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IN THE SUPERIOR COURT OF THE STATE OF DELAWARE

Gloria Whalen, Plaintiff, v. E.I. DuPont de Nemours and Company, et al., Defendants.	C.A. No. N23C-09-059 ASB
Howard B. Altena, et al., Plaintiffs, v. E.I. DuPont de Nemours and Company, et al., Defendants.	C.A. No. N23C-09-107 ASB

PLAINTIFF'S ANSWERING BRIEF IN OPPOSITION TO DEFENDANTS' *DAUBERT* MOTIONS TO EXCLUDE THE TESTIMONY AND OPINIONS OF STEVEN COMPTON, Ph.D., DR. ARTHUR FRANK, AND DAVID Y. ZHANG, MD, Ph.D, MPH, AND DEFENDANT'S CONSOLIDATED OPENING BRIEF IN SUPPORT OF THEIR *DAUBERT* MOTIONS

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On October 4, 2024, Defendants filed separate *Daubert* motions to exclude the opinions and testimony of Plaintiffs' experts, Steven Compton, Ph.D., Dr. Arthur Frank, and David Y. Zhang, P.h.D, MPH, and a consolidated opening brief in support of their motions. This is Plaintiffs' answering brief in opposition to Defendants' motions and consolidated opening brief.

Eldrige Illinois Shotgun Mesothelioma Case-Court's Ruling on Defendants' Motion to Exclude Compton. One cannot understand why nowhere in Defendants' 35 page motion to exclude Dr. Compton, which was replete with case law from Delaware and other jurisdictions and with repeated reference to the *Eldridge* case, that there is no reference to any rulings in *Eldridge* regarding Compton. Exhibit 46, MIL to Preclude Compton; Exhibit 47, MIL hearing transcript (excerpt), 6/16/21. As the attached transcript shows, as here, the Defendants argued that Dr. Compton's testimony should be excluded because it was based on an indoor study when the plaintiff's exposure to the shotgun shell was all outdoors. Exhibit 47. The Court rejected these argument stating:

> "I believe that this experiment and this testing will be helpful to the jury …Whether or not the argument that this was not substantially similar to the conditions that the decedent was under at that time is the subject of cross examination and not admissibility" (Exhibit 47).

As set forth below we submit that this Court should issue the same ruling.[1]

I. BACKGROUND

As is explained below, Dr. Compton's fiber release study is reliable and will assist the trier of fact in evaluating the Plaintiff's exposures to asbestos from Remington's asbestos shotshells and their ability to cause disease.

Both Howard Altena and Eugene Schoepke were lifelong farmers. They were also avid hunters and devotees of Remington products. Both men were diagnosed with malignant mesothelioma, an exceedingly rare and fatal form of cancer caused by exposure to asbestos.

Howard Altena started hunting with his father on their family farm in Doon, Iowa. His dad taught him how to shoot in 1963 when he was only ten years old. Exhibit 1, Altena De Bene Esse Deposition at page 23. In high school, at the age of fifteen, he acquired a 12-gauge Remington pump shotgun, which he used for hunting duck and geese. Id. at 26-29. Howard also hunted pheasant, rabbit, squirrel and

[1] Except for the fact the *Eldridge* was resolved prior to trial and there was no final order, this ruling as it involved the same defendants would have been a collateral estoppel bar for this motion. In a spirit of full disclosure, Plaintiff's counsel filed a motion to exclude Spencer in the *Eldridge* case. Unlike the Compton motion, no ruling was ever issued. As the attached exhibit shows, the Court reserved ruling. Exhibit 48, *Eldridge* MIL Hearing (Spencer).

pigeon, and he shot trap. Throughout his life, he primarily used Remington shotgun shells. Id. at 29.

Eugene "Gene" Schoepke (deceased) also started hunting during childhood. Exhibit 2, Janet Schoepke Deposition at page 24. He married his wife Janet in 1957 and together the two raised eight children on a farm in Varna, Illinois. Throughout his life, Gene hunted pheasant, duck and dove, as well as raccoon, rabit and squirrel. Id. at 24-26. He hunted with his father, his brother, his cousin, his church pastor, his neighbor, and his sons. Id. His eldest son Jeff recalled hunting with him six to eight times per year throughout the 1960's, 1970's and 1980's. Exhibit 3, Jeffrey Schoepke Deposition at pages 7-8. He remembered his dad owned a Remington Model 1100 shotgun and shot "a lot of Remington" shells. Id. at 8-9. [2] Gene died shortly after his mesothelioma diagnosis in March 2022, and his obituary notes his love of the outdoors, hunting and fishing. Exhibit 4, Schoepke Obituary.

