IN THE SUPREME COURT OF APPEALS OF WEST VIRGINIA

September 2009 Term

FILED
November 19, 2009
released at 10:00 a.m.
RORY L. PERRY II, CLERK
SUPREME COURT OF APPEALS
OF WEST VIRGINIA

No. 34473

ROBERT H. CASDORPH, JR.,
Appellant,

V.

WEST VIRGINIA OFFICE INSURANCE COMMISSIONER
AND
WEST VIRGINIA STATE POLICE,
Appellees

Appeal from the Workers' Compensation Board of Review
Appeal No. 2036685
Claim No. 2003012501

REVERSED AND REMANDED, WITH DIRECTIONS

Submitted: October 6, 2009
Filed: November 19, 2009

Dean R. Hartley, Esq.
Hartley & O'Brien, PLLC
Wheeling, West Virginia

E. William Harvit, Esq.
Harvit & Schwartz
Charleston, West Virginia
Attorneys for Appellant

Jon H. Snyder, Esq.
Workers' Compensation Litigation Unit
Charleston, West Virginia
Attorney for Appellee

The Opinion of the Court was delivered PER CURIAM.

SYLLABUS BY THE COURT

1. "When it appears from the proof upon which the Workmen's Compensation Appeal Board acted that its finding was plainly wrong an order reflecting that finding will be reversed and set aside by this Court." Syllabus Point 5, *Bragg v. State Workmen's Comp. Comm'r*, 152 W. Va. 706, 166 S.E.2d 162 (1969).

2. **"**In order for a claim to be held compensable under the Workmen's Compensation Act, three elements must coexist: (1) a personal injury (2) received in the course of employment and (3) resulting from that employment." Syllabus Point 1, *Barnett v. State Workmen's Compensation Commissioner*, 153 W. Va. 796, 172 S.E.2d 698 (1970).

3. "In determining whether an injury resulted from a claimant's employment, a causal connection between the injury and employment must be shown to have existed." Syllabus Point 3, *Emmel v. State Compensation Director*, 150 W. Va. 277, 145 S.E.2d 29 (1965).

4. "If studies and research clearly link a disease to a particular hazard of a workplace, a prima facie case of causation arises upon a showing that the claimant was exposed to a hazard and is suffering from the disease to which it is connected." Syllabus

Point 5, *Powell v. State Workmen's Compensation Commissioner*, 166 W. Va. 327, 273 S.E.2d 832 (1980).

5. "W. Va. Code §23-4-1 does not require a claimant to prove that the conditions of his employment were the exclusive or sole cause of the disease nor does it require the claimant to show that the disease is peculiar to one industry, work environment, or occupation." Syllabus Point 3, *Powell v. State Workmen's Compensation Commissioner*, 166 W. Va. 327, 273 S.E.2d 832 (1980).

PER CURIAM:

This case is before this Court upon the appeal of Robert H. Casdorph, Jr.[1] (hereinafter "Appellant") from a final order of the Workers' Compensation Board of Review (hereinafter "BOR")[2] entered December 20, 2006. In that order, the BOR reversed the decision of the Office of Judges (hereinafter "OOJ") which had reversed the decision of the Workers' Compensation Commission (hereinafter "Commission").[3] The Commission initially rejected the Appellant's claim finding that his condition, chronic myelogenous leukemia (hereinafter "CML"), was not compensable as an occupational disease. After the OOJ found that the Appellant's claim should be held compensable, the BOR reversed the decision of the OOJ finding that the expert testimony relied upon by the OOJ was insufficient to establish that Appellant had an occupational disease within the meaning of

---

[1] Mr. Casdorph is deceased. He died on April 9, 2004, as a result of chronic myelogenous leukemia, the condition which is the subject of this claim on appeal.

[2] This Court notes that the BOR was previously identified as the Workers' Compensation Appeal Board, with the change in name becoming effective on January 31, 2004. *See* W. Va. Code §23-5-11 (2005); *State ex rel. Darling v. McGraw*, 220 W. Va. 322, 324, n. 2, 647 S.E.2d 758, 760 n. 2 (2007).

[3] Pursuant to W. Va. Code §23-2C-1 to -24, the Workers' Compensation Commission was abolished on January 1, 2006, and was succeeded by BrickStreet Mutual Insurance Company, a private employer mutual insurance company. All workers' compensation claims with dates of injury or last exposure before July 1, 2005, are payable from what is statutorily referred to as the "Old Fund" which is regulated by the Insurance Commissioner, the real party-in-interest here. The use of "Commission" in this opinion refers to both the predecessor, the Workers' Compensation Commission, and the successor, the Insurance Commissioner.

West Virginia Code §23-4-1(f).[4] In this appeal, the Appellant contends that the BOR erred by reversing the decision of the OOJ, and he maintains that his claim should have been held compensable. Upon review of the parties arguments, the record on appeal, and the pertinent authorities, we reverse the decision of the BOR and remand the case with directions to reinstate the decision of the OOJ, holding the Appellant's claim compensable as an occupational disease.

I.

