

R. P., Estate of R. P., H. P. v. Vermont Asbestos Group (January 23, 2007)

**STATE OF VERMONT
DEPARTMENT OF LABOR**

R. P., Estate of R. P.,
H. P.

Opinion No. 02-07WC

v.

By: Margaret A. Mangan
Hearing Officer

Vermont Asbestos Group, Inc.
and St. Paul Travelers
Insurance Company

For: Patricia Moulton Powden
Commissioner

State File No. X-01358

Pre-trial conference held on June 5, 2006

Hearing held in Montpelier, Vermont on September 22, October 26, 27, and 30, 2006

Deposition of Dr. Craighead taken on November 3, 2006

Record closed on September 7, 2006

APPEARANCES:

Robert G. Cain, Esq. for Claimants

Andrew C. Boxer, Esq. and J. Justin Sluka, Esq. for Defendants

ISSUES:

1. Did R. P. (Claimant) suffer a work-related injury to his lungs as a result of his work for Vermont Asbestos Group?
2. If so, was R. P. disabled from work as a result of his work-related lung injury?
3. Did R. P. suffer any permanent impairment as a result of his work-related lung injury?
4. Was R. P. permanently and totally disabled from work as a result of his work-related lung injury, and, if so, what was the duration of his permanent total disability?
5. Was R. P.'s death on August 31, 2006 caused by his work-related lung injury?

EXHIBITS: lists are appended to the end of this opinion

CLAIM:

Claimant seeks a determination that he suffered a compensable injury of asbestosis or asbestos-related pulmonary fibrosis as a result of his employment with VAG; that his compensable work-related injury rendered him permanently and totally disabled; that he is entitled to medical benefits pursuant to WC Rule 40 for the treatment of his asbestosis or asbestos-related pulmonary fibrosis; that his work-related lung disease caused his death, entitling his sole dependent, his widow, to dependent's benefits; that his Estate is entitled to statutory funeral and burial expenses; and, if successful, an award of attorneys' fees and costs of the litigation process, and interest on benefits owed.

FINDINGS OF FACT:

1. Official notice is taken of all Department forms.
2. R. P. worked for Vermont Asbestos Group, Inc. (VAG) and its predecessors in interest from 1959 through August 4, 1994, with a brief absence for nine months in 1962-1963.
3. VAG was R. P.'s employer for purposes of the Workers' Compensation Act.
4. As of August 4, 1994, R. P. was an employee of VAG within the meaning of Vermont's Workers' Compensation Act.
5. As of August 4, 1994, VAG was the employer of R. P. within the meaning of Vermont's Workers' Compensation Act.
6. August 4, 1994 was R. P.'s last day of work for VAG.
7. R. P.'s hourly wage at VAG when he stopped working as of August 4, 1994, was \$8.44 per hour, and Mr. P. consistently and regularly worked a 40 hour week at that wage for the time period preceding August 4, 1994, resulting in weekly wages of \$337.60.
8. Defendants never produced a Form No. 25 Wage Statement for R. P. According to the First Report of Injury filed by the employer, R. P. worked eight hours per day, five days per week.
9. H. P. is R. P.'s wife and widow.
10. R. P. stopped working on July 21, 2004 because of his worsening lung disease.
11. Between July 21, 2004 and the date of his death on August 31, 2006, R. P. was totally disabled from work due to his lung disease.

12. Prior to having to stop all work in late July 2004, due to his progressively worsening lung disease, R. P. averaged \$407.68 per week as an employee of Northeast Ag Sales.
13. In April, 2004, Mr. P.'s primary care physician, Dr. Peter Harris, set up a pulmonary consult for Mr. P's, for further evaluation and management of chronic obstructive pulmonary disease and a chronic cough that Dr. Harris had been following since late 2003. The pulmonary consult was set up with Dr. Veronika Jedlovszky, a pulmonologist at North Country Hospital.
14. By the summer of 2004, Dr. Jedlovszky determined that Mr. P. most likely was suffering from asbestos-related pulmonary fibrosis.
15. Mr. P's lung disease progressively worsened from the time that he was forced to stop working in late July, 2004, until December, 2005, at which time Dr. Jedlovszky put Mr. P on oxygen on a full-time basis, 24 hours per day, seven days per week.
16. On or about December 1, 2005, Mr. P filed a Form No. 5 Notice of Injury and Claim for Compensation.
17. On or about December 27, 2005, St. Paul Travelers Insurance Company, the workers' compensation carrier for VAG, declined Mr. P's claim, asserting that his claim was barred by the Occupational Disease Act's statute of limitations.
18. On or about December 29, 2005, Mr. P filed a Form No. 6 Notice and Application for Hearing.
19. On or about January 26, 2006, Attorney Andrew Boxer entered his appearance on behalf of St. Paul Travelers and VAG, and, at that time, asserted that Mr. P's claim was barred by the ODA's statute of repose because, "all activities at the company ceased on April 24, 1994."
20. In fact, Mr. P, remained working at VAG until August of 1994.
21. Mr. P was last injuriously exposed to asbestos after July 1, 1994.
22. After her February 23, 2006 Pulmonary Clinic note, Dr. Jedlovszky referred R. P. to Dr. Gerald Davis, a pulmonologist at Fletcher Allen Health Care who sub-specializes in dust-related lung diseases, for a second opinion pulmonary consultation. Dr. Davis examined Mr. P's medical records, including x-rays and CT scans, and performed a full physical examination of Mr. P on May 9, 2006. At the conclusion of his work-up, Dr. Davis concluded that, "I have a very high level of confidence in establishing a diagnosis of asbestosis or pulmonary fibrosis secondary to asbestos fiber exposure." According to Dr. Davis, Mr. P exhibited typical clinical symptoms of asbestosis, Mr. P's radiologic studies were characteristic of asbestosis, and Mr. P's significant 34 year history of exposure to asbestos fibers clearly pointed to a diagnosis of asbestosis.

23. There was an objective basis for a clinical diagnosis of asbestosis in this case, including respiratory crackles heard on multiple examinations, significant changes in Mr. P's ventilatory function, significant impairment of Mr. P's gas exchange, and clubbing of Mr. P's digits.
24. Subsequently, Mr. P's radiologic studies were examined by Dr. Jeffrey Klein, a radiologist from FAHC who sub-specializes in chest radiology, and who had previously been involved in Mr. P's care. Dr. Klein rendered an opinion that Mr. P's radiologic studies were consistent with a diagnosis of asbestosis. Dr. Klein agreed with Dr. Davis' conclusion that Mr. P was suffering from work-related asbestosis.
25. Next, Claimant retained Dr. Kelly Butnor, a pathologist from FAHC who sub-specializes in pulmonary pathology, to confirm the validity of the opinions previously rendered by Dr. Jedlovszky, Dr. Davis and Dr. Klein. After a full record review of the case, including examination of the pathology taken from Mr. P, Dr. Butnor concluded that there was no basis to draw any conclusions based on the pathology in the case, and that Drs. Jedlovszky, Davis and Klein were correct in concluding that Mr. P was suffering from asbestosis, based upon his clinical picture, the radiologic studies, and the documented history of asbestos exposure.

Claimant's Asbestos Exposure

26. The mine at issue, located at Eden-Lowell, Vermont, historically was one of the largest United States' producers of asbestos fibers.
27. In the mid-1920s, the Vermont Asbestos Mine was formed to mine and mill the asbestos ore body. Vermont Asbestos was acquired in 1936 by the Rubberoid Company, a leading producer of asphalt and asbestos building materials. In 1967, the Rubberoid Company merged with General Aniline & Film Corporation (GAF).
28. In 1974, GAF announced its intention to close the mine, due to the large costs needed to implement dust control measures required by the EPA. The then current employees of the mine formed Vermont Asbestos Group, Inc. (VAG), and in March 1975, VAG purchased the mine operation from GAF. Over time, the principal shareholder, Howard Manosh, acquired a controlling interest in the corporation.
29. VAG continued to operate the asbestos mine until the end of 1994, at which time the operations were closed. VAG discontinued actively mining ore from the quarries in approximately 1992, however, because of the large stock of asbestos fiber in inventory, VAG continued to process and reprocess bags of asbestos fibers, continued to operate the mill, continued trucking and shipping bags of asbestos fibers, and continued to warehouse bags of asbestos fiber.
30. The VAG asbestos mine had the capacity for processing about 150 tons of ore per hour, and the mine produced about 30,000 tons of asbestos fiber, of all grades, per year. The mill itself had a floor area of 65,000 square feet.

31. For commercial purposes, asbestos fiber is graded as to lengths. VAG produced over a dozen different grades of asbestos fiber, the shortest being the so-called floats, which resembled a talcum powder-like substance, and the longest being the so-called Hooker one grade, which constituted fibers more than an inch in length. In addition, VAG routinely purchased from the asbestos mines in Quebec, including the mine at Thetford, Quebec, longer grades of fiber to mix in with the shorter fibers produced at the Vermont mine. The Quebec asbestos mines and the VAG mine both produce primarily chrysotile asbestos fiber. Both are also contaminated with tremolite that is considered generally to be more pathogenic than pure chrysotile fiber.
32. The asbestos fiber at VAG was packaged in one hundred pound bags of paper or plastic weave, bags in which the fiber was compressed to less than one-half its normal volume. The bags contained minute perforations to assist in compressing the bags.
33. Claimant began working at the VAG asbestos mine¹ in 1959, starting as a bagger in the bagging area of the mill building. He continued to work in that capacity through 1962 then left the mine employment for approximately nine months, before returning in 1963. From the time of his return in 1963 through approximately 1970, Claimant continued working as a bagger in the bagging area of the mill. From approximately 1970 through approximately 1978, Claimant worked in the shipping department of the warehouse where he handled bags of asbestos. At least once per day, one of these bags would be broken and Claimant would frequently be covered with fibers at the time. He frequently had to “blow himself off” to get rid of the dust before going home. From approximately 1978 through approximately 1989, Claimant drove large trucks in the quarry, bringing asbestos ore from the open pit mine to the crusher near the mill. From approximately 1989 to August 4, 1994, Claimant drove a tractor-trailer bringing asbestos products from the mill in Lowell to the warehouse in Morrisville. During that work as a tractor-trailer driver, Claimant also handled the asbestos materials, loading them on and off the trailers, and he had daily exposure to asbestos fiber.
34. During the last months that Claimant was employed at VAG, he drove tractor trailers loaded with asbestos fibers, helped load and unload bags of asbestos fibers, handled the inventory of asbestos in the warehouse, helped ship the asbestos from the warehouse, reprocessed bags of asbestos fibers in the mill, and cleaned up asbestos dust at the mill building. During Claimant’s last two days of employment, August 3 and 4, 1994, he was assigned to sweeping up asbestos dust at the mill building, including asbestos dust on the beams and on the floors.
35. Claimant was a life-long non-smoker. He did not have any occupational or environmental exposures to respiratory toxicants other than his thirty-four years of working with asbestos at the VAG mine.