These facts are undisputed. Also undisputed is the fact that Remington Arms was the only company to ever use asbestos in its shotgun shells. It did so from 1960-

[2] Defendants rightly notes that there are 7 other "shotgun shell" cases currently pending against Remington and Du Pont in this Court. Four of them have related cases pending in Illinois, each of which were filed before the Plaintiffs learned that Remington shotgun shells contained asbestos. See, e.g. Affidavit of James Chorey. Any discovery regarding "other exposures" to asbestos that have been developed in those cases has been properly disclosed in the Delaware litigation. Plaintiffs are not hiding evidence or exposures, and any suggestion to the contrary is both inaccurate and unprofessional.

1981 and never disclosed that fact to its customers. Virtually every shell it manufactured contained an asbestos-containing base wad composed of approximately 35% asbestos by weight. It sold the shells under both the Remington and Peters brands. The base wads consisted of asbestos fiber, wood flour, wax and water. Exhibit 5, 1964 DMBW Drawing. In early 1980, Remington was using 4000 pounds of asbestos per day to make its base wads. Exhibit 6, 1980 Pre-Inspection Questionnaire at page 43 (BRD0012207). It batched the asbestos with wood flour and water in a giant mixer, sprayed the mixture with wax, and then fed it to a rotary press that punched out 840 donut-shaped base wads per minute. Exhibit 7, 1968 DMBW Process Record. The asbestos wads were then fit into the base of Remington's shotshells to help fill the cavity around the battery cup and seal in the explosive gases that are created when the priming mixture ignites the gunpowder piled atop the base wad. As Dr. Compton will testify at trial, each base wad contained **trillions** of microscopic asbestos fibers.[3] Exhibit 8, Compton (DE)

[3] Using a formula developed by the National Academy of Sciences (NAS) under contract with the EPA, MVA performed an analysis of the asbestos fibers in the base wad of a typical 12-gauge Remington shotshell, which weighed 58 grains (3.75 grams) and contained 35% asbestos by weight asbestos fiber, which is equivalent to 1.31 grams of asbestos. According to the NAS conversion formula, 1.31 grams of asbestos is equivalent to 2,625,000,000,000 (2.6 trillion) total asbestos fibers per base wad.

Deposition 8/23/24 at pages 178-190. Contrary to Defendants' suggestion, there is nothing "slight" about the amount of asbestos in Remington's base wads.

When Remington finally eliminated asbestos from its shotgun shells due to growing regulatory pressures, it drafted a standby "public relations" statement dismissing the asbestos hazard to factory employees and users of its asbestos shotgun shells. It claimed that the base wad manufacturing process "protects against the release of asbestos fibers during shooting", and that "there is no known hazard caused by asbestos to shooters who use this type of ammunition." Exhibit 9, 1980 PR Statement.

As discussed below, Remington's PR statement is devoid of foundation. The two Remington corporate witnesses who have been designated as most knowledgeable on the issue actually have no knowledge whatsoever regarding any fiber release testing.

***Taska*, *Eldridge* and *Benson* – The First Remington Cases.** It was not until 2017 that the first case was filed on behalf of a shooter alleging the use of Remington's asbestos shotgun shells caused disease. Huntington "Hunt" Eldridge Jr., much like Howard Altena and Gene Schoepke, was an avid hunter and user of Remington shotshells who developed mesothelioma. Eldridge grew up hunting in Illinois and Wisconsin, which he continued during his career as a bank executive for Northern Trust. He lived in downtown Chicago in the 1970's and would drive

30 miles west of the city to St. Charles to go duck hunting with friends in the early morning hours before work. He left his bank job in the early 1980's and went to work for Ducks Unlimited doing fundraising work, where he spent much of his time squatting in duck blinds and shooting shotshells. Exhibit 10, DePasquale Report Eldridge.

Soon after his diagnosis of mesothelioma in December 2015, Hunt Eldridge retained counsel to investigate a potential lawsuit on his behalf. Neither he nor his counsel knew at that time that Remington's shotshells had ever contained asbestos. It was soon discovered, however, that Remington and Du Pont had been named as defendants in a 2013 case filed by Michael "Mickey" Taska in Bridgeport, Connecticut. Taska alleged manufacturing emissions to the ambient air surrounding Remington's Bridgeport, Connecticut plant contributed to the cause of his mesothelioma. Mickey Taska died in April 2016 (Exhibit 11, Taska Obituary), but documents discovered in his case helped pull back the curtain on Defendants' decades of deceit.