FACTUAL AND PROCEDURAL HISTORY

Appellant worked as a mechanic for the West Virginia State Police for

---

[4] West Virginia Code §23-4-1 indicates that claims may be filed for diseases that were incurred in the course of and resulting from employment. No ordinary disease of life to which the general public is exposed outside of employment is compensable unless it is apparent

> "(1) that there is a direct causal connection between the conditions under which work is performed and the occupational diseased, (2) that it can be seen to have followed as a natural incident of the work as a result of the exposure occasioned by the nature of the employment, (3) that it can be fairly traced to the employment as the proximate cause, (4) that it does not come from a hazard to which workmen would have been equally exposed outside of the employment, (5) that it is incidental to the character of the business and not independent of the relation of an employer and employee, and (6) that it must appear to have had its origin in the risk connected with the employment and to have flowed from that source as a natural consequence, though it need not have been foreseen or expected before its contraction."

W. Va. Code §23-4-1(f)(2003).

approximately twenty-two years.[5] As a mechanic, Appellant worked on and replaced brakes and brake rotors, transmissions, replaced air filters, greased bearings, replaced fuel filters, changed tires, replaced batteries, and changed oil and oil filters, among other mechanical duties. In performing such duties, he often used petroleum-based products to degrease and lubricate parts and he had repeated daily dermal contact with and inhalation of gasoline. Appellant's exposure was particularly significant when he cleaned and reassembled vehicle parts without gloves, when gasoline and degreasers dripped and sprayed onto his exposed skin and clothing, and when he ingested gasoline as a result of siphoning gas from and to vehicle fuel tanks by mouth while performing fuel pump repairs. His primary work area was very small with no exhaust fan.

Appellant testified that when he worked around gasoline, he would get dizzy, lightheaded and "a little bit sick" approximately three of five work days. Appellant's wife testified that the Appellant would often mention to her that he felt dizzy from the fumes at work. She also testified that two to three nights a week, Appellant would feel nauseous and dizzy when he came home from work, and thus, would delay eating dinner. She also

[5] Appellant began working for the West Virginia State Police in January, 1981. Between 1981 and approximately 1982, Appellant worked primarily as a janitor. However, in approximately 1982, he began working as a mechanic and he continued in this capacity until his medical retirement in 2003, at the age of 49. Before working for the West Virginia State Police, Appellant worked as a mechanic's helper at a gas station answering phones, picking up parts, doing oil changes, working on tires, and occasionally pumping gas. His prior work history also included a brief period of welding and then primarily as a gas station attendant pumping gas. Appellant has never smoked cigarettes or cigars.

testified that when he came home from work, Appellant had a terrible odor that smelled like paint thinner on his clothing.

In January, 2002, Appellant developed a severe cough. He was evaluated by his family physician, Brad Henry, M.D., who discovered that his white blood count was abnormally high. Appellant was referred to James Frame, M.D., who ordered a bone marrow core biopsy which revealed that Appellant had CML in an accelerated phase. He was initially treated with the medication Gleevec. Between January and June, 2002, Appellant was seen numerous times by Dr. Frame for clinical evaluation and laboratory studies. A June 12, 2002, bone marrow test showed that Appellant was in Gleevec induced remission from CML.

Thereafter, in July, 2002, Appellant was evaluated by Dr. Richard Shadduck, Director of the Western Pennsylvania Cancer Institute. Appellant continued to be evaluated by Dr. Frame and Dr. Shadduck and he underwent several bone marrow procedures. In March, 2003, Appellant's bone marrow studies showed that his CML had returned. At that time, he was admitted to Western Pennsylvania Hospital for induction of chemotherapy. Continuing to be evaluated and treated by Dr. Shadduck, Appellant was admitted to Western Pennsylvania Hospital for a bone marrow transplant by an unrelated donor in July 2003.

In March 2004, Appellant was admitted to the hospital for nausea and vomiting. A CT scan revealed nodules in the lung consistent with pulmonary aspergillosis and on March 18, 2004, he developed a rash and sinusitis. Appellant never recovered and he died on April 9, 2004, at the age of 50. An autopsy revealed that the claimant had adult respiratory distress syndrome and it was noted that the claimant died a respiratory death.

Prior to his death, Appellant had filed a Workers' Compensation claim in April, 2003, indicating that he had suffered from CML has a result of exposure to benzene while working as a mechanic for the State Police. The Division's Office of Medical Management reviewed the claim record and recommended the claim be rejected. In a report dated June 23, 2003, Mohammed I. Ranavaya, M.D., M.S., FRCPI, CIME, FAADEP, stated:

> In summary, this gentleman has a very serious blood disorder, however, based on the evidence in record and the Peer Reviewed Scientific Literature, it cannot be causally connected to the nebulous claim of exposure to aromatic compounds in this job as a mechanic for the West Virginia Division of Public Safety. To accept this claim as an occupational disease, in my opinion, would simply be cost shifting of a naturally occurring disease process to a Workers' Compensation Insurance claim.

Based upon Dr. Ranavaya's report, the Commission entered an order rejecting his claim on June 30, 2003, finding that he had failed to meet his burden of proof establishing that the disease was contracted in the course of or resulting from employment. The Commission found that the condition was an ordinary disease of life and that he had

been aware of his condition for more than three years prior to filing his claim. Appellant timely protested that order.

