

### Case Study 6: Asbestos in Industry

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Clarence Borel began working as an installer of industrial insulation in 1936, a job that necessarily exposed him to heavy concentrations of asbestos dust. Among the insulating materials with which he worked were asbestos products manufactured by Johns-Manville Corporation and other asbestos companies. At the end of a day working with asbestos materials, Borel's clothes would be covered with the dangerous dust:

You just move them just a little and there is going to be dust, and I blowed this dust out of my nostrils by handfuls at the end of the day, trying to use water too, I even used Mentholum in my nostrils to keep some of the dust from going down in my throat, but it is impossible to get rid of all of it. Even your clothes just stay dusty continually unless you blow it off with an air hose . . . I knew the dust was bad, but we used to talk [about] it among the insulators, [about] how bad was this dust, could it give you TB, could it give you this, and everyone was saying no, that dust don't hurt you, it dissolves as it hits your lungs . . . There was always a question, you just never knew how dangerous it was. I never did know really. If I had known, I would have gotten out of it. (Statement of Clarence Borel)<sup>1</sup>

But Borel did not "get out of it." Shortly after making the statement above, Borel died of a form of lung cancer known as mesothelioma that had been caused by asbestosis.

Asbestosis is a scarring of the lung tissue that has been associated with 10 percent of the deaths among asbestos workers. The onset of asbestosis is usually gradual, becoming noticeable only when a period of ten to thirty years elapses after the initial exposure. During this period the worker will feel, and will be diagnosed as, healthy. Once inhaled, however, asbestos fibers can remain permanently in the lungs, causing a tissue reaction that progresses slowly and apparently irreversibly. By the time the disease is diagnosable, a decade or more has elapsed since the date of the injurious exposure; each exposure to asbestos dust can cause additional tissue changes. The disease gradually makes breathing so difficult that victims become pulmonary cripples incapable of any exertion, even climbing stairs. Ten percent of all asbestosis victims die as a result of secondary lung complications. Mesothelioma is a highly malignant and particularly painful cancer of the chest linings that is associated exclusively with asbestos exposure and is usually fatal within a year after symptoms appear. People with such lung cancers become suddenly emaciated, after having been vigorous, productive individuals. Like asbestosis, mesotheliomas take two or more decades to appear, and during these years the future victim will feel and be diagnosed as normal. Many cancers caused by current work with asbestos will not appear until the year 2000. Studies have shown that cigarette smoking and earlier lung disease can substantially increase a person's risk of contracting lung cancer from asbestos exposure.

Asbestos is a grayish white fibrous mineral that is heat resistant and possesses remarkable strength and flexibility. These qualities have rendered it virtually irreplaceable in our society as an electrical and heat insulator. Over three thousand products commonly found in homes and factories contain asbestos, including electrical insulation, fireproofing, brake drums, filters, acoustical tiles, potholders, and so on. As a result, about 4 million workers (and innumerable consumers) have been exposed to heavy concentrations of asbestos in the United States alone since the 1940s. Today between 1.5 and 2.5 million U.S. workers are employed in environments with significant asbestos exposure. Since about 35 percent of heavily exposed asbestos workers are killed by asbestos-related diseases, about 1.5 million of these workers will die as victims of asbestos exposure over the next three decades.<sup>2</sup>

Johns-Manville is the largest producer of asbestos fiber in the United States. In 1979 it had sales of \$168.2 million worth of asbestos fibers, plus sales of several million more dollars worth of asbestos paper and textiles, asbestos cement, and asbestos cement products. The company conducts mining and manufacturing operations in the United States, Canada, and twelve other countries. Johns-Manville was incorporated in New York in 1926 and has been dealing in asbestos products since the 1920s. Net sales in 1979 were \$2.28 billion, up from \$.58 billion in 1970. Total (pretax) profits in 1979 were \$217.8 million, up from \$55.6 million in 1970. Today Johns-Manville employs about 32,500 workers.