¹ References to “asbestos mine,” “VAG Mine,” and similar references, are meant to refer to all aspects of the mine operations conducted by VAG and its predecessors, including the quarries, pits, waste piles, mill, administrative buildings, warehouse, road system, machinery, and equipment.

36. Throughout Claimant's thirty-four year working history at the VAG mine, he worked at virtually every aspect and area of the operations. Over that period, Claimant consistently worked 40 hours or more per week, generally taking only one or two weeks of vacation per year.
37. Claimant's exposure to airborne asbestos dust was heavy and it was pervasive. There was no job that Claimant performed at the mine that protected him from asbestos dust exposure, although Claimant wore masks that were available in "heavy" asbestos areas.
38. The respiratory protection provided and used at the mine was inadequate and insufficient to protect the employees from hazardous levels of asbestos dust. Until GAF purchased the mine in the mid-1960s, there was little in the way of dust control measures or dust protection for the employees. After GAF purchased the mine in the mid-1960s, paper dust masks were used on a discretionary basis in "heavy dust areas." The paper dust masks were inadequate protection from asbestos dust.
39. Not until the early 1970s were respirators introduced. VAG began using respirators at that time, however, the first type of respirator used, the Dustfoe 77, was insufficient protection. In addition, VAG never employed and enforced a respirator use policy that adequately protected its workers, including Claimant, from the hazards of asbestos dust. With VAG's acquiescence, the workers typically utilized respirators on a discretionary basis only in "heavy dust areas." The practice of wearing the masks only protection resulted in exposing the workers, including Claimant, to unreasonable, heavy and hazardous levels of asbestos dust.
40. It was discovered at the deposition of Dr. Craighead, Defendant's expert, taken on November 3, 2006, and after the Formal Hearing had been conducted before the Hearing Officer, that Dr. Craighead has records from the Vermont Department of Environmental Hygiene that specifically relate to the determinations of the asbestos dust concentrations at VAG's mine. Furthermore, Dr. Craighead revealed that he had informed Attorney Boxer not only of the existence of the Vermont Department of Environmental Hygiene records regarding asbestos dust concentrations at the VAG mine, but also that Dr. Craighead had copies of those records in his files. Dr. Craighead testified that the governmental documents regarding air quality were not produced because he made the subjective determination that the air quality studies "was a poorly done job," and therefore he unilaterally determined that the records were "not relevant."
41. Dr. Craighead conceded that the air quality records from the Vermont Department of Environmental Hygiene, which were in his records in his office, demonstrated excessive levels of airborne asbestos at the Vermont mine "in some determinations, but not all." Dr. Craighead agreed that the governmental records that he had but did not produce could show excessive levels of airborne asbestos at the Vermont mine more than fifty percent of the time.

42. The testimony from Claimant and co-employees, who were all long-term employees at the asbestos mine, clearly demonstrated that the employees' exposure to asbestos dust was regular and pervasive. Their testimony also clearly established that the concentrations of asbestos dust that the workers were regularly subjected to were heavy, excessive and beyond safe levels.
43. The testimony from Claimant's numerous fact witnesses also established that neither VAG nor its predecessors ever adopted and enforced any worker inhalation protection policy that served to effectively screen out hazardous asbestos dust.
44. Although Defendants produced earlier in this proceeding an Affidavit from Richard Parker, who was identified by Defendants as VAG's "Safety Director," and even though Defendants initiated Mr. Parker's deposition during the discovery phase of this case, Defendants elected not to call Mr. Parker as a fact witness at the time of the Formal Hearing.
45. Mr. Parker revealed at his deposition that at least six of the paragraphs in his twenty paragraph Affidavit are false.
46. In light of his deposition testimony, Claimant called Mr. Parker as a fact witness at the time of the Formal Hearing. Mr. Parker, identified as VAG's Safety Director from approximately 1978 to 1985, corroborated the testimony of Claimant's fact witnesses that the airborne asbestos at the mine was regular, pervasive, and heavy, and that VAG employed a relaxed attitude and policy with respect to the use of respirators (once they were finally implemented to some degree). In fact, Mr. Parker noted that even he was heavily exposed to asbestos during the times that he worked as a bagger. Mr. Parker also confirmed that even he did not use a respirator to any significant degree.
47. There is no evidence to show that R. P. ever used the so-called "Comfo" respirator, or that he was ever required to use one. He wore either a dust paper mask or a "Dustfoe 77" respirator; he wore those methods of dust protection as much or more as anyone at the mine; he often wore his dust mask or respirator around his neck, whereas other workers would not even carry a respirator on their person; and that he wore the dust mask or respirator over his face for dust protection on a discretionary basis when the dust was "heavy," or when he was in a "respirator zone."

Medical Expert Evidence

For Claimant:

48. Four medical experts testified for Claimant, with expertise and specialties in pulmonology, chest radiology, and pulmonary pathology.
49. Dr. Veronika Jedlovszky is a board certified pulmonologist from North Country Hospital, and Claimant's primary treating pulmonologist. She is the Medical Director of Critical Care Services and Respiratory Care Services at North Country Hospital, as well as the Pulmonology/Sleep Medicine Clinic at the Hospital. Dr. Jedlovszky does not specialize in the area of dust-related lung diseases, and she is not published in that area, including asbestos-related lung diseases. Dr. Jedlovszky is a full-time, active clinician, and she oversaw Claimant's care from a pulmonary standpoint from April 2004 to the time of Claimant's death on August 31, 2006. Dr. Jedlovszky prepared and signed Claimant's death certificate.
50. Dr. Gerald Davis is an experienced board certified pulmonologist who practices at Fletcher Allen Health Care. He is a Professor of the Department of Medicine at the University of Vermont Medical School, and was the long-time Director of the Pulmonary Disease and Critical Care Medicine Unit of the University's Department of Medicine. Dr. Davis has an active clinical practice at FAHC. He has significant teaching responsibilities at the University of Vermont's College of Medicine, and he has significant research responsibilities. Dr. Davis sub-specializes in the area of dust-related lung diseases, and he is published in that area, including asbestos-related lung diseases. Dr. Davis's research and publications based on that research has been continuous, up through the present.
51. Dr. Davis was one of Claimant's treating physicians. Dr. Jedlovszky referred Claimant to Dr. Davis for a second opinion pulmonary consultation, and, in conjunction with that, Dr. Davis performed a complete work-up of Claimant, including a review of his medical records, review of Claimant's radiologic studies, and a complete physical examination of Claimant.
52. Dr. Jeffrey Klein is a board certified radiologist who practices at Fletcher Allen Health Care. As with Dr. Davis, Dr. Klein has a very active clinical, teaching and research practice. Dr. Klein sub-specializes in the area of chest or thoracic radiology, and he is well known in that area. He is widely published in the area of pulmonary diseases, he is the Chief of Thoracic Imaging at the University of Vermont College of Medicine's Department of Radiology, and he was the first recipient of the A. Bradley Soule and John P. Tampas Green & Gold Professor of Radiology Fellowship at the University of Vermont College of Medicine. Dr. Klein's active clinical, teaching and research practice has continued unabated up to the present. Dr. Klein was involved in Claimant's medical care before this litigation was instituted, and therefore may be considered a treating physician.

53. Dr. Kelly Butnor is a board certified pathologist in anatomic and clinical pathology. Among other professional organizations, she is a Fellow of the College of American Pathologists. She is an attending surgical pathologist at Fletcher Allen Health Care, and, as with Drs. Davis and Klein, has an active medical practice that combines extensive clinical service, extensive teaching responsibilities, and extensive research in her field.
54. Dr. Butnor is a sub-specialist in pulmonary pathology. She is published in the area of asbestos-related lung diseases. She was the primary author of the chapter “*Cytopathology of Asbestos-Associated Diseases*,” in Professor Roggli’s oft-cited book, *Pathology of Asbestos-Associated Diseases*,” a text that was published in 2004.
55. Although Dr. Butnor did not treat him, Claimant’s treating physicians referred him to Dr. Butnor for an opinion in this case, in light of her highly specialized and current knowledge in the field of pulmonary pathology and the area of asbestos-related lung diseases.
56. All four medical experts presented by Claimant are of the professional opinion that R. P. contracted asbestosis or asbestos-related pulmonary fibrosis as a result of his work-related exposure at the VAG asbestos mine, and that his death was the direct result of his work-related asbestosis or asbestos-related pulmonary fibrosis.
57. The most authoritative source on this subject is the 2004 Official Statement of the American Thoracic Society (ATS) entitled, “*Diagnosis and Initial Management of Non-Malignant Diseases Related to Asbestos*.” The ATS Official Statement delineates the criteria for the diagnosis of non-malignant lung disease related to asbestos.
58. Claimant met the criteria for asbestosis or asbestos-related pulmonary as evidenced by imaging studies, clinical signs of lung pathology, environmental exposure to asbestos for 34 years, and the exclusion of alternative diagnoses such as emphysema.
59. The only biopsy sample available in this case was too small to render a diagnosis. But given the affirmative findings listed above, a pathology specimen was not necessary for the diagnosis.
60. Ther one pathologic specimen was a transbronchial biopsy specimen taken in the course of a bronchoscopy performed by Dr. Jedlovsky in June, 2004 when bronchial washings and brushings were done. It was not intended to diagnosis any type of pulmonary fibrosis. In fact, it is generally accepted that a transbronchial biopsy is an insufficient specimen.