The parties submitted various depositions, scientific and medical articles and medical reports to the OOJ for consideration. On August 4, 2005, the OOJ reversed the decision of the Commission, finding, in part, that:

> The medical issue is extremely complex and has been extremely well developed through battling highly paid, highly qualified medical experts. It is found that the scientific community and medical profession in general accept that abnormally high exposure to benzene can cause AML. The more difficult question is whether or not it can significantly contribute to CML. It is obvious that the medical profession and the scientific community does not accept that the relationship between benzene exposure and CML has been proven to the extent that it has with AML. The claimant has quoted numerous case studies primarily from China, France and Australia that demonstrate that there is a statistical significance between individuals who are exposed to high concentrations of benzene and the disease CML. This record does contain qualified experts that do not believe these case studies are persuasive and also criticize them for methodology and the size of the study.
>
> This is an extremely close case. Dr. Shadduck the treating physician was candid in admitting that until recently he did not believe that CML had a known cause. Based on the research he did specifically due to the claimant's condition he arrived at the opinion that based upon the benzene exposure of the claimant that it was probable that this was a significant factor in his disease. Dr. Shadduck admitted the benzene exposure was not a factor to his knowledge in any other patient he treated. However, Dr. Shadduck's testimony is found significant in that his testimony was found to be well reasoned and he was also willing to concede that his opinion could not definitely be proven and that the evidence certainly was not overwhelming but that he believed it was a reasonable hypothesis from all the information that he had concerning the disease and the claimant.

. . .

Following the OOJ's decision, the Commission appealed. The BOR reversed the decision of the OOJ by order dated December 20, 2006. The BOR concluded:

> The Administrative Law Judge noted that the medical issue was complex and [found] that this claim is an extremely close case regarding whether or not the claimant's occupational exposure caused his cancer, chronic myelogenous leukemia, or whether it was an ordinary disease of life. Numerous experts testified in this claim. The Administrative Law Judge relied primarily upon the opinion of the claimant's treating physician, Dr. Richard Shadduck, who completed the claimant's application for benefits. The Administrative Law Judge relied upon the deposition testimony of Dr. Shadduck of May 4, 2004, stating that the claimant's exposure to benzene and other hydrocarbons were "probably causative" in the development of the claimant's disease. After researching all the medical evidence of record, the Board finds that Dr. Shadduck's opinion is insufficient to establish that the claimant had an occupational disease within the meaning of West Virginia Code 23-4-1. The Board concludes that the elements of West Virginia Code 23-4-1(f), which must be satisfied to establish an occupational disease, have not been met in this claim.
>
> . . .

It is from the BOR's order that Appellant now appeals.

II.

STANDARD OF REVIEW

Because this case comes before this Court as an appeal from an order of the BOR which reversed the decision of the OOJ, our review is guided by the criteria set forth

in W. Va. Code §23-5-15 (2003)[6], which provides that:

> (b) [i]n reviewing a decision of the board of review, the supreme court of appeals shall consider the record provided by the board and give deference to the board's findings, reasoning and conclusions[.]
>
> . . .
>
> (d) If the decision of the board effectively represents a reversal of a prior ruling of either the commission or the office of judges that was entered on the same issue in the same claim, the decision of the board may be reversed or modified by the supreme court of appeals only if the decision is in clear violation of constitutional or statutory provisions, is clearly the result of erroneous conclusions of law, or is so clearly wrong based upon the evidentiary record that even when all inferences are resolved in favor of the board's findings, reasoning and conclusions, there is insufficient support to sustain the decision. The court may not conduct a de novo re-weighing of the evidentiary record. If the court reverses or modifies a decision of the board pursuant to this subsection, it shall state with specificity the basis for the reversal or modification and the manner in which the decision of the board clearly violated constitutional or statutory provisions, resulted from erroneous conclusions of law, or was so clearly wrong based upon the evidentiary record that even when all inferences are resolved in favor of the board's findings, reasoning and conclusions, there is insufficient support to sustain the decision.

"When it appears from the proof upon which the Workmen's Compensation [Board of Review] acted that its finding was plainly wrong an order reflecting that finding will be reversed and set aside by this Court." Syl. Pt. 5, *Bragg v. State Workmen's Comp. Comm'r*, 152 W. Va. 706, 166 S.E.2d 162 (1969). Cognizant of this standard, we proceed

[6] To the extent that this claim was filed on April 10, 2003, W. Va. Code §23-5-15 (2003) applies. Although this statute was amended in 2005, the applicable subsections quoted herein were not altered.

to consider the parties' arguments.

III.

DISCUSSION

We must necessarily determine whether the Appellant's disease, CML, resulted from his occupation and was therefore compensable under W. Va. Code §23-4-1. Based upon our consideration of the record before us and the applicable authorities, we conclude that the Appellant sufficiently proved that he developed CML as a result of his occupation as a mechanic with the West Virginia State Police.