It is difficult to say when Johns-Manville first became aware of the danger of asbestosis. The first medical reference to asbestos-related diseases among American workers appeared in 1918, in a monograph published by the U.S. Bureau of Labor Statistics. This paper noted that insurance company records showed increased mortality among asbestos workers and commented that these companies were now reluctant to insure them. During the period 1924-1929 a series of medical studies of asbestosis among textile factory workers appeared in British journals. These reports stimulated Johns-Manville to commission two studies on the effects of asbestos. The first of these studies, which Dr. Leroy V. Gardner carried out at the Saranac Laboratory in New York, was part of a series of experiments on animals that continued for several years. On November 20, 1936, Mr. Brown, head of the legal department of Johns-Manville, wrote to Dr. Gardner clarifying the terms of their agreement to sponsor these animal studies:

It is our further understanding that the results obtained will be considered the property of those who are advancing the required funds, who will determine to what extent and in what manner they shall be made public. In the event it is deemed desirable that the results be made public, the manuscript of your study will be submitted to us for approval prior to publication.<sup>3</sup>

Eventually, Dr. Gardner dropped from the study.

The second study, a health survey of asbestos workers that Dr. A. J. Lanza carried out for the asbestos industry, was ready for publication in 1934. Mr. Hobart, a private attorney, was asked to review Lanza's article for the industry before it was published. On December 15, Mr. Hobart wrote to Mr. Brown (head of Johns-Manville's legal department) saying that

the Lanza report should be changed before publication. In particular, any comparisons between asbestosis and silicosis (a recognized occupational disease) should be eliminated. The letter read, in part, as follows:

And if it is the policy of Johns-Manville to oppose any [legislative] bill that attempted to include asbestos as compensable, it would be very helpful to have an official report to show that there is a substantial difference between asbestosis and silicosis, and, by the same token, it would be troublesome if an official report should appear from which the conclusion might be drawn that there is very little, if any, difference between the two diseases.<sup>4</sup>

On December 21, Mr. Brown sent these and other requests for changes to Dr. Lanza in a letter that read, in part, as follows:

I trust that you will give his [Hobart's] comments and suggestions, as well as those mentioned in my letter of December 10th, your most serious consideration. I am sure that you understand fully that no one in our organization is suggesting for a moment that you alter by one dot or title any scientific facts or inevitable conclusions revealed or justified by your preliminary survey. All we ask is that all of the favorable aspects of the survey be included and that none of the unfavorable be unintentionally pictured in darker tones than the circumstances justify. I feel confident we can depend upon you and Dr. McConnell to give us this "break."<sup>5</sup>

The Lanza report was published in 1935, with a few (but not all) of the changes for which Johns-Manville had asked.<sup>6</sup> The essence of the article was not changed: of 126 randomly sampled asbestos workers employed three years or more, 106 had abnormal lung findings.<sup>7</sup>

The number of employees who were beginning to succumb to asbestosis had started to pose a problem for asbestos manufacturers, since some of these employees or their survivors were now suing for compensation. A 1935 memorandum from Mr. Brown (of Johns-Manville) reported on an industry meeting held on January 15, 1935, at which the participants had discussed their emerging problems with asbestosis-afflicted workers and had also discussed strategies for dealing with these problems. The memo read in part:

It appeared that among the problems common to all industry were the following:

1. The menace of ambulance-chasing lawyers in combination with unscrupulous doctors. The uncertainties surrounding diagnosis of any of the various forms of pneumoconiosis are so many that a question of fact is presented in every case. Expert testimony can be produced by both plaintiff and defendant, and . . . the jury is not likely to favor the opinion of the experts produced by the employers. . . .

2. One of the speakers stated that "the strongest bulwark against future disaster for industry is the enactment of properly drawn occupational disease legislation." Such legislation would (a) eliminate the jury and empower a medical board to pass upon the existence of the disease and the extent of the disability; (b) eliminate the shyster lawyer and the quack doctor, since fees would be strictly limited by law.<sup>8</sup>

By the latter 1930s, several dozen articles had been published suggesting that, although asbestosis was caused by inhaling asbestos dust, the danger might be controlled by maintaining a low level of exposure. An extensive study by the U.S. Public Health Service published in 1938, in fact, suggested that daily exposure to asbestos dust concentrations of up to five million particles per cubic foot of air would be safe as a "tentative standard."<sup>9</sup> The first large-scale survey of asbestos insulation applicators (as opposed to workers in asbestos mines and factories) was published by Dr. Fleisher and others in 1946. The authors examined large numbers of insulation applicators, 95 percent of whom had worked in eastern Navy shipyards for less than ten years, and found only three cases of asbestosis. They concluded that "asbestos covering of naval vessels is a relatively safe operation," especially since the measured exposures to asbestos dust for the insulation workers were with one exception below what the 1938 U.S. Public Health Service study had proposed as a tentative standard of safety.<sup>10</sup>