Hunt Eldridge died in June 2016, just 6 months after his diagnosis of mesothelioma. His obituary described him as "an avid outdoorsman who spent much of his life outside hunting, fishing, and golfing with great friends." Exhibit 12, Eldridge Obituary. In April 2017, a wrongful death suit was filed alleging exposure to asbestos from Remington's shotshells caused Hunt to develop the

mesothelioma that led to his death.[4] Several months later, on Friday, January 5, 2018, Remington and Du Pont dumped tens of thousands of pages of corporate documents, including those previously produced in *Taska*, documenting their long legacy of asbestos use.

Just a few days later, a second shooter came forward alleging Remington's shotshells had caused his mesothelioma. On Monday, January 9, 2018, the law firm of Karst & von Oiste filed in Ramsey County, Minnesota a product liability suit on behalf of Robert "Bob" Benson and his wife Suzanna. Exhibit 13, Benson Case History. A resident of Anchorage, Alaska, Bob Benson had been recently diagnosed with mesothelioma, and he blamed it in part on his exposure to Remington shotshells.

Bob Benson sat for three days of deposition later that same week. He described how he attended gunsmith school at the Colorado School of Trades beginning in January 1964, where he learned to repair and rebuild shotguns and to reload shotgun shells. Exhibit 14, Benson Videotaped Perpetuation Deposition at pages 46-48. At gunsmith school, he worked with "the main three" shotshell brands - Remington, Winchester and Federal. Id. at 48. He reloaded approximately 1,000 shells per year in school, and more outside of school, as he was an avid hunter and

[4] An extensive investigation and discovery in Eldridge did not reveal any other asbestos exposure other than the Remington shotgun shells

target shooter. Id.at 53-54. Bob had been hunting since a young age. Exhibit 15, Benson Discovery Deposition Vol. 1, at pages 17-18). His dad had bought him a Remington 12-gauge shotgun when he was only 13 years old, and then another when he turned 15. Id. at 28-29. Throughout his life, Bob used mostly Remington shotgun shells. Exhibit 14 at 54. Bob died two months after his deposition due to complications from his mesothelioma. His obituary describes an adventurous man who loved to hunt. Exhibit 16, Benson Obituary. His case continued as to Remington and Du Pont and settled before trial.

More Mesothelioma Victims Exposed to Remington Shotshells.

Defendants' Motion suggests that there is something improper about the "shotgun shell" cases pending in Delaware, in part because of "parallel cases" pending on behalf of four of the Plaintiffs in Illinois. However, the only reason that Defendants were not named in the previously filed Illinois actions is because none of the plaintiffs knew at the time those cases were filed that Remington shotgun shells ever contained asbestos.

Chorey is a good example. On October 4, 2022, James Chorey filed suit in Madison County, Illinois alleging exposures to certain asbestos products encountered during home remodeling and automotive repair projects contributed to cause his mesothelioma. It was not until September 2023 that he learned Remington had used asbestos in its shotgun shells. Exhibit 17, Chorey Affidavit. Jim testified

in a dying declaration on September 14, 2023, about his lifelong use of Remington shotshells, which shells he had used for hunting and target shooting since the time he was a young boy. Jim died on September 19, 2023, just five days after is dying declaration. Exhibit 18, Chorey Obituary. His obituary, like that of Hunt Eldridge and Bob Benson and Gene Schoepke, recalls an enthusiastic outdoorsman who had been hunting since a young age. Id.

Rather than add Remington and Du Pont as defendants to his Illinois case, Chorey filed a separate stand-alone case against Remington and Du Pont in Delaware. It had become clear to Chorey's counsel, due in part to its experience litigating the *Whalen/Schoepke* matter[5], that Delaware would be a suitable forum for litigating these claims against Remington and Du Pont.

With the addition of *Buchholz*, a career farmer and hunter from North Dakota recently diagnosed with mesothelioma, there are now nine mesothelioma shotgun shell cases pending before this Court.[6] However, these are not the only active cases

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[5] *Whalen/Schoepke* was originally filed in August 2022 in Cook County, Illinois, but was transferred on Defendants' motion to Marshall County, Illinois, a rural county located 2 hours from Chicago. Rather than litigate the matter in a remote jurisdiction with little experience trying complex toxic tort matters like these, Plaintiffs decided to refile the case in Delaware.

