union Carbide corporate Director of Toxicology and one of the listed authors of the
9 Toxicology Report agreed with this report overall and went on to note: "I have no idea
10 what concentration might be effective in preventing this disease (mesothelioma) and I
11 wonder whether even a limit of one million particles per cubic foot would be effective in
12 this regard."

13 41. Nonetheless, the Toxicology Report slightly revised, was sent to a
14 customer in 1969 along with a letter from a Carbide official that said, "a connection
15 between chrysotile asbestos and mesothelioma or lung cancer has not been clearly
16 determined."

17 42. The U.S. Bureau of Mines conducted a health survey at the Union Carbide
18 asbestos mine in California in 1971. The government mining engineers found that the
19 bagger operator was exposed to eight times the 5 f/cc limit and had one exposure 12 times
20 that high. The palletizer operator has exposures almost that high. The general mill
21 atmosphere, also reported as the foreman's time weighted exposure, also exceeded the 5
22 f/cc level. Likewise the foreman's office sample was 7.5 f/cc, possibly from the dust on
23 worker's clothes tracked into the office.

24 43. In 1972, Union Carbide advised its salesmen when dealing with
25 customers who are persistent and threaten to eliminate asbestos that a certain amount of
26 aggressiveness may be effective. Words and catch phrases such as "premature",
27 "irrational" or "avoiding the inevitable" will sometimes turn the table.... Change the mood
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1 before discussing anything pertinent about the new (OSHA) regulations. Alternating
2 between an aggressive and submissive attitude is confusing and allows you to bide time."

3 44. In 1972, Union Carbide conducted asbestos dust studies on oil drill sites to
4 measure airborne asbestos levels released from their asbestos containing drilling muds.
5 The results showed release of fibers in workers' breathing zones from all tested drill mud
6 products.

7 45. In 1974, a Carbide representative recognized the "atrocious" conditions
8 faced by oil industry workers using asbestos in oil-drilling "muds." By 1975, a number of
9 major companies had taken the position that there was no practical way to meet the
10 OSHA monitoring and medical examination requirements and has stopped using asbestos
11 in oil drilling. Smaller contractors stopped using asbestos after being told that warning
12 sign was required.

13 46. Carbide first placed health warnings on its asbestos in 1972, when the US
14 Department of Labor required that caution labels advise that asbestos could cause
15 "serious bodily harm." Carbide lawyers raised concern that the sacks of asbestos the
16 company sold did not bear "cancer" warnings in 1975. This was resisted at that time,
17 following objections that it would have had a serious or fatal result on sales.

18 47. When the Consumer Product Safety Commission pursued rulemaking to
19 ban asbestos in consumer patching compounds in 1976-1977, Carbide led the opposition
20 to the ban. This persisted up until the day before the ban was published in December,
21 1977. It was estimated that 10,000 tons of asbestos was used annually in these products,
22 and independent scientists had shown that high exposures resulted from mixing, sanding,
23 and clean-up after use of these products.

24 48. In 1971, a German concern by the name of Degussa declined to enter into
25 a new agreement to purchase asbestos fiber from Union Carbide Corporation because of
26 the health hazards associated with exposure to asbestos fiber products. When
27 communicating with Union Carbide in November 1971, that it would no longer purchase
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1 from Union Carbide, Degussa enclosed a number of publications concerning the health
2 hazards connected with the use of asbestos fiber products. Union Carbide responded in a
3 January 6, 1972 letter that:

4 "According to you, this product in effect should have been
5 declared harmful and even carcinogenic, and you would be obliged to halt
6 the sale thereof.***...

7 We do not wish to resort to the legal means available to us. It
8 would appear however that we have no alternative unless you give us,
9 without delay, specific written assurance that your company and its
10 representatives will cease making all statements, direct or implied, of a
11 nature detrimental to us."

12 **MONTELLO, INC.'S KNOWLEDGE**

13 49. Montello, Inc. was a distributor of 100 % raw asbestos fiber for use as an
14 oil drilling additive from 1966 to the mid 1980's. Montello, Inc. was the exclusive
15 distributor of asbestos fibers mined by Union Carbide Corporation marketed as drilling
16 additives under the trade name Visbestos and Super Visbestos from 1968 to the mid
17 1980's. Montello, Inc. as a part of the oil industry was a member of the American
18 Petroleum Institute (API) beginning in the early 1960, a member of the Asbestos
19 Information Association/North America (AIA/NA) and Society of Petroleum Engineers.

20 50. Montello, Inc. and Union Carbide actively tried to sell asbestos as an
21 additive for drilling muds in the 1960's through the mid 1980's, despite the fact that
22 asbestos was known to be a carcinogen and despite the fact that there has never been a
23 recognized safe exposure limit from which there exists no risk of malignancy.

24 51. Asbestos was not a necessary ingredient in drilling muds as many
25 alternatives are mentioned in the patents and literature. Furthermore, asbestos was
26 probably little used in drilling muds before about 1963. An alternative to asbestos could
27
28

1 have could have been accomplished using many of the alternatives listed in the patents
2 and technical literature.

3 52. In 1969, Union Carbide having received concern from Montello, Inc.
4 about the use of warnings on bags of Super Visbestos wrote to Montello and assured
5 Montello that: "...the wording on this label is the most innocuous that we could device in
6 an essence it really reminds people to follow good practices which, for the most part, they
7 are following anyway."

8 53. In 1972, Montello and Union Carbide conducted asbestos dust studies on
9 oil rigs. Results showed that substantial asbestos fiber was released from their drilling
10 mud products.

11 54. In 1972, Montello and Union Carbide were aware asbestos dust was
12 released from their products in the breathing zones of oil drill workers. They engineered
13 new asbestos products and warning labels for purposes of continuing their asbestos sales
14 and business.

15 55. In 1973, Montello wrote to Union Carbide regarding the sizing of lettering
16 on the Visbestos bag indicating: "...the lettering in the "5 to 1" box should be the same as
17 in the "warning" box. We aren't trying to overcome the effect of the warning, but we do
18 want to state our side of the case."

19 56. In 1975, a Montello Inc. official complained to the Occupational Safety
20 and Health Administration that citations for non-posting of caution signs regarding
21 asbestos dust "have and are having a very detrimental effect upon our activity in West
22 Texas." In 1979 Montello's President stated in a letter to a Union Carbide official that
23 "asbestos performs a valuable function in drilling fluids ... for proof of the efficacy of
24 asbestos in drilling fluids, one need look no further than the fact that users have continued
25 to buy the material since July of 1972, despite the powerful negative incentive of
26 stringent OSHA regulations."