In 1947, the American Conference of Governmental Industrial Hygienists recommended that employers use the 1938 proposed standard and limit the work environment to no more than five million particles of asbestos dust per cubic foot of air. Nearly all workers, it suggested, could be repeatedly exposed to these concentrations day after day without adverse effect. Except for this recommendation, the government did very little about asbestosis during the next several years: Regulations were few and government inspections and supervision were infrequent. Johns-Manville itself did not conduct any more major tests to determine the hazards of its products.

By the early 1960s, several more reports had been published indicating that the incidence of asbestos-related disease was now climbing at an alarming rate. Then, in 1965, I. J. Selikoff and his colleagues published a definitive study on asbestosis entitled "The Occurrence of Asbestosis Among Insulation Workers in the United States."<sup>11</sup> The authors examined 1,522 members of an insulation workers union and found that 44 percent of those who had been exposed to asbestos for ten to nineteen years had asbestosis; 73 percent of those who had been exposed twenty to twenty-nine years had it; 87 percent of those who had been exposed thirty to thirty-nine years had it; and 94 percent of those exposed more than 40 years had the disease. The authors concluded that "asbestosis and its complications are significant hazards among insulation workers."

Two years before Dr. Selikoff's study was officially published the substance of his findings had been announced at asbestos industry meetings.<sup>12</sup> Johns-Manville became concerned and, in 1964, for the first time, the company fixed the following warning labels on its asbestos products:

This product contains asbestos fiber. Inhalation of asbestos in excessive quantities over long periods of time may be harmful. If dust is created when this product is handled, avoid breathing the dust. If adequate ventilation control is not possible, wear respirators approved by the U.S. Bureau of Mines for pneumoconiosis-producing dusts.<sup>13</sup>

Johns-Manville did not feel that more warning than this was necessary. According to Dr. Paul Kotin, senior vice-president for health, safety, and environment for Johns-Manville Corporation:

Johns-Manville was aware of the fact [that] asbestos exposure was potentially a hazard, and Johns-Manville certainly made no secret of the fact it was a hazard. . . . Johns-Manville had the responsibility of informing the people [to whom] it was selling the material [and] . . . it did this. . . . Now, whether Johns-Manville had the responsibility for going to the work site of the insulation manufacturers anymore than the Bayer Corporation has for going into my home when I take an aspirin [is another matter]. Rather, it suffices [to say] . . . in its ads, "avoid excessive use" or, now, "use only as directed." (Statement of Dr. Kotin in 1977)<sup>14</sup>

Clarence Borel never worked for Johns-Manville. Instead, Borel worked for a building contractor who employed him to install asbestos insulation that Johns-Manville (and other firms) had manufactured. Shortly before he died, however, Borel argued that Johns-Manville should be held responsible for his sickness and should pay him compensation. He claimed that the manufacturer knew that asbestos was dangerous and had a duty to inform the final users of its asbestos products that inhaling the dust could be fatal. Johns-Manville also had had a duty, he claimed, to test asbestos products more thoroughly in order to ascertain the dangers involved in their use.<sup>15</sup>

Johns-Manville, however, held that Clarence Borel's own employer should have warned him of the dangers of asbestos, or that Borel should have protected himself against the asbestos dust by wearing a mask (or by asking his employer to furnish ventilating blowers), since, in his own words, he "knew the dust was bad."<sup>16</sup> Johns-Manville also claimed that the manufacturers of the asbestos products that Borel handled were not responsible for Borel's disease and death because manufacturers did not know enough about asbestosis during the period in which Borel probably contracted the disease. And last, Johns-Manville claimed, there was no way of knowing whether Borel's disease had been caused by Johns-Manville's products or by asbestos from the products of other manufacturers that Borel had also handled.