61. The diagnosis of idiopathic pulmonary fibrosis is a diagnosis of exclusion. It is appropriate only when all other diagnoses can be excluded. All four of Claimant's medical experts believe that the diagnosis of idiopathic pulmonary fibrosis is inappropriate in this case, because the diagnosis of asbestosis or asbestos-related pulmonary fibrosis cannot and should not be excluded. The diagnosis of asbestosis cannot be excluded under the criteria delineated in the ATS's Joint Statement regarding the diagnosis of non-malignant diseases related to asbestos, and also cannot be excluded using other commonly accepted medical knowledge and authorities.
62. Drs. Davis and Butnor, who have particular and current expertise with respect to asbestosis and its causes, effectively refuted Defendants' apparent claim that chrysotile asbestos fibers are "harmless." There is a large body of medical literature that authoritatively refutes any notion that chrysotile asbestos is harmless. The medical literature is clear that many, many workers from the asbestos mines in Thetford, Quebec, which is a so-called chrysotile asbestos mine, have developed numerous asbestos-related diseases. The VAG mine and the Thetford, Quebec mine are of the same geologic formation, and both contain primarily chrysotile asbestos fibers. In addition, both mines are contaminated with a very small percentage of tremolite asbestos, which is recognized in the medical literature as being more "pathogenic" than pure chrysotile asbestos.
63. Chrysotile asbestos clearly is hazardous to human health, although not as hazardous as other types of asbestos fibers. The fact remains, however, that chrysotile asbestos, especially when contaminated with tremolite asbestos, is a recognized health hazard, and causes asbestos-related lung diseases. The OSHA and MSHA regulations and proposed regulations, and the official comments, summaries, and background material given with respect to them (in the Federal Register) corroborate the human hazard posed by chrysotile asbestos, as well as other types of asbestos.
64. Furthermore, the clinical experience of Drs. Davis and Klein, who have treated numerous asbestosis and mesothelioma patients who are former employees of the VAG asbestos mine, corroborates the pathogenicity of the type of asbestos at the VAG mine.
65. According to Drs. Davis, Butnor and Klein, the absence of pleural disease does not preclude a diagnosis of asbestosis, and, further, the association between asbestosis and pleural disease is poor.

66. Pleural plaques or diffuse pleural thickening are found in a minority of patients with parenchymal pulmonary fibrosis caused by asbestos (asbestosis). Pleural plaques are a relatively rare finding even in heavily exposed asbestos workers. Therefore, the absence of pleural disease does not alter the likelihood that pulmonary fibrosis has been caused by asbestos in an appropriately exposed individual. The absence of pleural disease does not affect the apparent intensity or significance of historical exposure to asbestos. The presence of pleural disease supports the history that an asbestos exposure has occurred, but clearly correlates poorly with the cumulative intensity of exposure or its clinically significant consequences. Thus, in an individual with a clear history of asbestos exposure, as in the case of R. P. , the presence or absence of pleural plaques is largely irrelevant.
67. All four of Claimant's medical experts thoroughly reviewed the facts of the case, including Claimant's medical records, the various affidavits submitted by the former employees of the asbestos mine, and the deposition transcripts of the various fact witnesses who gave depositions.
68. All four of Claimant's medical experts also conducted a thorough survey of the medical literature relating to the issues in the case.
69. All four of Claimant's medical experts believe that R. P. more than satisfies the "latency period" for the diagnosis of asbestosis. Mr. P's latency period is also consistent with the ATS criteria for the diagnosis of asbestosis.
70. The progression of Claimant's asbestosis from the time that he first experienced symptoms in late 2003 to the time of his death on August 31, 2006, is consistent with a diagnosis of asbestosis. All four of Claimant's medical experts believe that the nearly three year period between the onset of first clinical symptoms to date of death is not only not inconsistent with a diagnosis of asbestosis, but also consistent with it.
71. Asbestosis is a cumulative disease, and, as such, Claimant's last month of asbestos exposure was as harmful as Claimant's first month of exposure, or any other month in between. All four of Claimant's medical experts believe that Claimant's exposure to asbestos between July 1, 1994 – August 4, 1994 was harmful and "injurious."

For Defendants:

72. Defendants presented expert opinions from pathologist Dr. John Craighead and radiologist Dr. Peter Barrett.
73. Dr. Craighead, a retired pathologist, used to practice in the Pathology Department at Fletcher Allen Health Care. He is board certified in pathology.

74. Before retiring from active practice 1996, Dr. Craighead became associated with asbestos-related companies in the defense of asbestos litigation. Since 1982, Dr. Craighead has consulted with the defense in asbestos-related litigation in thousands of cases. Ninety-nine percent (99%) of all of Dr. Craighead's testimony has been on behalf of the defense in litigated cases against asbestos-related companies.
75. Since 1982, Dr. Craighead has amassed at least \$6,000,000, as a result of his consultation work with or on behalf of asbestos-related companies.
76. Since retiring in 1996, 100% of Dr. Craighead's non-passive income has been generated from his consultation work with or on behalf of asbestos-related companies.
77. Although Dr. Craighead is published in the area, his published articles are not recent. His last peer-reviewed articles were published in the early 1990s. Dr. Craighead has not been a primary researcher and writer of any published peer review articles or other publications since the early 1990s.
78. Prior to publishing its Official Statement in 2004, the American Thoracic Society's previous guidelines for the diagnosis of non-malignant diseases related to asbestos were published in 1986. The ATS promulgated new guidelines/criteria in 2004 because of all of the voluminous medical literature, case studies, and other evidence that had come to bear on the subject of asbestos, and the human hazards it causes, since 1986.
79. Because Dr. Craighead's particular expertise is pathology, and because no pathologic diagnosis is warranted in this case (because there is no adequate pathologic specimen), Dr. Craighead carries little weight.
80. Dr. Craighead accepts that ATS's 2004 Official Statement regarding the diagnosis of asbestos-related diseases is authoritative, and that R. P. met all of the required ATS criteria for a diagnosis of asbestosis. Specifically, Dr. Craighead conceded that the current ATS criteria do not require any pathologic findings in order to make a diagnosis of asbestosis. Dr. Craighead agreed that a pathologic diagnosis is not required.
81. Dr. Craighead conceded that the diagnosis of idiopathic pulmonary fibrosis, under the applicable ATS guidelines, is a diagnosis of exclusion.
82. Dr. Craighead asserted that the "gold" standard for the diagnosis of asbestosis is a pathological examination of the lungs and demonstration of numerous asbestos bodies in the scarred lung parenchyma. No asbestos bodies were found in this case because the only specimen available was a transbronchial biopsy, which is a grossly inadequate basis for a diagnosis.
83. One year ago before this Department in the *J. M. v. Luzenac America* case, DOL Opinion No. 66-05 WC, Dr. Craighead opined that a transbronchial biopsy is an inadequate basis for a pathologic diagnosis, yet he relied on the transbronchial biopsy in this case to support his conclusion.

84. Dr. Craighead agreed that no pleural plaques need be found to arrive at a diagnosis of asbestosis. Although a finding of pleural plaques would be consistent with asbestosis, such a finding is not required.
85. Dr. Craighead agrees that R. P. had severe pulmonary fibrosis, even though the transbronchial biopsy revealed essentially normal tissue. That is, Dr. Craighead found no evidence of pulmonary fibrosis or any other evidence of lung disease on the transbronchial biopsy that he examined. Since Dr. Craighead concedes that Claimant had severe lung disease, his reliance on a normal transbronchial biopsy to rule out a diagnosis of asbestosis (which is a type of pulmonary fibrosis), is unpersuasive.
86. A major part of Dr. Craighead's analysis and conclusion is based upon the assumption that Mr. P had no structural changes or other signs of asbestosis when he was last exposed in 1994, or at any time before Claimant became symptomatic in 2004. His conclusion is also based upon the assumption that asbestosis does not commonly develop or progress after exposure to chrysotile fibers ceases. Dr. Craighead's opinions in that regard, however, are directly contrary to the opinions he expressed in 1982 in the "Special Report" of the Pneumoconiosis Committee of the College of American Pathologists and the National Institute for Occupational Safety and Health, which Dr. Craighead chaired. The "Special Report," entitled "*Asbestos-Associated Diseases*," and published in the *Archives of Pathology and Laboratory Medicine*, includes the statement that asbestosis is often a progressive disease "either with or without continued exposure." Exhibit 29e -- *Archives of Pathology and Laboratory Medicine*, Volume 106, No. 11, October 8, 1982, at p. 58].
87. Another basis heavily relied upon by Dr. Craighead for his diagnosis of idiopathic pulmonary fibrosis, is the claim that the "progression" of R. P. 's lung disease, from first symptoms in late 2003 to date of death on August 31, 2006, was too rapid for someone with asbestosis. However, in Dr. Craighead's 1982 monograph on asbestos-associated diseases, he and the other members of the Special Study Committee cited an example of an asbestosis case that had a more rapid rate of progression than in Mr. P's case.
88. Dr. Craighead agrees that pleural plaques are not a required finding for the diagnosis of asbestosis under the 2004 ATS guidelines. Dr. Craighead also agrees that pleural plaques can be present without asbestos exposure. In fact, Dr. Craighead is of the belief that chrysotile asbestos fibers generally do not cause pleural plaques. As such, he would not expect to find pleural plaques in this case.
89. Dr. Craighead stated unequivocally that he considered the amphibole asbestos types to be "unsafe" at concentrations of 0.1 ppm, but had no opinion on the question whether chrysotile contaminated with tremolite (an amphibole type) was similarly unsafe at 0.1 ppm.
90. Dr. Craighead opined that, given sufficient exposure to asbestos, the lungs are injured almost immediately at the cellular level.