[6] Delaware Remington cases: Darrel Buchholz, C.A. No. 24C-04-029; James Chorey, C.A. No. 23C-09-055; David Haines, C.A. No. 23C-09-060; Dorman Laycox, C.A. No. 23C-09-108; Firth Stokes, C.A. No. 23C-09-057; Dale Zick, C.A. No. 23C-09-109; and David Gievett, Special Administrator of the Estate of

pending against Remington and Du Pont on behalf of shooters diagnosed with mesothelioma. In recent months, several other firms have filed such cases in courts around the country.

It bears emphasizing that the Delaware claimants are not concealing evidence of other exposures developed in the Illinois litigation. All such evidence has been properly disclosed here. That includes claims made to asbestos bankruptcy trust funds such as that maintained by Johns-Manville, which has recently approved compensation claims filed on behalf of Mr. Altena and Mr. Schoepke alleging exposures to Manville's asbestos fiber in Remington shotshells contributed to cause their mesotheliomas. Among the information provided to the Manville trust in support of the shotshell claims are diagnosing medical records, product exposure testimony, and the expert reports authored by Dr. Arthur Frank and Dr. David Zhang that attribute each claimant's mesothelioma to his exposure to asbestos, including his regular and ongoing exposures to Remington's asbestos-containing shotgun shells.

Mesothelioma is a Cumulative Dose Disease. As both Dr. Frank and Dr. Zhang will testify at the *Daubert* hearing in this matter, mesothelioma is a cumulative dose disease, and **each exposure** is medically significant. There is

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Basil Humphreys on behalf of the Estate and as Special Administrator on behalf of Wrongful Death Claimants, C.A. No. 23C-09-059.

general agreement among scientists and health agencies that exposure to any asbestos type can increase the likelihood of lung cancer, mesothelioma, and nonmalignant lung and pleural disorders. Many other reviews support this conclusion, such as those from the American Conference of Governmental Industrial Hygienists (ACGIH), the American Thoracic Society (ATS), the Environmental Protection Agency (EPA), the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), the Occupational Safety and Health Administration (OSHA), the Consumer Product Safety Commission (CPSC), the World Health Organization (WHO), the Collegium Ramazzini, and the World Trade Organization (WTO). This scientific consensus is reflected in the Consensus Report of the 1997 Helsinki Conference, the Consensus Report of the 2014 Helsinki Conference, publications from the American Cancer Society, publications from the National Cancer Institute of the National Institutes of Health and Position Statement from the Joint Policy Committee of the Societies of Epidemiology (JPC-SE). As stated by Dr. Laura Welch in an *amicus* brief co-signed by dozens of others, the consensus of the scientific community is that any occupational or para-occupational exposure to asbestos – even "brief or low-level exposures" – must be considered causal in an individual with mesothelioma. Exhibit 19, Welch, Laura S., *Asbestos Causes Mesothelioma*, International Journal of Occupational and Environmental Health (2007). There is no safe level of exposure to asbestos.

While each state has its own law regarding the required proof of causation in asbestos cases, the medical consensus is clear that mesothelioma is a cumulative exposure disease. Each exposure contributes to the cumulative dose, and in a patient with mesothelioma the cumulative dose is the medical cause of the disease.

Asbestos Disease Causation Under Iowa and Illinois Law. The parties have stipulated that *Altena* will be governed by the substantive law of Iowa and that *Whalen/Schoepke* shall be governed by the substantive law of Illinois. Iowa applies a modified substantial factor rule in asbestos litigation. In *Beeman v. Manville Corp. Asbestos Disease Compensation Fund*, 496 N.W.2d 247, 254 (Iowa 1992), the Supreme Court of Iowa held that "a reasonable inference of exposure to a defendant's asbestos-containing product, coupled with expert testimony regarding asbestos fiber drift and the cumulative effects of exposure to asbestos, is enough to prove proximate cause in the asbestos products liability context." The Illinois standard, meanwhile, requires that a Plaintiff prove only that he worked "regularly, frequently and in close proximity" to a defendant's asbestos-containing product. *See Thacker v. UNR Industries*, 151 Ill.2d 343 (1992).