Before he died, Borel was asked about the use of respirators. He replied that they were not furnished by his employers during his early work years. Although respirators were later made available on some jobs, insulation workers were not required to wear them and had to make a special request if they wanted one. According to Borel, when respirators were furnished, they were uncomfortable, could not be worn in hot weather, and "you can't breathe with the respirator." Borel further claimed that no respirator in use during his working life could prevent the inhalation of asbestos dust.

Eventually, Borel's estate was awarded \$79,436.24 in a verdict that was later upheld by a federal appeals court. But Borel's suit was merely the first of a flood of lawsuits Manville would have to face. In 1977, 445 Texas workers sued for asbestos-related injuries, eventually settling for \$20 million.<sup>17</sup> By the middle of 1982 more than 15,000 workers and family members had sued Manville for exposure to asbestos, and 500 new lawsuits were being filed each month. Average settlements were costing the company \$40,000--half for the plaintiff and half for medical and legal costs.<sup>18</sup> In interviews for Environmental Action and Village Voice, Ted Kowalski, a victim of asbestosis who began working for Manville in 1947 and whose wife also has asbestosis, describes his situation and that of fellow workers and their family members who had asbestos-related diseases as follows:

There's Ronnie, her husband died of mesothelioma; she never worked there, she has it. There's Sue, her husband died from mesothelioma. She has it. Carol has it; her husband Steve is very sick. She's been diagnosed as having asbestosis. . . . I could go on and on. . . . I started off working in the shipping department loading box cars. I was a carton maker in the finishing department. And I was a band saw operator. I worked on a crusher. Every job you worked on was dusty. . . . The sun would shine in through the skylight. It was like millions of tiny crystals that would float around. They'd fall in your coffee . . . and you'd drink the stuff . . . We sat down, a bunch of us to eat our lunch and the stuff was there falling. . . . I brought it home on my clothing. My children used to call me 'Daddy the snowman'. . . . They never said you had to wear one [a respirator]. You'd ask for one [when the old one got clogged] and they'd say, 'Geez, what did you do with the other one?'. . . . When we were hired, they should have said, 'Hey, there's a risk involved. Do you want to take it with the risk?' And you'd have had the option to say no. . . . [In 1981] on my wife's birthday, my son Teddy had some chest pains. He went to the doctor, and she diagnosed my son as asbestosis. He pulled up to the house. My wife asked, 'How you made out?' and he had tears in his eyes. . . . They didn't tell us, so I carried the disease home to my family. . . . They knew and they didn't tell us. They lied. . . . I pray as I did in the past, each day, and I pray that those who did what they did to us will be punished. (Statement of Ted Kowalski, aged 54)<sup>19</sup>

To cope with the asbestos suits, Manville Corporation filed for protection under Chapter 11 bankruptcy laws on August 26, 1982, which allow a company to reorganize while continuing to operate but which freezes all claims and lawsuits against it. The move astonished the financial and legal community since this was the first time a financially healthy company used bankruptcy to protect itself against future financial problems. Although its financial condition was very strong (with sales of \$22 billion, profits of \$60.3 million, and a net worth of \$1.1 billion in 1981) and it faced no immediate threat of insolvency, Manville's Chief Executive, John McKinnery, claimed that at least 32,000 more suits eventually would be brought against it and settling these future suits would exceed its net worth.<sup>20</sup>

Filing Chapter 11 [bankruptcy] does not mean that the Company is going out of business or that its assets will be liquidated. Thousands of asbestos-health lawsuits are the problem! . . . We're overwhelmed by 16,500 lawsuits . . . with many more projected. The federal government has refused to admit its responsibility to its shipyard workers.