91. Dr. Craighead agrees with Dr. Barrett's analysis that the radiographic studies performed on Mr. P in the spring of 2004 showed "dramatic change" and that Mr. P was already at the "intermediate" stage of the disease process at that point. Dr. Craighead has no way of knowing when, between 1995 and 2004, the structural changes occurred and progressed to the intermediate stage.
92. Defendants' second medical expert is Dr. Peter Barrett, a radiologist from Boston, Massachusetts, who is board certified in diagnostic radiology and nuclear medicine, and who is a "B" reader of plain chest x-rays.
93. Dr. Barrett reviews on average 75-150 chest x-rays per week and consults for the defense of asbestos-related companies. Dr. Barrett has earned millions of dollars consulting on behalf of asbestos-related companies. In the early 2000s, in one year alone, he earned approximately \$1,000,000 consulting for asbestos-related interests. Dr. Barrett has been testifying on behalf of asbestos-related companies since approximately 1996, and, in many years since then, his consulting fees in the defense of asbestos-related cases has been approximately 50% of his overall income.
94. Dr. Barrett also has a limited clinical practice, teaching responsibilities, and research activities. He has published only a few articles in unrelated areas, and he has never been published with respect to asbestos-related diseases or any other issues related to this case.
95. Dr. Barrett's "B" reader certification adds nothing of any particular value to this case. NIOSH's "B" reader certification program was instituted before the advent of more technologically superior diagnostic studies, such as CT scans and High Resolution CT scans. Given a choice between basing a diagnosis upon a plain chest x-ray versus an HR CT, no competent physician would rely on the plain chest x-ray. When CT scans and HR CT scans are available, as in Mr. P's case, reliance upon plain chest x-rays, which Dr. Klein, Dr. Craighead, and Dr. Barrett all testified have a significant false negative rate, would not be good practice.
96. In arriving at his conclusion that R. P. suffered from idiopathic pulmonary fibrosis and not asbestosis, Dr. Barrett relied on the fact that there was no finding of pleural plaques on any of the radiographic or radiologic studies. He concluded that the complete absence of pleural plaques on x-ray excluded the diagnosis of asbestosis in this case. In reemphasizing his total reliance on the absence of pleural plaques to render his diagnosis of IPF, Dr. Barrett opined: "In the absence of pleural plaques, interstitial fibrosis, as in this case, is almost certainly 'some type' of idiopathic pulmonary fibrosis."
97. Dr. Barrett agreed that the 2004 American Thoracic Society Official Statement regarding the diagnosis of asbestos-related diseases does not require a finding of pleural plaques to make a diagnosis of asbestosis. However he disregarded the ATS's criteria because he personally believes that the "new standards" are a "shameful" display of medicine gone bad.

98. Dr. Barrett's review of the facts in this case was inadequate and superficial. He was not provided with any of the affidavits submitted by employees, he did not review any of the deposition transcripts in this case, and he had not reviewed all of the medical records.
99. Dr. Barrett's factual conclusion that Mr. P "handled asbestos from time to time," is an inaccurate account of R. P.'s contact with and handling of asbestos over his 34 years of work at the asbestos mine. Dr. Barrett's other factual statement, that Mr. P "almost always used a respiratory" is also grossly inconsistent with the factual testimony of the various employees who testified.
100. In his report, Dr. Barrett summarily concluded that Mr. P, "has clinically, radiographically and pathologically not developed asbestosis." In arriving at those conclusions, Dr. Barrett disregarded the work-ups performed by and the conclusions reached by Mr. P's treating clinicians, who unanimously agreed that Mr. P satisfied all of the clinical criteria for a diagnosis of asbestosis. Dr. Barrett obviously also completely disregarded the determination of the American Thoracic Society, as well as the overwhelming body of medical literature in the field, that a pathologic diagnosis is not required for a diagnosis of asbestosis. Further, Dr. Barrett completely ignored the fact that "radiographically" Mr. P's radiographic and radiologic studies are entirely consistent with a history of asbestos exposure and with a diagnosis of asbestosis.
101. Dr. Barrett's unsupported conclusion that "Most people exposed to asbestos will have pleural plaques," and his unsupported conclusion that, "pleural plaques will be seen with 'minimal exposure'," was refuted by not only Claimant's medical experts, but also by Dr. Craighead. According to Dr. Craighead, it would be unusual for someone exposed to chrysotile asbestos to develop pleural plaques.
102. Dr. Barrett agreed that the VAG asbestos mine contained "a low level of tremolite asbestos." This is consistent with the testimony of Claimant's medical experts, and it refutes Dr. Craighead's wholly unsupported and non-documented assertion that the Vermont mine contains only "pure chrysotile" without any tremolite contamination.
103. Dr. Barrett agreed that a transbronchial biopsy is an inferior method of making a pathological diagnosis, and, generally, "is not the best way of diagnosing asbestosis."

CONCLUSIONS OF LAW

Is this claim time barred?

1. Defendant argues that the claim is barred by the Occupational Disease Act's five-year statute of repose. Under Vermont's Occupational Disease Act ("ODA"), the following definition is applicable:
 - a. A disease which is due to causes and conditions which are characteristic of and peculiar to a particular trade, occupation, process, or employment, and to which an employee is not ordinarily subjected or exposed outside of or away from his employment, and which arises out of and in the course of such employment.

Stoll v. Burlington Electric Dept., Op. No. 39-06WC (Sept. 22, 2006) (citing *Campbell v. Savelberg*, 139 Vt. 31 (1980)).
2. Asbestosis is clearly an occupational disease.
3. Effective July 1, 1999, the Legislature repealed the ODA, replacing it with a new statutory scheme under 21 V.S.A. § 660(b). The ODA contained a statute of repose which read: "Compensation shall not be payable for disablement by reason of occupational disease unless such disablement results within five years after the last injurious exposure to such disease in the employment..." 21 V.S.A. § 1006(a) (repealed). The applicable statute of limitations under 21 V.S.A. § 660(b) states: "A claim for occupational disease shall be made within two years of the date the occupational disease is reasonably discoverable and apparent." *Stoll*, supra.
4. The statute of limitations that applies to a particular cause of action is generally the one in effect when the cause of action accrued. *Id.* (citing *Cavanaugh v. Abbott Labs.*, 145 Vt. 516, 521 (1985)). Claimant's cause of action began to accrue for his alleged asbestosis, an occupational disease as defined by 21 V.S.A. § 1002, on the last day of injurious exposure.
5. The Vermont Supreme Court has held that the ODA's five-year statute of repose applies and bars claims for compensation for occupational diseases when the last injurious exposure to the disease causing agent – asbestos in this case – occurred more than five years before the statute's repeal on July 1, 1999, and the claim is brought after that five-year period. *Carter v. Fred's Plumbing & Heating, Inc.*, 174 Vt. 572 (2002) and *Murray v. Luzenac Corporation*, 175 VT 529 (2003). Under these cases, if the five-year statute of repose had already run prior to the enactment of the two-year "discovery rule" contained in 21 V.S.A. § 660(b), then the ODA's "last injurious exposure rule" applies.

6. In *Carter*, the claimant was exposed to asbestos over the course of his career as a plumber. His last injurious exposure to asbestos occurred in 1981 when the Occupational Disease Act was in effect, but he was not diagnosed with pulmonary asbestosis until June 4, 1999. Less than one month later, on July 1, 1999, the Occupational Disease Act's five-year statute of repose was repealed and replaced with 21 V.S.A. § 660(b)'s two-year "discovery rule" statute of limitations. The claimant in *Carter* filed his claim on July 7, 1999 and argued that the new two-year discovery rule should apply. 174 Vt. 572 at 572-73. The Court rejected the claimant's arguments and held that the claim was barred by the ODA's statute of repose stating, "[u]nfortunately for plaintiff, the line was drawn in a manner that does not afford him relief." *Id.* at 575. Because the statute of limitations that applies to a particular cause of action is generally the one in effect when the cause of action accrues – the date of claimant's last injurious exposure in 1981 – the claimant did not bring his claim in time. *Id.* at 574. In order to bring a timely claim, the ODA required the claimant to be diagnosed and file a claim within five years of the last injurious exposure.
7. Similarly, in *Murray* the Court had the opportunity to rule on the ODA's applicability. The specific issue in that case was whether § 660(b)'s discovery rule applied to claims where the last injurious exposure occurred prior to July 1, 1999, but the five-year time limitation under the ODA had not yet lapsed. *Murray*, 2003 VT 37, 50. In that case, the claimant was last injuriously exposed on September 15, 1994 so that the ODA's five-year time limitation would not run until September 15, 1999, two and a half months after § 660(b) was enacted. Under those circumstances, the Court held that because the statute of repose under the ODA had not run prior to § 660(b)'s enactment, the defendant did not have a vested right in the old statute and the claimant could take advantage of the new two-year limitations period and bring a claim within two years of discovering his disease. *Id.* The claimant was diagnosed with silicosis on June 1, 2000 and filed a workers' compensation claim on October 9, 2000. His claim was timely.
8. In this case, Claimant has established that he was employed by VAG between July 1, 1994 and August 4, 1994, and that he was injuriously exposed to asbestos during that time period. He was actively involved in the clean up of asbestos during that time. Although he wore a mask, I am not convinced by the defense position that he wore it at all times or that the device was truly protective. Therefore, as in *Murray*, the ODA's five-year time limitation had not yet lapsed at the time the discovery rule was adopted.
9. This conclusion is further supported by the testimony of Dr. Davis that Claimant was injuriously exposed to asbestos between July 1, 1994 and August 4, 1994 because the injury from asbestos is cumulative.
10. Claimant has proven that he was injuriously exposed to asbestos between July 1, 1994 and August 4, 1994. Therefore, the discovery rule of § 660 applies and this claim is timely.