Appellant contends that the evidence presented overwhelmingly shows that the BOR ruling was clearly wrong and should be reversed. Specifically, Appellant asserts that petroleum based products such as the ones Appellant worked with contain benzene, and that benzene causes CML. Appellant provides several epidemiologic studies, analyses and case reports that show an association between gasoline exposure and leukemia generally.[7] He also contends that the current state of the scientific literature provides a statistically significant connection between inhalation and dermal exposure to benzene and the development of CML. Appellant retained expert witnesses in the areas of industrial hygiene, epidemiology, occupational medicine and toxicology to provide testimony and evidence that

[7] See n. 15 ,*infra.*

Appellant's CML and resulting death was caused from his significant occupational exposure to benzene-containing products and products that contain 2-Butoxyethanol.[8] Thus, Appellant states that the evidence presented sufficiently proves that his CML was an occupational disease.

Conversely, Appellees maintain that the evidence of record fully supports the BOR's order, which correctly reversed the OOJ. They contend that the OOJ erred in holding the Appellant's claim compensable because it looked only to see if Appellant could make a *prima facie* claim. It did not, however, apply the requisite second step in the analysis and give any weight to the employer's and Commission's evidence that demonstrated with reasonable medical and scientific certainty that Appellant's disease was not attributable to his occupation, but was instead an ordinary disease of life.

Specifically, Appellees assert that the case studies cited by Appellant showing a link between benzene exposure and CML have not been able to get peer reviewed textbooks to acknowledge and print them as common or accepted consensus medical opinion. Therefore, Appellees believe that these studies are not a sufficient basis upon which to base an occupational disease award. Rather, Appellees suggest that the relative dearth of peer reviewed textbooks that discuss this theory illustrate that the etiology of CML

[8] These expert witnesses' reports and testimony will be discussed in greater detail below.

is unknown. Thus, Appellees contend that because this Court recognized in *State v. Leep*, 212 W. Va. 57, 569 S.E.2d 133 (2002), that whether a scientific theory is generally accepted within a scientific community is a factor that must be weighed in determining whether to allow such testimony as evidence, the clinical reports cited by the Appellant should not be given much weight.

Appellees retained two experts in the areas of oncology and industrial hygiene who hold the opinions that Appellant's CML was not a result of his occupation as a mechanic with the State Police. Appellees also rely on the report of Dr. Ranavaya, who was hired by the Commission to evaluate the Appellant, which opines that his condition was an ordinary disease of life. Appellees assert that because the OOJ made no determination as to which opinions were more reliable, credible or had greater weight, the decision to rule this claim compensable was clearly wrong in view of the reliable, probative and substantial evidence on the whole record.

We have traditionally held that a workers' compensation claimant has the burden of proving his or her claim by proper and satisfactory proof. *Sowder v. State Workmen's Compensation Commissioner*, 155 W. Va. 889, 892, 189 S.E.2d 674, 676 (1972). In order for a claim to be held compensable under the Workmen's Compensation Act, three elements must coexist: (1) a personal injury (2) received in the course of employment and (3) resulting from that employment." Syl. Pt. 1, *Barnett v. State Workmen's Compensation*

Commissioner, 153 W. Va. 796, 172 S.E.2d 698 (1970). "In determining whether an injury resulted from a claimant's employment, a causal connection between the injury and employment must be shown to have existed." Syl. Pt. 3, *Emmel v. State Compensation Director*, 150 W. Va. 277, 145 S.E.2d 29 (1965).

West Virginia Code §23-4-1 indicates that claims may be filed for diseases that were incurred in the course of and resulting from employment. No ordinary disease of life to which the general public is exposed outside of employment is compensable unless it is apparent

> "(1) that there is a direct causal connection between the conditions under which work is performed and the occupational diseased, (2) that it can be seen to have followed as a natural incident of the work as a result of the exposure occasioned by the nature of the employment, (3) that it can be fairly traced to the employment as the proximate cause, (4) that it does not come from a hazard to which workmen would have been equally exposed outside of the employment, (5) that it is incidental to the character of the business and not independent of the relation of an employer and employee, and (6) that it must appear to have had its origin in the risk connected with the employment and to have flowed from that source as a natural consequence, though it need not have been foreseen or expected before its contraction."

W. Va. Code §23-4-1(f).

In syllabus point 5, *Powell v. State Workmen's Compensation Commissioner*, 166 W. Va. 327, 273 S.E.2d 832 (1980), this Court addressed the claimant's burden in occupational disease cases. Therein, we stated that "if studies and research clearly link a

disease to a particular hazard of a workplace, a prima facie case of causation arises upon a showing that the claimant was exposed to a hazard and is suffering from the disease to which it is connected." *Id.*, at Syl. Pt. 5. While this Court has repeatedly held that a determination of compensability cannot be made in a claim based solely on speculation[9], we have also specifically acknowledged that "W. Va. Code §23-4-1 does not require a claimant to prove that the conditions of his employment were the exclusive or sole cause of the disease nor does it require the claimant to show that the disease is peculiar to one industry, work environment, or occupation." Syl. Pt. 3, *Powell*, 166 W. Va. 327, 273 S.E.2d 832.