Congress has failed to act to provide compensation for claimants. Chapter 11 is the only orderly way for the Company to handle the litigation and treat everybody fairly. . . . To avoid Chapter 11, we would have had to strangle the Company slowly, by deferring maintenance and postponing capital expenditures. We would also have had to cannibalize our good businesses just to keep going. . . . We believe Chapter 11 is the best way to permit the Company to operate normally, providing jobs and useful products, despite all the litigation. Most important, I want to keep our employee's morale up. They've done a bang-up job to keep Manville lean and competitive. . . . The Chapter 11 filing automatically stops all lawsuits pending against us. New lawsuits are also automatically stopped. We hope to establish an effective system to handle these claims in Chapter 11. . . . The largest group now suing us consists of shipyard workers claiming recently manifested injury from asbestos exposure during wartime service, 40 years ago. . . . Over the years, Johns-Manville Corporation's former insurance broker bought insurance coverage for it totaling hundreds of millions of dollars. Right now, however, only one company is paying, and it pays only a small part of each claim. . . . Now, when we need the coverage, with one exception, the insurance companies are reneging. . . . We need an effective, practical national system which delivers maximum payments to injured workers, minimizes the costs of delivering those payments and withholds payments to those with no disability. . . . We had one suit from a plaintiff with doubtful asbestosis who . . . received . . . one and a quarter million dollars. . . . We have seen others totally disabled or in fact dead who received no award. . . . This type of toxic tort litigation is an intolerable gambling exercise for both plaintiff and defendant. (Statement of John A. McKinney)<sup>21</sup>

The bankruptcy filing had the immediate effect of freezing all asbestos suits and of ensuring that no new claims could be filed against the company after six months. Filing for bankruptcy also moved all cases then in progress out of state and federal courts which allow both trial by jury and imposition of punitive damages, and into federal bankruptcy court where nonjury trials are standard and where punitive damages are not allowed. Also as a result of the bankruptcy petition, payment on all suits would have to wait until after all secured creditors (such as banks and suppliers) were paid in full, and then they would be paid from whatever assets remained.<sup>22</sup> The bankruptcy filing came under intense fire from critics, who called it a "scam" and who argued it was nothing more than an effort to escape its obligations to the victims.<sup>23</sup>

When large numbers of asbestos lawsuits began to be filed, Manville and other asbestos companies formed the Asbestos Compensation Coalition to lobby Congress to pass legislation that would limit workers' right to sue or that would establish a trust fund to compensate victims with the government putting up half the funds and the companies the other half. Lobbyists for the companies contended that since about half of the suing workers had been injured while working in government shipyards during World War II and the Korean war, the government should pay part of the bill. On September 9, 1982, J. Paul McGrath, Assistant Attorney General of the Department of Justice announced the government's position on the asbestos suits:



The government's position in the pending asbestos litigations is that it has no tort liability to the victims of asbestos-related diseases. If such victims were exposed to asbestos while they were government employees, then they may be compensated through the Federal Employees Compensation Act. If they were not government employees, then they must look to other workmen's compensation schemes or to litigation against their employer or others for compensation. (statement of J. Paul McGrath)<sup>24</sup>

On July 18, Manville Corporation sued the U.S. government for some of the costs of the asbestos suits. Company lawyers claimed:

The government knew what was going on in the shipyards. The Navy permitted gross overexposure to asbestos fibers. . . . [A confidential 1941 memo written by the Navy chief of preventive medicine to the service's surgeon general said,] "We are having a considerable amount of work done in asbestos and from my observations, I am certain that we are not protecting the men as we should." . . . In its World War II shipbuilding program, the government failed to adhere to the recommended U.S. Public Health Service safety standard, thus causing shipyard workers to be exposed to excessive concentrations of asbestos. . . . Moreover, the government kept knowledge of these excessive exposures confidential. These acts of the United States led to the occurrence of asbestos-related disease in workers who were employed in shipyards during World War II. These workers or their representatives have sued Johns Manville and others to recover damages allegedly incurred as a result of asbestos-related disease although those damages were in fact caused by acts of the United States and not Johns Manville." (Statement of Manville Lawyers)<sup>25</sup>

On July 19, upon receiving word that Manville Corporation intended to sue the federal government for the costs involved in settling the asbestos suits, Assistant Attorney General J. Paul McGrath issued another public statement again setting out the government's position on the suits:

I have been advised that the Manville Corporation publicly announced today its intent to file yet another suit against the United States in its five year unsuccessful campaign in the press, media, legislature and the courts to shift responsibility for injuries due to exposure to its asbestos products from the corporation to the shoulders of the taxpayers . . . Manville's position . . . is that the taxpayers should bear the burden of any corporate liability because Manville and its predecessor corporations were serving the war effort by meeting the demand of the military for asbestos products. Such a theory ignores the fact that Manville, as a publicly owned corporation was in the business for the profit of its shareholders and was not a public service organization. Indeed, one searches the record in vain for any indication that public welfare, rather than maximization of corporate profit, motivated corporate decisions. As demonstrated in cases tried to date, Manville developed and introduced its asbestos products into the stream of commerce and work sites all over the country. It spurred demand for its products and maintained this demand by withholding vital information about the risks associated with asbestos. Having



promoted the use of asbestos products with great corporate success and profit, Manville now, from the haven of bankruptcy court, contends that the taxpayer ought to pay Manville's creditors. Manville's theory has no foundation in reality or in the law and will not justify a shifting of corporate responsibility to the taxpayer.

(Statement of Assistant Attorney General J. Paul McGrath)<sup>26</sup>

Judge Burton Lifland of the New York Bankruptcy court gave Manville Corporation until February 22, 1983 to present to his court a reorganization plan detailing how the company would reorganize its assets and operations and how it would repay its credit and asbestos claims. In January 1983, G. Earl Parker, a Manville senior vice president charged with developing the reorganization plan, described some of the reorganization proposals it was considering. The proposals included provisions limiting the number of asbestos claims the company would pay and the amount of compensation it would provide each claimant. The company would have no responsibility for any additional claims from asbestos victims that might become aware of their diseases in the future. Compensation would be funded partly by the company (analysts suggested Manville was thinking of paying around \$500 million), partly by the federal government, and partly by its insurance carriers. These proposals assumed that the bankruptcy court would pressure the government and the insurance carriers into paying part of the asbestos claims. In addition, the proposal would include a provision for binding arbitration in cases where the company or the claimant disagreed over how much compensation was due.<sup>27</sup>

The suggested proposals were not acceptable to lawyers for the asbestos victims. Consequently, Manville managers asked for and received a 90-day extension on the time granted to file a reorganization plan. On May 12, 1983, the company presented a document to the court proposing that the corporation be split into two companies.<sup>28</sup> Manville Two would take over all of the corporation's nonasbestos operations and subsidiaries and its assets would be totally immune from liability for any asbestos injuries. Manville One would include all asbestos operations and all asbestos suits would have to be paid from its assets. Manville Two would make periodic cash payments to Manville One. Asbestos victims would be compensated either on the basis of a "no-fault" schedule that set compensation payments at certain fixed levels, or on the basis of negotiations that would ultimately be arbitrated by the bankruptcy court. No punitive damage claims would be allowed on either basis.

Attorneys for the asbestos victims and Judge Lifland sharply criticized the plan. Judge Lifland protested that the plan "doesn't advance things. It runs counter to a solution. I haven't seen any numbers here." Asbestos attorneys called the plan an "outrageous rehash" and said "it's another foot-dragging attempt." Judge Lifland instructed Manville's lawyer: "I am giving you two weeks to come up with something we can work with."<sup>29</sup>

By summer of 1985, however, the company still had not come up with a plan that was acceptable to all parties. Then, on Friday August 2, 1985, Manville announced that the company board of directors had approved a reorganization plan which had also been approved by Leon Silverman, a court-appointed lawyer representing future asbestos claimants; Mr. Rosenber, a lawyer representing current asbestos plaintiffs, also announced his approval of the "general outlines" of the

## PHI445 Personal and Organizational Ethics

### Online

plan.<sup>30</sup> The proposal would establish a trust fund that would assume all liability for present and future asbestos injuries through the next 25 years. The trust would start off with \$815 million in cash, including \$315 million in currently settled insurance proceeds, \$300 million in cash or future insurance settlements, and \$200 million in cash or short-term receivables. Manville would pay \$75 million a year into the fund for the final 22 years of the fund, and up to 20 percent of Manville's annual profits could go into the fund after the fourth year if needed. In addition the trust would receive 50 percent of Manville's outstanding common stock, giving the trust a controlling interest in the company that would ensure that future payments are made as agreed. The plan put no limits on the amount of compensation victims could receive from the trust. Manville's continuing operations would be shielded by court order from asbestos-health liabilities. No mention was made of government contributions to the fund.