Compensability

11. In workers' compensation cases, the claimant has the burden of establishing all facts essential to the rights asserted. *Goodwin v. Fairbanks*, 123 Vt. 161 (1962). The claimant must establish by sufficient, credible evidence the character and extent of the injury and disability, as well as the causal connection between the injury and the employment. *Egbert v. Book Press*, 144 Vt. 367 (1984).
12. There must be created in the mind of the trier of fact something more than a possibility, suspicion or surmise that the incidents complained of were the cause of the injury, and the inference from the facts proved must be the more probable hypothesis. *Burton v. Holden & Martin Lumber Co.*, 112 Vt. 17 (1941).
13. Where the causal connection between an accident and an injury is obscure, and a lay person would have no well-grounded opinion as to causation, expert medical testimony is necessary. *Lapan v. Berne's Inc.*, 137 Vt. 393 (1979).
14. In considering conflicting expert opinions, the Department has traditionally examined the following criteria: (1) the length of time the physician has provided care to the claimant; (2) the physician's qualifications, including the degree of professional training and experience; (3) the objective support for the opinion; and (4) the comprehensiveness of the respective examinations, including whether the expert had all relevant records. *J.M. v. Luzenac America*, Opin. No. 66-05 Wc (Nov. 23, 2005); *Miler v. Cornwall Orchards*, Opin. No. 20-97 Wc (Aug. 4, 1997); *Gardner v. Grand Union*, Opin. No. 24-97 Wc (Aug. 22, 1997).
15. Claimant's medical experts had the clear advantage with respect to all of the above listed criteria. Drs. Jedlovszky, Davis, and Klein were treating physicians. Drs. Jedlovszky and Davis personally cared for Mr. P, examined him, and followed his progress over a substantial period of time. Neither of Defendants' medical experts provided any care to Claimant. All of Claimant's medical experts have strong qualifications, and the qualifications of Drs. Davis, Klein and Butnor are impeccable and highly relevant to the particular issues in this case. With the exception of Dr. Jedlovszky, Claimant's medical experts are specialists and sub-specialists in areas of particular concern in this case. In addition, Claimant's medical experts cover all fields of medicine that are relevant to this case, pulmonology, radiology and pathology.
16. All of Claimant's medical experts are active clinicians who have highly professional, active clinical practices. In addition, Drs. Davis, Klein and Butnor combine their active clinical practices with substantial teaching and research responsibilities/activities.
17. Dr. Klein is a world-renowned chest/thoracic radiologist; Dr. Butnor is a sub-specialist in pulmonary pathology; and Dr. Davis sub-specializes in the area of dust-related pulmonary diseases. In connection with their practices, all three doctors routinely treat asbestosis patients and/or review radiologic studies and/or pathologic specimens pertaining to asbestosis patients.

18. With the exception of Dr. Jedlovszky, Drs. Davis, Klein and Butnor are all published in the area, and their peer reviewed publications are current. Because they are currently active practitioners, with active teaching and research responsibilities, they have kept current with the medical literature in the areas at issue in this case.
19. Defendants offered no medical expert testimony from any physician qualified in the area of pulmonology. Since pulmonologists are the clinicians who generally are the ones to render day-to-day diagnoses with respect to the active care and management of lung diseased patients, Defendants' failure to produce any opinions from any pulmonologists undermines the defense. Because the diagnosis of dust-related pulmonary diseases, such as asbestosis, involves the analysis of several criteria, including pathologic criteria, radiologic criteria, and clinical criteria (including exposure history), the pulmonologist is the one who pulls the information together. Defendants' medical experts are limited in their training to the specific areas of pathology and radiology.
20. Dr. Craighead, although board certified in pathology, has not actively practiced since 1996. He has not treated a patient since 1958, and has never treated an asbestosis patient. Although published in the area, his publications are not current, which is significant in light of the great amount of knowledge and medical literature that has been generated with respect to asbestos-related diseases over the past 15 years.
21. Although Dr. Barrett is a board certified radiologist, his clear and significant financial ties to the asbestos industry detract from his objectivity.
22. Dr. Barrett is not published in the area, and generally does little research and writing in any area.
23. Regarding the comprehensiveness of the respective examinations, and the experts' review of relevant data, all of Claimant's medical experts clearly have the advantage with respect to this criterion. All of Claimant's medical experts reviewed all of the medical records, the fact witness affidavits, the fact witness deposition testimony, the Defendants' experts' reports, and the bases for them, and all of the historical and current medical literature on the subject. Claimant's medical experts knew the details of R. P.'s work history and his exposure to asbestos dust at the VAG mine.
24. Conversely, Defendants' experts, in addition to never having examined Mr. P, clearly conducted an incomplete review of the medical records and the factual data in this case. Defendants' experts were not provided with any fact witness deposition testimony, were not provided with any affidavits submitted by fact witnesses, and were only given partial medical records to review. When the two defense experts were contacted by defense counsel in May and June, 2006, respectively, they were provided with some medical records. It was obvious from their trial testimony that they had not reviewed all of the medical records that had been provided to them. Further, they were never provided with any medical records generated after May and June, which would have included Mr. P's pulmonary function testing in July, 2006 and the medical care and treatment, including x-rays, that was given on August 30, 2006, the day before Mr. P died.

25. The opinions rendered by Claimant's four medical experts have solid objective bases. The current "gold" standard for the diagnosis of non-malignant asbestos-related diseases is the 2004 Official Statement of the American Thoracic Society. Claimant's medical experts objectively and rationally applied the criteria required by the 2004 ATS guidelines, and objectively and rationally applied the facts of this case to those criteria.
26. Claimant's medical experts established that there is an objective basis for a clinical diagnosis of asbestosis in this case, including respiratory crackles heard on multiple examinations, significant changes in Mr. P's ventilatory function, significant impairment of Mr. P's gas exchange, and clubbing of Mr. P's digits.
27. Claimant's medical experts also had objective radiologic findings upon which to base their opinions. The radiologic findings, including bilateral lower lung small irregular opacities, are entirely consistent with the diagnosis of asbestosis. Nothing on Mr. P's radiologic studies were inconsistent with a diagnosis of asbestosis. Although there are "markers" of asbestosis that may or may not be present in any given case, such as pleural plaques, the medical literature is clear that pleural plaques are by no means a required finding for a diagnosis of asbestosis.
28. Claimant's medical experts also objectively applied the ATS criterion relating to evidence of plausible causation. Specifically, they objectively applied Mr. P's significant occupational and environmental history of exposure to asbestos, including the required latency for asbestosis cases.
29. In order to arrive at the diagnosis of "idiopathic" pulmonary fibrosis, it was incumbent upon Defendants' medical experts to exclude all other plausible diagnoses, including a diagnosis of asbestosis. They failed to do so. The only alternative offered by Defendants' medical experts is essentially that the cause of Mr. P's pulmonary condition is unknown. The more probable hypothesis is that Claimant's many years of working closely and directly with asbestos fibers and dust caused his asbestosis. See *Burton v. Holden & Martin Lumber Co.*, 112 Vt. 17 (1941); *J.M. v. Luzenac America*, Opin. No. 66-05 WC (2005).

TOTAL DISABILITY BENEFITS

30. "Our law provides for two main types of benefits. Temporary benefits... are available during the recuperation period until the injured worker is as far restored as the permanent character of his injuries will permit. *Orvis v. Hutchins*, 123 Vt. 18 (1962). Thereafter, benefits are available for the permanent disability within the statutory limits. These benefits can be provided for partial or total permanent disability." *Fleury v. Kessel/Duff Constr. Co.* 148 Vt. 415, 417 (1987).

31. Pursuant to 21 V.S.A. § 642:

Where the injury causes total disability for work, during such disability...the employer shall pay the injured employee a weekly compensation equal to two thirds of the employee's average weekly wage, but not more than the maximum or less than the minimum..... However, in no event shall an employee's total weekly wage replacement benefits...exceed 90 percent of the employee's average weekly wage prior to applying any applicable cost of living adjustment.

32. The medical records and opinions offered during hearing prove that Claimant was totally disabled when he stopped working in July of 2004.

33. Claimant is correct that the claim for unpaid TTD survives the worker's death under *Dodge v. Precision Construction Products*, 203 Vt. 11, 175 Vt. 101 (2003); DOL State File No. R-07400, Opinion. No. 38-01 WC. In *Dodge*, the estate of a worker, who died prior to the adjudication of a contested claim for workers' compensation benefits, was permitted to pursue such a claim under the Vermont Survival Statute despite the worker's compensation insurer's argument that the claim abated at the worker's death. In *Dodge*, the Vermont Supreme Court affirmed the Department's decision granting benefits, holding that, "A claim for compensation benefits which accrued but were not paid at the time of the workman's death is a vested right which he has earned, and therefore it becomes an asset of his estate." Applying that legal principle, the Supreme Court ruled that, if the claimant's Estate administrators could prove that the claimant was eligible for workers' compensation benefits prior to the death, then the Estate would be entitled to the payments that the claimant would have received, "as well as payments under 21 V.S.A. § 639.

34. Accordingly, Mr. P's estate is entitled to temporary total disability benefits from July 2004 until his death in 2006.

35. Claimant argues, however, that his disability benefits fall, not under the temporary total disability provision of § 642, but under the permanent total disability provision of § 644. He argues further that he is entitled to a minimum of 330 weeks as specified in 21 V.S.A. § 645.

36. While it is true that Claimant was totally disabled from all regular, gainful employment when he stopped working in July 2004, it does not follow that he was entitled to a permanent total disability benefits from the onset of disability. Permanent benefits begin only after one has reached medical end result. That determination was never made in this case during Mr. P's life. Therefore, the disability benefits to which he was entitled were TTD, owed now to his estate.

37. His widow, however, has an independent claim for 330 weeks of benefits pursuant to § 635.

Work-Relatedness Of Mr. P's Death

38. Mr. P's death on August 31, 2006, was directly caused by Mr. P's work-related asbestosis. The asbestos-related pulmonary fibrosis, caused by Mr. P's long history of exposure at the VAG asbestos mine, caused Mr. P's death. Although Defendants contest whether Mr. P did in fact have asbestosis, as opposed to "idiopathic" pulmonary fibrosis, if Mr. P did, in fact, have asbestosis, Defendants do not contest that Mr. P's death was the direct result of that injury/disease process.