In the case *sub judice*, numerous depositions were taken regarding the issue of the Appellant's exposure to gasoline fumes, solvents and paint fumes. The evidence supported the fact that the claimant was subjected to these various petroleum based products as part of his duties as a mechanic. Appellant demonstrated that he would remove fuel filters on a daily basis. This caused him to get gasoline on his hands and smell these fumes. He occasionally siphoned gasoline tanks by mouth and cleaned mechanical parts with gasoline as well. It was also established that there were gasoline fumes from discarded gasoline that was kept in the work place and he was exposed to solvent and paint fumes on occasion.

---

[9] *See Huff v. State Workmen's Compensation Commissioner*, 157 W. Va. 530, 202 S.E.2d 383 (1974); *Clark v. State Workmen's Compensation Commissioner*, 155 W. Va. 726, 187 S.E.2d 213 (1972); *Smith v. State Workmen's Compensation Commissioner*, 155 W. Va. 883, 189 S.E.2d 838 (1972); *Deverick v. State Compensation Director*, 150 W. Va. 145, 144 S.E.2d 498 (1965).

Appellant's treating physician, Dr. Shadduck,[10] provided testimony as to the entire course of the Appellant's treatment. Although he noted that he was not aware of the cause of CML in most of the patients that he had treated with CML and noted that it was generally accepted that the cause of CML was not known, he opined that after reviewing the Appellant's medical records, the testimony of Appellant and his wife, the testimony of his co-workers and supervisors, and the testimony of Stephen Petty, P.E., P.I.H, an industrial hygienist,[11] he believed the Appellant's exceptionally high level of exposure to benzene in the workplace caused his CML and resulting death. Specifically, Dr. Shadduck provided testimony regarding various studies that he believed supported the relationship between benzene exposure and CML. He noted that it is generally accepted by the scientific community that benzene exposure can cause acute myelogenous leukemia (hereinafter "AML"), and after analyzing several case studies, he believed that they were persuasive enough to allow him to state to a reasonable degree of medical certainty that exposure to benzene and other hydrocarbons were probably causative in the development of the Appellant's CML.[12] Dr. Shadduck acknowledged that most of his patients that he treated for CML did not have any abnormal exposure to benzene to his knowledge. He also testified

---

[10] Dr. Shadduck is Board Certified in Internal Medicine and Hematology and has treated many patients with leukemia. He was the Appellant's treating physician and was not retained by any party.

[11] Stephen Petty was an industrial hygienist retained by the Appellant in this case. His opinions are discussed more thoroughly below.

[12] These case studies are discussed in further detail below.

that he did not believe that the Appellant's prior work history of pumping gas did not expose him to an excessive level of benzene, since this was done outdoors and not done on a consistent basis.

Dr. Stephen Petty, P.E, C.I.H., a registered professional engineer and certified industrial hygienist, was also retained by Appellant to evaluate his occupational exposure to aromatic hydrocarbons. Based on his review and knowledge of the industrial hygiene and safety literature, the documents provided by the employer, his experience in industrial hygiene and safety fields, and the testimony of the Appellant and his co-workers, he opined that Appellant was routinely and on a continuing basis exposed to cancer causing substances including gasoline, solvents, degreasers, and aromatic hydrocarbon products during his employment.[13]

---

[13] As set forth in his October 31, 2003, report, he opined that:

- Mr. Casdorph suffered chronic exposures to hazardous chemicals, including carcinogens such as benzene.
- Protection of Mr. Casdorph from chemical exposures was inadequate given job functions. Inhalation and dermal exposure was inevitable given the nature of the job functions.
- Background levels from gasoline and solvents spilled onto the floor of the garage, combined with cleaning of parts, paint fumes and lack of ventilation created an environment for continuous exposure to benzene-containing compounds. For example, constant exposure to hazardous chemicals occurred as a result of the practice of having workers such as Mr. Casdorph siphon gas from/to vehicle fuel tanks by mouth and storing the fuel in an open trash can. The work area was reported to be quite "smelly."

(continued...)

Appellant also submitted the report of Dr. Brautbar, an expert industrial hygienist, dated April 14, 2003. Dr. Brautbar reviewed various documents related to the claimant and conducted a telephone interview with him. He found that the claimant had

---

[13](...continued)

- Dermal exposure, for example, from the cleaning and reassembly of vehicle parts, including manifolds, fuel filters and fuel tanks were not done with gloves on. Further gasoline and degreaser was constantly dripping onto worker clothes and exposed to skin parts. Gloves were not used by workers until after Mr. Casdorph was diagnosed with CML.
- Auto exhaust was exhausted into closed garages daily with no ventilation.
- Gasoline, paint and various solvent fumes were known to be present.
- Work practices were not protective of human health. This was recognized by the company since practices such as closed garages, little or no ventilation and siphoning of gasoline by mouth continued throughout most of Mr. Casdorph's 22-year career. For example, workers had to siphon gasoline from/into fuel tanks by siphoning by mouth. Mr. Casdorph's personal review in 1992 stated that he was "properly using facilities, equipment, etc.," even though they changed the practice of siphoning. This practice continued until about 2000. The fact the process changed reflects knowledge that it was wrong.
- Based upon the depositions reviewed, workers reported that they smelled fumes but little or nothing was reportedly done to correct the situation. Workers reported odor levels of 7 or 8 on a 1-to-10 scale supporting this contention. Supervisors were reportedly aware of these complaints.
- In addition, an effective respiratory protection program appears to have been virtually non-existent during the time interval from 1992 to about 2003.
- Records of training in the Claimant's files suggest no training on hazards despite that recommendation in 1992 that "immediate updates on hazardous waste through in-service school" be completed.
- No respiratory monitoring or protection has apparently ever been completed, even after this date.
- Further, until Mr. Casdorph's illness, no systematic use of PPE of any kind appears to have been used. Now some mechanics were [sic] gloves.