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<sup>1</sup>Borel v. Fiberboard Paper Products Corporation, et al., 493 F. 2d 1076 (1973), p. 1082.

<sup>2</sup>U.S. Congress, House, Asbestos-related Occupational Diseases: Hearings before the Subcommittee on Compensation, Health, and Safety of the Committee on Education and Labor, 94th Congress, 2nd session, 23 and 24 October; 13 and 14 November 1978, pp. 132-35. Hereafter cited as "Asbestos Hearings."

<sup>3</sup>Ibid., p. 31.

<sup>4</sup>Ibid., pp. 28-29.

<sup>5</sup>Ibid., pp. 29 and 643.

<sup>6</sup>Ibid., 643.

<sup>7</sup>A. J. Lanza et al., "Effects of the Inhalation of Asbestos on the Lungs of Asbestos Workers," Public Health Reports, 4 January, 1935, pp. 1-12.

<sup>8</sup>Asbestos Hearings, pp. 94-95.

<sup>9</sup>W. C. Dressen, et al., "A Study of Asbestosis in the Asbestos Textile Industry," Public Health Bulletin, no. 241 (1938).

<sup>10</sup>W. E. Fleisher, et al., "A Health Survey of Pipe Covering Operations in Constructing Naval Vessels," Journal of Industrial Hygiene and Toxicology, January 1946.

<sup>11</sup>I. J. Selikoff, et al., "The Occurrence of Asbestosis Among Insulation Workers in the United States, Annals of the New York Academy of Science, 132 (1965); 139-55.

<sup>12</sup>Asbestos Hearings, pp. 50 and 51.

<sup>13</sup>Borel v. Fiberboard Paper Products, p. 1104.

<sup>14</sup>Asbestos Hearings, p. 116.

<sup>15</sup>Borel v. Fiberboard Paper Products, p. 1086.

<sup>16</sup>Ibid., p. 1091.

<sup>17</sup>"Manville Move Brings Asbestos Battle to Head in Courts and Congress," Los Angeles Times, August 27, 1982.

<sup>18</sup>Jim Jubak, "They Are the First," Environmental Action, February 1983, p. 12.

<sup>19</sup>Jim Jubak, "They Are the First," Environmental Action, February 1983, pp. 9-14; and Jeff Coplon, "Left in the Dust," Village Voice, pp. 1-34.

<sup>20</sup>"Asbestos Maker Files for Bankruptcy, Cites Lawsuits," Los Angeles Times, 27 August, 1982, p. 1.

<sup>21</sup>"Despite Strong Business, Litigation Forces Manville to File for Reorganization," advertisement, Wall Street Journal, 27 August 1982, p. 29.

<sup>22</sup>Edward Greer, "Going 'Bankrupt' To Flee the Public," The Nation, 16 October 1982, pp. 360-62.

<sup>23</sup>"Manville bankruptcy Scam Under Fire," The Dispatcher (published by the International Longshoreman's and Workingman's Union), June 3, 1983; "Manville Thriving in Bankruptcy, Shielded From Asbestos Lawsuits," New York Times, 25 August 1983.

<sup>24</sup>Department of Justice, "Statement of J. Paul McGrath Assistant Attorney General Civil Division, Before the Education and Labor Committee Subcommittee on Labor Standards, House of Representatives, Concerning Manville and UNR Bankruptcy, on September 9, 1982"; see also "Government Disavows Any Asbestos Liability," New York Times, September 10, 1982.

<sup>25</sup>"Asbestos Firm Sues U.S.," San Jose Mercury, Wednesday, July 20, 1983, p. 8A.

<sup>26</sup>Department of Justice, Press Release, July 19, 1983.

## PHI445 Personal and Organizational Ethics

### Online

<sup>27</sup>"Manville Plans to Seek Strick Limit On Its Liability for Asbestos Claims," The Wall Street Journal, January 27, 1983.

<sup>28</sup>"Manville Unveils Outline of a Plan to Reorganize," The Wall Street Journal, May 13, 1983.

<sup>29</sup>Ibid.

<sup>30</sup>"Breakthrough Plan Advances at Manville," New York Times, 2 August 1985; "Manville OKs Huge Asbestos Settlement," San Jose Mercury News, 3 August 1985.