Death Benefits For R. P.'s Dependent

39. R. P.'s widow, H. P., was his only dependent at the time of his death on August 31, 2006. She is 67 years old, and receives social security benefits.

40. Under 21 V.S.A. § 635, Mr. P's widow is entitled to 330 weeks of compensation times the maximum weekly compensation "except when the compensation terminates by reason of death." The maximum weekly compensation as of the date of death, August 31, 2006, was \$974.00. Therefore, Mrs. P. is entitled to weekly benefits for 330 weeks from that date forward unless she dies before that time expires.

41. Mr. P's dependent widow has an independent right to the death benefits, separate and apart from Mr. P's estate's independent right to Mr. P's workers' compensation benefits that had accrued (and therefore vested) prior to the date of his death.

Funeral And Burial Expenses

42. Under 21 V.S.A. § 632, Mr. P's estate is entitled to \$5,500 for funeral and burial expenses.

Medical Benefits

43. Given that Mr. P's injury is work-related and compensable, he is entitled to all reasonable and necessary medical benefits associated with the care and treatment of his work-related pulmonary condition. Following this decision, Claimant and Defendants shall determine what medical services were provided to R. P. for his work-related injury, and Defendants shall pay those benefits as required by the Workers' Compensation Act.

Attorneys' Fees And Costs

44. Claimant's law firm worked 601 hours on this case and incurred costs in the amount of \$33,464.99.

45. Under 21 V.S.A. § 678(a), a prevailing claimant is entitled to a mandatory award of necessary costs and a discretionary award of reasonable attorneys' fees. Because Claimant prevailed on this case, he is awarded attorneys' fees of \$54,090 (601 hours x \$90). All costs are awarded (\$33,464.99) because they were reasonably necessary to pursue this case.
46. Claimant is entitled to interest on all unpaid compensation from the date payments were due until paid. This includes interest on unpaid permanency benefits from July 21, 2004, and on death benefits beginning from the date of Mr. P's death on August 31, 2006.
47. Factors considered in fashioning an award of attorneys' fees include the necessity of representation, difficulty of issues presented, time and effort expended clarity of time reports, agreement with the Claimant, skill of counsel, and whether fees are proportional to the efforts of counsel. *W.P. v. Madonna Corp.*, Opin. No. 18-06 Wc (2006); *Hojohn v. Howard Johnson's, Inc.*, Opin. No. 43A-04 Wc (2004); *Estate of Lyons v. American Flatbread*, Opin. No. 36A-03 (2003).
48. Considering the unique complexity of this case, the time and skilled effort expended by the attorney to establish the Claimant's right to compensation, clarity of time reports, and proportionality of the fees to the efforts of the attorney, Claimant's attorney has met the established criteria for determining the reasonableness of the fees and costs.

ORDER

Therefore, based on the foregoing findings of fact and conclusions of law, Defendant is ORDERED to pay benefits as outlined above for temporary total disability benefits, death benefits, medical benefits and attorney fees, costs and interest.

DATED at Montpelier, Vermont, this 23rd day of January 2007.

Patricia Moulton Powden
Commissioner

Appeal:

Within 30 days after copies of this opinion have been mailed, either party may appeal questions of fact or mixed questions of law and fact to a superior court or questions of law to the Vermont Supreme Court. 21 V.S.A. §§ 670, 672.

State File No. X-01358

<u>Number</u>	<u>Exhibit</u>
Claimant's	
1	R. P. 's "Dustfoe 77" respirator used at the VAG asbestos mine
2	R. P. 's medical records
3	All of R. P. 's chest x-rays and CT scans
4	R. P. 's death certificate
5	Dr. Gerald Davis' curriculum vitae
6	Dr. Jeffrey Klein's curriculum vitae
7	Dr. Veronika Jedlovszky's curriculum vitae
8	Dr. Kelly Butnor's curriculum vitae
9	Affidavit of Elvern Jones dated April 4, 2006
10	Affidavit of Lynwood Gray dated April 12, 2006
11	Affidavit of Wilfred Young, Jr. dated April 10, 2006
12	Affidavit of R. P. dated April 3, 2006
13	R. P. 's Notice of Termination of Employment with VAG, dated August 4, 1994
14	R. P. 's deposition transcript, including videotape
15	Elvern Jones' deposition transcript
16	Two pages of notes prepared by Dr. Gerald Davis, dated July 14, 2006, regarding the association, if any, between asbestosis and pleural disease
17	Dr. Jedlovszky's handwritten notes, dated April 29, 2006, responding to the questions posed in Attorney Cain's letter to Dr. Jedlovszky dated April 20, 2006, regarding permanent total disability
18	Exhibit 1 from Dr. Jeffrey Klein's deposition, which was taken on September 20, 2006, entitled "Radiologic manifestations of asbestos exposure"
19	Exhibit 2 from Dr. Jeffrey Klein's deposition, which was taken on September 20, 2006, relating to Dr. Klein's interpretations of R. P. 's various radiologic studies
20	Defendant VAG's Answers to Claimant's First Set of Interrogatories and Requests to Produce, including attached Exhibits 2 and 3
21	Letter dated June 29, 2006, from Attorney Sluka to Attorney Cain, together with all of the attached documents from the Pension Benefit Guaranty Corporation
22	Letter from Deborah Wilson, Senior Pension Administrator of the Pension Benefit Guaranty Corporation, to Attorney Cain, dated May 11, 2006
23	Attorney Cain's letter to Deborah Wilson of the Pension Benefit Guaranty Corporation dated May 9, 2006, together with the attachments
24	Letter from William Fitzgerald, Disclosure Officer for the Pension Benefit Guaranty Corporation, to Attorney Boxer, dated April 18, 2006
25	Various documents from the Vermont Department of Health, including Vernon Nelson's letter to Attorney Cain dated May 26, 2006; Mr. Nelson's letter to Attorney Sluka dated May 16, 2006; Mr. Nelson's letter to Attorney Sluka dated May 26, 2006; and all of the enclosures Mr. Nelson

<u>Number</u>	<u>Exhibit</u>
<u>Claimant's</u>	
	included with those letters
26	Memorandum dated June 16, 2006, with attached EPA, OSHA and MSHA regulations and proposed rules
27	Letter from Stephen Perkins of the U.S. E.P.A., dated July 14, 2006, together with all documents enclosed with the letter
28	R. P. 's employment records received from Northeast Ag Sales
29	<p>Various medical articles:</p> <p>a) American Thoracic Society's Diagnosis and Initial Management of Nonmalignant Diseases Related to Asbestos, adopted by the ATS on December 12, 2003;</p> <p>b) Article entitled "Fatal Asbestosis 50 Years After Brief High Intensity Exposure In a Vermiculite Expansion Plant" from American Journal of Respiratory Critical Care Medicine, Volume 165, Pages 1145-49 (2002);</p> <p>c) Article entitled "The Natural History of Asbestosis in Former Crocidolite Workers of Wittenoom Gorge," from American Review of Respiratory Diseases, Volume 133 at Pages 994-98 (1986);</p> <p>d) Article entitled "Progression of Irregular Opacities in Asbestos Miners," from British Journal of Industrial Medicine, Volume 46 at Pages 846-52 (1989);</p> <p>e) Asbestos-Associated Diseases published by the AMA's Archives of Pathology and Laboratory Medicine, Volume 106, No. 11 (1982);</p> <p>f) Article entitled "Follow-Up of Asbestosis Patients and Predictors for Radiographic Progression," International Archives of Occupational Environmental Health, Volume 71 at pages 465-71 (1998);</p> <p>g) Article entitled "Asbestosis, Pleural Plaques and Diffuse Pleural Thickening: Three Distinct Benign Responses to Asbestos Exposure," from European Respiratory Journal, Volume 11 at Pages 1021-27 (1998);</p> <p>h) Article entitled "Mineral-Induced Lung Disease in Modern Industry," from the Journal of Clinical Pulmonary Medicine, Volume 13, No. 2 (2006);</p> <p>i) American Thoracic Society article entitled "Idiopathic Pulmonary Fibrosis: Diagnosis and Treatment" from American Journal of Respiratory Critical Care Medicine, Volume 161, at Pages 646-64 (2000);</p> <p>j) Ovid Medical article search results obtained by Dr. Davis;</p> <p>k) Medical article: Akira M, Yamamoto S, Yokohama K, et al.</p>

<u>Number</u>	<u>Exhibit</u>
Claimant's	<p>Asbestosis: High-resolution CT-pathologic correlation. Radiology 1990; 176:389-394;</p> <p>l) Medical article: Aberle Dr., Gamsu G., Ray CS, et al. Asbestos-related pleural and parenchymal fibrosis: Detection with high-resolution CT. Radiology 1988; 166:729-734.</p> <p>m) Medical article: Kipen HM, Lilis R., Suzuki Y., Valciuskas JA, Selikoff IJ. Pulmonary fibrosis in asbestos insulation workers with lung cancer: a radiological and histopathological evaluation. Br J Ind Med 1998; 44:96-100.</p> <p>n) Medical article: Staple CA, Gamsu G., Ray CS, et al. High-resolution computed tomography and lung function in asbestos-exposed workers with normal chest radiographs. Am Rev Resp Dis 1989; 139(6): 1502-8;</p> <p>o) Medical article: Gamsu G., Salmon CJ, Warnock M., Blanc PD. CT quantification of interstitial fibrosis in patients with asbestosis: a comparison of two methods. AJR Am J Roentgenol 1995; 164:63-68;</p> <p>p) Article from Rocks & Minerals; Jul/Aug96, Vol. 71, Issue 4 entitled "<i>Minerals of the Quarries of Lowell-Eden, Vermont</i>";</p> <p>q) Article from Department of Pathology, Duke University and Durham VA Medical Center, titled "<i>Tremolite and Mesothelioma</i>";</p> <p>r) Article from Int. Arch Occup Environ Health (1998) entitled "<i>Follow-up of Asbestosis Patients and Predictors for Radiographic Progression</i>";</p> <p>s) Article from British Journal of Industrial Medicine (1989) entitled "<i>Progression of Irregular Opacities in Asbestos Miners</i>";</p> <p>t) Article from American Thoracic Society entitled "<i>Idiopathic Pulmonary Fibrosis: Diagnosis and Treatment</i>";</p> <p>u) Article from American Thoracic Society entitled "<i>Classification of the Idiopathic Interstitial Pneumonias</i>";</p> <p>v) Article entitled "<i>The Natural History of Asbestosis in Former Crocidolite Workers of Wittenoom Gorge</i>";</p> <p>w) Case Report entitled "<i>Fatal Asbestosis 50 Years After Brief High Intensity Exposure in a Vermiculite Expansion Plant</i>";</p>