been exposed to gasoline and other various industrial solvents during the twenty-two years he worked with the State Police, and that the claimant had no history of smoking or alcohol consumption. Claimant also had no family history of lymphoma, leukemia, multiple myeloma or hematopoietic diseases. Based upon Appellant's exposure history, it was his opinion that this exposure was a substantial factor contributing to the development of CML.

Additionally, Dr. Peter Infante, an expert epidemiologist,[14] provided testimony concerning the findings made in his report on May 14, 2003. He opined that the Appellant had ample opportunity for occupational exposure to benzene and other solvents contaminated with benzene due to his occupation and stated that benzene is the cause of leukemia and CML is a type of leukemia associated with benzene exposure. He believed that the Appellant's exposure to benzene was a significant contributing factor in his development of CML. Of the various articles reviewed by Dr. Infante, he noted that benzene content of gasoline is approximately 1.5% currently in the United States. Thus, he believed that the Appellant's major cause of exposure to benzene was his exposure to gasoline in the workplace, based upon the testimony of the Appellant and his co-workers regarding his exposure. Dr. Infante also relied upon various pieces of scientific literature concerning case

[14] Dr. Infante is the former Director of Standards at the Occupational Health and Safety Administration ("OSHA"). He was retained by the Appellant as an expert in this case.

studies that he believed supported his opinion that benzene exposure could cause CML.[15]

---

[15] Dr. Infante noted that researchers from the National Cancer Institute and the Chinese Academy of Preventative Medicine have concluded:

> Chronic myeloid leukemia [CML] has been linked with benzene exposure in clinical reports, a small case-control study [from France], the cohort of Chinese workers followed-up through 1981 by the Chinese Academy of Preventative Medicine, and the expanded cohort of Chinese workers followed-up through 1987 by the [National Cancer Institute and the Chinese Academy of Preventative Medicine.] Hayes, Richard B., S-N Yin, Mustafa Doseci, and Martha Linet, Benzene and Lymphohematopoietic Malignancies in Humans. *Am J. Ind. Med*. 40:117-126 (2001).

See also Adegoke, Olufemi, *et al.*, Occupational History and Exposure and the Risk of Adult Leukemia in Shanghai. *AEP*. 13 (No. 7): 485-494 (2003)(population-based case-control study of 486 men and women was conducted in Shanghai China from 1987 to 1989 to evaluate the association of selected occupational exposure to benzene with the risk of leukemia, finding that exposure to benzene was found to be associated with the elevated risk of CML); *See* Savitz, David, Kurtis W. Andrews, Risk of Myelogeneous Leukemia and Multiple Myeloma in Workers Exposed to Benzene. *Occup. Environ. Med. 53:357 (1996)* (in reviewing the reanalysis of the Pliofilm cohort by Wong, O., Risk of Acute Myeloid Leukemia and Multiple Myeloma in Workers Exposed to Benzene, *Occup. Environ. Med*. 52:380-384 (1995), a statistically significant relative risk of 3.0 for non-AML leukemia (including CML) was reported based on eight cases); *See* Yin, S-N, *et al.*, A Cohort Study of Cancer Among Benzene-Exposed Workers in China: Overall Results. *Am. J. Ind. Med.* 29: 227-235 (1996)(the Chinese cohort study by Dr. Yin and others reported an imprecise 2.5 relative risk for CML from exposure to benzene, not statistically significant, but consistent with other studies finding an association); *See* Infante, P.F., Benzene and Leukemia: Cell Types, Latency and Amount of Exposure Associated with Leukemia. *Adv. Occup. Med. Rehab.* 1:107-120 (1995)(reanalysis of the specific cell-type of leukemia cases reported by Yin and others for the years 1972-1982, Yin, S-N, *et al.*, Occupational Exposure to Benzene in China. *Br. J. Ind. Med*. 44-192-195 (1987), reporting that in breaking down the 30 leukemia cases by cell-type among the benzene-exposed workers in the cohort and comparing them with the distribution of leukemia cases identified from China's general population, the cell-type specific standard mortality ratio for CML was 4.24, statistically significant.); *See* Chung-Kuo, Hsueh Ko, Hsueh Yuan Hsueh, Countrywide Analysis of Risk Factors for Leukemia and Aplastic Anemia. Chinese Epidemiologic Study Group of Leukemia and Aplastic Anemia, *Pao Acta Academiae Medicinae Sinicae* 14: 185-189 (1992)(a case- control study of 1,257 cases of leukemia and 339 cases of aplastic anemia in China for the years between

(continued...)

He also testified that Appellant had significant exposure to 2-Butoxyethanol that was found in sufficient concentrations (some as much as 10%) in several products used by the Appellant. According to Dr. Infante, 2-Butoxyethanol has been associated with blood abnormalities of exposed workers and enhances the toxicity of benzene in workers exposed to it.