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Claimant's	
	<p>x) Excerpt from Pathology of Occupational Lung Disease – “<i>Epidemiologic Features</i>” and “<i>Clinical and Radiographic Features</i>”;</p> <p>y) Excerpt from Pathology of Occupational Lung Disease, p. 326;</p> <p>z) Excerpt from T.A. Sporn and V.L. Roggli, pgs. 92, 97 and 102;</p> <p>aa) Excerpt from Cytopathology of Asbestos-Associated Diseases; and</p> <p>bb) NCBI abstract for a 1979 article entitled “<i>Radiographic Progression of Asbestosis: Preliminary Report</i>”;</p> <p>cc) McGill University editorial published in the American Journal of Respiratory and Critical Care Medicine, Volume 150 (1994) entitled “<i>Fiber Burden and Asbestos-related Lung Disease: Determinants of Dose-Response Relationships</i>”;</p> <p>dd) A. Gregor, R.W. Parkes, R. du Bois, and M. Turner-Warwick Department of (Thoracic) Medicine, University of London article entitled “<i>Radiographic Progression of Asbestosis: Preliminary Report</i>”;</p> <p>ee) Sharon H. Srebro, MD, and Victor L. Roggli, MD article published by American Journal of Industrial Medicine 26:809-819 (1994) entitled “<i>Asbestos-Related Disease Associated With Exposure to Asbestiform Tremolite</i>”;</p> <p>ff) Andrew Churg, Joanne L. Wright, Lisa Depaoli, and Barry Wiggs article entitled “<i>Mineralogic Correlates of Fibrosis in Chrysotile Miners and Millers</i>”;</p> <p>gg) Andrew Churg article published in Ann. Occup. Hyg., Vol. 38, No. 4 (1994) entitled “<i>Deposition and Clearance of Chrysotile Asbestos</i>”;</p> <p>hh) Andrew Churg, MD and Barry Wiggs, BSc article published by the American Journal of Industrial Medicine 9:143-152 (1986) entitled “<i>Fiber Size and Number in Workers Exposed to Processed Chrysotile Asbestos, Chrysotile Miners, and the General Population</i>”;</p> <p>ii) Andrew Churg, Joanne L. Wright, and Sverre Vedal article published in Am Rev Respir Dis, Vol. 148, pp. 25-31 (1993) entitled “<i>Fiber Burden and Patterns of Asbestos-related Disease in Chrysotile Miners and Millers</i>”;</p> <p>jj) Bruce W. Case, MD and Patrick Sebastien, Ph.D., McGill University article entitled “<i>Environmental and Occupational Exposures to</i></p>

<u>Number</u>	<u>Exhibit</u>
Claimant's	
	<p><i>Chrysotile Asbestos: A Comparative Microanalytic Study</i>";</p> <p>kk) Jill Ohar, MD, FCCP; David A. Sterling, PhD; Eugene Bleecker, MD, FCCP; and James Donohue, MD, FCCP article downloaded from www.chestjournal.org at Dana Medical Library, University of Vermont on September 28, 2006 entitled "<i>Changing Patterns in Asbestos-Induced Lung Disease</i>";</p> <p>ll) Murray M. Finkelstein, PhD, MDCM, and Andre Dufresne, PhD article published by American Journal of Industrial Medicine 35:401-412 (1999) entitled "<i>Inferences on the Kinetics of Asbestos Deposition and Clearance Among Chrysotile Miners and Millers</i>";</p> <p>mm) Philip J. Landrigan, William J. Nicholson, Yasunosuke Suzuki and Joseph Ladou articles published in Industrial Health (1999) entitled "<i>The Hazards of Chrysotile Asbestos: A Critical Review</i>";</p> <p>nn) Steven B. Markowitz, Alfredo Morabia, Ruth Lilis, Albert Miller, William J. Nicholson and Stephen Levin article published in Am J Respir Crit Care Med, Vol. 156, pp. 101-108 (1997) entitled "<i>Clinical Predictors of Mortality from Asbestosis in the North American Insulator Cohort, 1981 to 1991</i>";</p> <p>oo) G. Berry article published by the British Journal of Industrial Medicine (1981) entitled "<i>Mortality of workers certified by pneumoconiosis medical panels as having asbestosis</i>";</p> <p>pp) Matti S. Huuskonen, MD article published by Scand. J. work environ. & health 4 (1978) entitled "<i>Clinical features, mortality and survival of patients with asbestosis</i>";</p> <p>qq) Patrick G. Coin, Alvaro R. Osornio-Vargas, Victor L. Roggli, and Arnold R. Brody article published in Am J Respir Crit Care Med, Vol. 154 (1996) entitled "<i>Pulmonary Fibrogenesis after Three Consecutive Inhalation Exposures to Chrysotile Asbestos</i>";</p> <p>rr) Andrew Churg and Joanne L. Wright article published in Environmental Health Perspectives 102 (Suppl. 5) (1994) entitled "<i>Persistence of Natural Mineral Fibers in Human Lungs: An Overview</i>";</p> <p>ss) Patrick G. Coin, Victor L. Roggli, and Arnold R. Brody article published in Environmental Health Perspectives 102 (1994) entitled "<i>Persistence of Long, Thin Chrysotile Asbestos Fibers in the Lungs of Rats</i>";</p> <p>tt) Francis H Y Green, Russell Harley, Val Vallyathan, Rochelle</p>

<u>Number</u>	<u>Exhibit</u>
Claimant's	<p>Althouse, Gordon Fick, John Dement, Ravi Mitha, Fred Pooly article published in Occupational and Environmental Medicine Vol. 54 (1997) entitled “<i>Exposure and mineralogical correlates of pulmonary fibrosis in chrysotile asbestos workers</i>”;</p> <p>uu) Patrick G. Coin, Victor L. Roggli, and Arnold R. Brody article published in Environmental Research 58 (1992) entitled “<i>Deposition, Clearance, and Translocation of Chrysotile Asbestos from Peripheral and Central Regions of the Rat Lung</i>”;</p> <p>vv) David M. Bernstein, Jörg Chevalier, Paul Smith article as published in Inhalation Toxicology, 17 (2005) entitled “<i>Comparison of Calidria Chrysotile Asbestos to Pure Tremolite: Final Results of the Inhalation Biopersistence and Histopathology Examination Following Short-Term Exposure</i>”;</p> <p>ww) David M. Bernstein, Rick Rogers, Paul Smith article as published in Inhalation Toxicology, 17 (2005) entitled “<i>The Biopersistence of Canadian Chrysotile Asbestos Following Inhalation: Final Results Through 1 Year After Cessation of Exposure</i>”;</p> <p>xx) Victor L. Roggli, MD, Anupama Sharma, MD, Kelly J. Butnor, MD, Thomas Sporn, MD and Robin T. Vollmer, MD article as published in Ultrastructural Pathology, 26 (2002) entitled “<i>Malignant Mesothelioma and Occupational Exposure to Asbestos: A Clinicopathological Correction of 1445 Cases</i>”;</p> <p>yy) J.R. Viallat, MD, C. Boutin, MD, J.F. Pietri, MD, J. Fondarai, PhD, Hôpital Michet Lévy article as published in Archives of Environmental Health Vol. 38 (1983) entitled “<i>Late Progression of Radiographic Changes in Canari Chrysotile Mine and Mill Exworkers</i>”;</p> <p>zz) Victor I. Roggli and Arnold R. Brody article as published in Experimental Lung Research 7 (1984) entitled “<i>Changes in Numbers and Dimensions of Chrysotile Asbestos Fibers in Lungs of Rats Following Short-Term Exposure</i>”;</p> <p>A) Excerpt from Thurlbeck’s Pathology of the Lung, Third Edition, pp. 826 and 829;</p> <p>B) Excerpt from Spencer’s Pathology of the Lung, Fifth Edition, pp. 492 and 498;</p> <p>C) Excerpt from Robbins and Cotran’s Pathologic Basis of Disease, 7th Edition, p. 737;</p>

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Claimant's	
	D) Excerpt from Fraser Paré's Synopsis of Diseases of the Chest, Second Edition, pp. 726 and 737; and
	E) Excerpt from Atlas Nontumor Pathology – Non-Neoplastic Disorders of the Lower Respiratory Tract, pp. 822, 855 and 856.