Appellant also retained Dr. Myron Mehlman, an expert toxicologist. In a March 12, 2004 report, Dr. Mehlman opined that Appellant's CML was a direct result of his occupational exposures to gasoline, solvents, degreasers, and aromatic hydrocarbon products.

The Appellees submitted expert reports and testimony from Dr. Weir, an expert industrial hygienist and toxicologist retained by the Appellees, and Dr. Weiss, a Board Certified Oncologist. Dr. Weir opined that it was extremely unlikely that the claimant

---

[15](...continued)
1986 and 1988 found a statistically significant excess of CML for patients exposed to benzene); *See* Linet, Martha S., Malker, Hans S.R., *et al.*, Leukemia and Occupation in Sweden: A Registry-Based Analysis. *Am. J. Ind. Med*. 14: 319-330 (1988)(5,351 leukemia cases were found with 19% CML, and 1.5 fold excess of CML found in motor mechanics exposed to gasoline and its additives, oil, grease and solvents); *See* Chrisite, D., *et al.*, A Prospective Study in the Australian Petroleum Industry. II. Incidence of Cancer, *Br. J. Ind. Med*. 48:511-514 (1991)(statistically significant four-fold excess of myeloid leukemia (including CML) found in the incidence of cancer in employees of the Australian petroleum industry from 1981 to 1989); *See* Goguel, A., Benzene Leukemia in the Paris Area Between 1950 and 1965, *Nouv. Rev. Fr. D'Hemat*. 7:465-480 (1967)(of 44 cases of leukemia in Paris from 1950 to 1965, thirty percent of benzene leukemias were of the CML cell-type.)

would have been exposed to concentrations of these substances to contribute in any manner to the Appellant's CML.[16] Dr. Weir stated, in part, that:

> . . . Based on the likelihood of trace amounts of benzene in a few components of some of the products that Mr. Casdorph routinely used on the job, Mr. Casdorph's description of his tasks, as well as those of his co-workers, limited duration of exposure, lack of epidemiological evidence, and plausibility of a biological threshold below which the body is able to protect itself from chemical harm, it is not scientifically reasonable to conclude that his claimed exposures while employed with the West Virginia State Police caused his disease process of chronic myelogenous leukemia/acute lymphocytic leukemia. . .

Dr. Weiss also reviewed voluminous material, including the Appellant's medical records and various studies from 1990 to the present regarding the cause of CML.[17] He found no reliable scientific evidence to support the proposition that CML could be caused by benzene exposure. He also testified that the chromosomes nine and twenty-two, which became abnormal when one contracted CML, were not affected by benzene exposure. He

---

[16] Dr. Weir is board certified in the Comprehensive Practice of Industrial Hygiene and general toxicology.

[17] In his February 12, 2004, report, Dr. Weiss states:

> CML is a form of leukemia that has no established etiology, including benzene exposure. It occurs in all age groups, and I have personally treated patients with it who are in their late teens or early 20s who never had exposure to any chemicals including benzene. It is typically associated with the Philadelphia chromosome abnormality and has a well-known natural history of remissions and relapses over several years with ultimate evolution into the so-called blast-crisis phase where it has all the hallmarks of an acute leukemia. In this blast-crisis lymphoblastic morphology in the immature marrow cells (blasts) is common, and so are the multiple chromosome abnormalities this man developed in 03/03.

acknowledged, however, that he was not aware of many studies prior to 1990 that indicated that there was a relationship between benzene exposure and CML. He believed that some of the studies which noted this relationship should not be relied upon because they were small case studies. Dr. Weiss could not cite any scientific articles that concluded that benzene did not cause CML.

Furthermore, Appellees relied upon Dr. Mohammed Ranavaya's opinion. Dr. Ranavaya evaluated the Appellant on behalf of the Commission and he determined that there was no causal connection between the Appellant's CML and benzene exposure:

> In summary, this gentleman has a very serious blood disorder, however, based on the evidence in record and the Peer Reviewed Scientific Literature, it cannot be causally connected to the nebulous claim of exposure to aromatic compounds in this job as a mechanic for the West Virginia Division of Public Safety. To accept this claim as an occupational disease, in my opinion, would simply be cost shifting of a naturally occurring disease process to a Workers' Compensation Insurance claim.

However, Dr. Ranavaya acknowledged that the Appellant's case was the first benzene blood disorder case that he had evaluated. Additionally, although Dr. Ranavaya was familiar with scientific literature establishing a causal connection between benzene exposure and AML, he admitted he had not reviewed the literature cited by the Appellant demonstrating a relationship between CML and benzene exposure. He too opined that these small case studies were not reliable.

The OOJ set forth and analyzed all of the evidence of record in detail, and after weighing the evidence, it made the determination that sufficient proof of a causal connection had been established in this claim. In analyzing all of the testimony, expert reports and scientific literature in the voluminous record in this case, the OOJ found that the Appellant was certainly exposed to gasoline and other automotive related substances that contained benzene to a much greater extent than the general public. Thus, the OOJ concluded that the Appellant established based upon his requisite burden of proof that his exposure to benzene was a significant factor in him developing CML, and the claim should be found compensable.

The OOJ acknowledged that there was some contradictory opinion as to whether or not the levels of benzene exposure in the Appellant's workplace caused him to be exposed to levels that were dangerous to his health, but it was obviously more persuaded by the Appellant's experts' medical opinions that his exposure history was sufficient enough to establish a causal link. While the OOJ acknowledged that the relationship between benzene exposure and CML has not been proven in the medical profession and scientific community to the extent that it has with AML, it was persuaded by the numerous case studies from China, France and Australia cited by the Appellant that demonstrate that there is a statistical significance between individuals who are exposed to high concentrations of benzene and the disease CML.

The OOJ found that it was indeed a close case, but relied upon the opinion of Appellant's treating physician, Dr. Shadduck, that based upon the Appellant's benzene exposure, it was probable that this was a significant factor in his disease. The OOJ found Dr. Shadduck's testimony to be well reasoned.[18]

In reversing the OOJ, the BOR summarily found that Dr. Shadduck's opinion that the Appellant's benzene exposure was probably causative in the development of his CML was insufficient to establish that the Appellant had an occupational disease. The BOR determined that the Appellant had not met the elements of W. Va. Code §23-4-1(f). However, it did not set forth with specificity the reasons why it made such finding.

Taking the Appellant's exposure history and the medical and scientific evidence on record into consideration, we conclude that the elements of W. Va. Code §23-4-1 were indeed met by the Appellant, as the evidence reveals that (1) he has established a direct causal connection between the conditions under which his work was performed and his CML; (2) his CML followed as a natural incident of his work as a result of his exposure

[18] The OOJ further noted the particular significance of the liberality rule's application to this claim, since the claim was filed one day prior to the effective date of the 2003 amendments to West Virginia's workers' compensation statutes governing the standard of proof required of claimants in proving their workers' compensation claims. Cases in which the Order is prior to July 1, 2003, are entitled to an interpretation of the law in which the evidence in a Workers' Compensation claim must be liberally construed on behalf of the claimant. *See Myers v. State Workmen's Compensation Com'r*, 160 W. Va. 766, 239 S.E.2d 124 (1977).

occasioned by the nature of his employment; (3) the proximate cause of his CML can be fairly traced to the Appellant's employment, and (4) that his disease did not come from a hazard to which he would have been equally exposed outside of the employment.

The medical literature and expert and fact witness testimony in this case sufficiently established that a causal link between the Appellant's benzene exposure and CML existed. Although the Appellees assert that the case studies cited by Appellant showing a causal connection between benzene exposure and CML have not been able to get peer reviewed textbooks to acknowledge and print them as common or accepted consensus medical opinion, we find that these case studies, although small, are valid studies that have been peer reviewed and published.[19] We acknowledge, as Appellees contend, that this Court recognized in *State v. Leep*, 212 W. Va. 57, 569 S.E.2d 133 (2002) that "whether a scientific theory is generally accepted within a scientific community" is a factor that must be weighed in determining whether to allow such testimony as evidence. However, we must also be reminded that the Rules of Civil Procedure and the Rules of Evidence do not strictly apply to workers' compensation claims. *See Morris v. Consolidation Coal Co.*, 191 W. Va. 426, 429, 446 S.E.2d 648, 651 (1994)(recognizing that the Rules of Civil Procedure do not generally apply to workers' compensation claims); *See also Thacker v. Workers' Comp. Division*, 207 W. Va. at 244, 531 S.E.2d at 69 (recognizing that pursuant to W. Va. Code

[19] It was represented during oral argument that the subject case studies have been peer reviewed.

§23-1-15(1923), the workers' compensation commissioner shall not be bound by the usual common law or statutory rules of evidence, but shall adopt formal rules of practice and procedure as herein provided, and may make investigations in such manner as in his judgment is best calculated to ascertain the substantial rights of the parties and to carry out the provisions of this chapter).[20]

Therefore, taking all of the above into consideration, we conclude that the BOR improperly reversed the OOJ determination that Appellant's claim was a result of his occupation. Because we find that the BOR's order is so clearly wrong based upon the evidentiary record that even when all inferences are resolved in favor of the board's findings, reasoning and conclusions, we conclude that there is insufficient support to sustain the decision of the BOR under W. Va. Code §23-5-15(d)(2003). Accordingly, the BOR's final order is reversed and remanded.

IV.

CONCLUSION

For the foregoing reasons, the December 20, 2006, decision of the BOR is

[20] Indeed, we have noted in the past that the purpose of the Workers' Compensation Act "is to provide a simple and expeditious method of resolving the question of disputed claims arising in injuries occurring in the workplace." *Mitchell v. State Workmen's Compensation Com'r*, 163 W. Va. 107, 117, 256 S.E.2d 1, 9 (1979)(citations omitted). *See also Meadows v. Lewis*, 172 W. Va. 457, 469, 307 S.E.2d 625, 638 (1983).

hereby reversed, and this case is remanded with directions to reinstate the August 4, 2005, order of the OOJ, finding the Appellant's claim for CML compensable.

Reversed and Remanded, with Directions.