**STATE OF VERMONT
DEPARTMENT OF LABOR
WORKERS' COMPENSATION HEARING**

DEFENDANT'S EXHIBIT LIST

State File No: X-01358

Defendants

- A Respirator
- B Jedlowsky note 2/23/06
- C Cain Letter
- D Jedlowsky 2/23/06
- E Dr. Barrett's CV
- F - I Exhibits F through I are unused
- J Dr. Craighead's CV
- K - O Dr. Craighead's drawings – (Originals produced to Department of Labor)
- P Article by A. Churg, entitled "*Nonneoplastic Diseases Caused by Asbestos*"
- Q Article by V. L. Roggli, entitled "*Analysis of Tissue Mineral Fiber Content*"
- R Article by E. A., Gaensler, entitled "*Idiopathic Pulmonary Fibrosis in Asbestos-Exposed Workers*"
- S Article by P. J. Jederlinic, entitled "*Pulmonary Fibrosis in Aluminum Oxide Workers*"
- T Article by E. A. Gaensler, entitled "*Thoracic Surgical Problems in Asbestos-Related Disorders*"
- U Article by D.A. Edelman, entitled "*Asbestos Exposure, Pleural Plaques and Risk of Lung Cancer*"
- V Article by D. E. Fletcher, entitled "*A Mortality Study of Shipyard Workers with Pleural Plaques*"
- W Article by D. E. Fletcher, entitled "*The Early Radiological Changes in Pulmonary and Pleural Asbestosis*"
- X Article by P. Harber, entitled "*Asbestosis: Diagnostic Dilution*"
- Y Article by M. Remy-Jardin, entitled "*Morphologic Effects of Cigarette Smoking on Airways and Pulmonary Parenchyma in Healthy Adult Volunteers: CT Evaluation and Correlation with Pulmonary Function Tests*"
- Z Article by W. Weiss, entitled "*Cigarette Smoking and Small Irregular Opacities*"

- AA Article by G. F. Rubino, entitled “*Radiologic Changes After Cessation of Exposure Among Chrysotile Asbestos Miners in Italy*”
- BB Article by M. L. Warnock, entitled “*Numbers and Types of Asbestos Fibers in Subjects with Pleural Plaques*”
- CC Article by M. M. Abdelaziz, entitled “*Treatment of Idiopathic Pulmonary Fibrosis: Is there anything new?*”
- DD Article by A. G. Nicholson, entitled “*The Prognostic Significance of the Histologic Pattern of Interstitial Pneumonia in Patients Presenting with the Clinical Entity of Cryptogenic Fibrosing Alveolitis*”
- EE Article by E. R. Parra, entitled “*Heterogeneous Remodeling of Lung Vessels in Idiopathic Pulmonary Fibrosis*”
- FF Article by R. M. Strieter, entitled “*Pathogenesis and Natural History of Usual Interstitial Pneumonia*: The Whole Story or the Last Chapter of a Long Novel*”
- GG Article by E. S. White, entitled “*Pathogenetic Mechanisms in Usual Interstitial Pneumonia/Idiopathic Pulmonary Fibrosis*”
- HH Article by A. Xaubet, entitled “*Is it Necessary to Treat all Patients with Idiopathic Pulmonary Fibrosis?*”
- II Article by T. Nagao, entitled “*Serial Evaluation of High-Resolution Computed Tomography Findings in Patients with Idiopathic Pulmonary Fibrosis in Usual Interstitial Pneumonia*”
- JJ Article by D. A. Lynch, entitled “*High-Resolution CT of Idiopathic Interstitial Pneumonias*”
- KK Article by K. Grijm, entitled “*Semiquantitative 67Ga Scintigraphy as an Indicator of Response to and Prognosis After Corticosteroid Treatment in Idiopathic Interstitial Pneumonia*”
- LL Article by S. Kanoh, entitled “*Exhaled Ethane*: An In Vivo Biomarker of Lipid Peroxidation in Interstitial Lung Disease*”
- MM Article by L. Vuokko, entitled “*Oxidative Stress in Pulmonary Fibrosis*”
- NN Article by K. O. Leslie, entitled “*Historical Perspective*: A Pathologic Approach to the Classification of Idiopathic Interstitial Pneumonias*”
- OO Article by A. Churg, entitled “*Asbestos Fibers and Pleural Plaques in a General Autopsy Population*”
- PP Article by S. L. Wain, entitled “*Parietal Pleural Plaques, Asbestos Bodies, and Neoplasia**”
- QQ Article by V. L. Roggli, entitled “*Malignant Mesothelioma and Occupational Exposure to Asbestos: A Clinicopathological Correlation of 1445 Cases*”
- RR Article by J. Ohar, entitled “*Changing Patterns in Asbestos-Induced Lung Disease**”
- SS Article by G. W. Gibbs, entitled “*Etiology of Pleural Calcification: A Study of Quebec Chrysotile Asbestos Miners and Millers*”
- TT Article by P. A. Gevenois, entitled “*Asbestosis, Pleural Plaques and Diffuse Pleural Thickening: Three Distinct Benign Responses to Asbestos Exposure*”
- UU Article by V. L. Kinnula, entitled “*Oxidative Stress in Pulmonary Fibrosis*”
- VV Article by J. S. M. Doubkova, entitled “*Idiopaticka Plicni Fibroza*”
- WW Article by J. R. Viallat, entitled “*Late Progression of Radiographic Changes in Canari Chrysotile Mine and Mill Exworkers*”

XX	Article by S. B. Markowitz, entitled “ <i>Clinical Predictors of Mortality from Asbestosis in the North American Insulator Cohort, 1981 to 1991</i> ”
YY	Article by A. Gregor, entitled “ <i>Radiographic Progression of Asbestosis: Preliminary Report</i> ”
ZZ	Article by D. M. Bernstein, entitled “ <i>The Biopersistence of Canadian Chrysotile Asbestos Following Inhalation: Final Results Through 1 Year After Cessation of Exposure</i> ”
AAA	Article by D. M. Bernstein, entitled “ <i>Comparison of Calidria Chrysotile Asbestos to Pure Tremolite: Final Results of the Inhalation Biopersistence and Histopathology Examination Following Short-Term Exposure</i> ”
BBB	Article by R. S. Wright, entitled “ <i>Fatal Asbestosis 50 Years after Brief High Intensity Exposure in a Vermiculite Expansion Plant</i> ”
CCC	Article by W. Cookson, entitled “ <i>The Natural History of Asbestosis in Former Crocidolite Workers of Wittenoom Gorge</i> ”
DDD	Article by A. Churg, entitled “ <i>Fiber Burden and Patterns of Asbestos-related Disease in Chrysotile Miners and Millers</i> ”
EEE	Article by A. Churg, entitled “ <i>Persistence of Natural Mineral Fibers in Human Lungs: An Overview</i> ”
FFF	Article by P. G. Coin, entitled “ <i>Persistence of Long, Thin Chrysotile Asbestos Fibers in the Lungs of Rats</i> ”
GGG	Article by J. N. Gitlin, entitled “ <i>Comparison of “B” Readers’ Interpretations of Chest Radiographs for Asbestos Related Changes</i> ”
HHH	Article by M. L. Janower, entitled “ <i>“B” Readers’ Radiographic Interpretations in Asbestos Litigation: Is Something Rotten in the Courtroom?</i> ”
III	Article by A. Churg, entitled “ <i>Mineralogic Correlates of Fibrosis in Chrysotile Miners and Millers</i> ”
JJJ	Article by A. Churg, entitled “ <i>Deposition and Clearance of Chrysotile Asbestos</i> ”
KKK	Article by A. Churg, entitled “ <i>Fiber Size and Number in Workers Exposed to Processed Chrysotile Asbestos, Chrysotile Miners, and the General Population</i> ”
LLL	Article by B. W. Case, entitled “ <i>Environmental and Occupational Exposures to Chrysotile Asbestos: A Comparative Microanalytic Study</i> ”
MMM	Article by M. M. Finkelstein, entitled “ <i>Inferences on the Kinetics of Asbestos Deposition and Clearance Among Chrysotile Miners and Millers</i> ”
NNN	Article by P. J. Landrigan, entitled “ <i>The Hazards of Chrysotile Asbestos: A Critical Review</i> ”
OOO	Article by G. Berry, entitled “ <i>Mortality of Workers Certified by Pneumoconiosis Medical Panels as Having Asbestosis</i> ”
PPP	Article by M. S. Huuskonen, entitled “ <i>Clinical Features, Mortality and Survival of Patients with Asbestosis</i> ”
QQQ	Article by P. G. Coin, entitled “ <i>Pulmonary Fibrogenesis after Three Consecutive Inhalation Exposures to Chrysotile Asbestos</i> ”
RRR	Article by G. K. Sluis-Cremer, entitled “ <i>Progression of Irregular Opacities in Asbestos Miners</i> ”
SSS	Article by F. H. Y. Green, entitled “ <i>Exposure and Mineralogical Correlates of Pulmonary Fibrosis in Chrysotile Asbestos Workers</i> ”
TTT	Article by S. H. Srebro, entitled “ <i>Asbestos-Related Disease Associated with Exposure to Asbestiform Tremolite</i> ”

UUU	Article by P. G. Coin, entitled “ <i>Deposition, Clearance, and Translocation of Chrysotile Asbestos from Peripheral and Central Regions of the Rat Lung</i> ”
VVV	Article by V. L. Roggli, entitled “ <i>Changes in Numbers and Dimensions of Chrysotile Asbestos Fibers in Lungs of Rats Following Short-Term Exposure</i> ”
WWW	Article by S. Nagai, entitled “ <i>Smoking-related Interstitial Lung Diseases</i> ”
XXX	Article by N. Fujimura, entitled “ <i>Pathology and Pathophysiology of Pneumoconiosis</i> ”
YYY	Article by C. G. Ohlson, entitled “ <i>Ventilatory Decrements in Former Asbestos Cement Workers: A Four Year Follow Up</i> ”
ZZZ	Article by E. A. Gaensler, entitled “ <i>Progression of Asbestosis</i> ”
AAAA	Article by M. J. Gardner, entitled “ <i>Follow up Study of Workers Manufacturing Chrysotile Asbestos Cement Products</i> ”
BBBB	Article by D. Egilman, entitled “ <i>Exposing the “Myth” of ABC, “Anything But Chrysotile”: A Critique of the Canadian Asbestos Mining Industry and McGill University Chrysotile Studies</i> ” Reference Book entitled “ <i>Pathology of Asbestos-Associated Diseases</i> ”, 2 nd Edition
CCCC	Reference Book entitled “ <i>Pathology of Asbestos-Associated Diseases</i> ”, 2 nd Edition
DDDD	Reference Book entitled “ <i>Pathology of Occupational Lung Disease</i> ”, 2 nd Edition