II. ASBESTOS EXPOSURE TO REMINGTON SHOTGUN SHELLS

Both Dr. Frank and Dr. Zhang are well-respected and board-certified occupational medicine specialists with years of experience studying asbestos and asbestos disease causation. In ascribing causation to a particular asbestos-containing

product, the occupational physician must first determine whether the product in question is whether Remington's shotshells contain asbestos, and next whether asbestos is released during its use. Exhibit 20, Zhang Deposition at 42, 134. It is undisputed that Remington's shotshells were manufactured and sold with asbestos from 1960 through 1981. The critical question is whether Remington shotshell's release asbestos fiber during use and expose shooters to airborne asbestos fiber.

Remington Never Tested for Fiber Release from Shotshells. In July 2018, Remington produced for deposition in *Benson* a corporate representative witness by the name of Raymond Anderson, who had worked as an engineer at Remington's shotgun shell manufacturing plant in Bridgeport, Connecticut from 1968 until its closure in 1986. Anderson was asked whether Remington ever conducted any testing to determine whether asbestos fiber is released when a shotshell with an asbestos-containing base wad is fired, but he was unaware of any. Exhibit 21, Anderson Deposition Benson at 294. Also unaware of any fiber release testing was Mr. Spencer Wildman, another long-time Remington engineer who served as Remington's corporate designee in the *Eldridge* matter. Wildman testified without equivocation that Remington never tested its shotshells for asbestos fiber release. Exhibit 22, Wildman Deposition Eldridge Vol. 2 at 182.

Notwithstanding the prior testimony of its corporate representatives, it is expected that Defendants will attempt to argue, as they did in *Eldridge*, that

Remington did in fact test to see whether asbestos is released when its shotshells are fired. An industrial hygiene data form dated October 22, 1980, references personal asbestos air sampling of ballistics tester Ellis Burns while "shooting for approx. 6 hrs." Exhibit 23, Burns Data Form. Although the air sampling was taken after Remington had begun removing asbestos from its shotshells, and it is unclear from the data form what shells Burns was shooting on the day of the sampling, or how many he shot, or what engineering controls might have been in place where the shooting was done, both of Defendants' retained industrial hygienists rely on the Burns data form as (1) proof that Remington did indeed test for fiber release, and further (2) that no asbestos is released.[7]

John Henshaw testified that he assumes Burns was shooting asbestos shotshells because "I don't know of any other reason why you would do an asbestos sample unless asbestos was associated with that activity." Exhibit 24, Henshaw Deposition Eldridge at 100-101. John Spencer makes the same assumption: "Again, I think that it's reasonable to apply some common sense here – you know – if you're testing, if you want to test for asbestos, that you have a product that contains asbestos." Exhibit 25, Spencer Deposition Delaware at 102. Spencer then doubles down on his assumption by incorporating the Burns air sampling data into his

[7] According to the data form, no asbestos was measured above the level of detection of 0.004 f/cc.

cumulative dose estimates for Mr. Altena and Mr. Schoepke, an issue addressed more fully in Plaintiff's *Daubert* Motion to exclude Spencer and his occupational exposure assessment.

The problem with Defendants' assumption is that by October 1980, Remington had already begun phasing asbestos out of its shotshells. Furthermore, Remington was monitoring employees for asbestos exposure regardless of whether they were handling asbestos or not, as they were required to under the Occupational Safety and Health Act (OSHA). Personal samples taken on two shell inspectors in July 1981 measured exposure to chrysotile asbestos despite the fact that there were no asbestos wads in the shells they were handling. Exhibit 26, Hargrove Data Form; Exhibit 27, Hricz Data Form. Where Remington employees were personally handling asbestos products at the time of the sampling, it was clearly noted on the corresponding data forms. See Exhibit 28, Syrgiannis Data Form. There is simply no basis for the assumption that Burns was firing asbestos shells on October 22, 1980, especially given the testimonies of Anderson and Wildman that no such testing ever occurred. The data form is devoid of any detail regarding the product tested and the conditions of the testing.

Plaintiffs Engage MVA Scientific to Test Remington Shells. Because there had been no prior scientific testing of the Remington Shotgun Shells, during its investigation into the *Eldridge* matter, Cooney & Conway engaged MVA Scientific

Consultants to analyze Remington's asbestos-containing shotgun shells. MVA Scientific is an independent analytical testing laboratory and consulting company, which has been retained by both plaintiffs and defendants in asbestos litigation. MVA is accredited by the American Associations for Laboratory Accreditation and is FDA registered. Dr. Steven Compton currently serves as MVA's Executive Director, a position he has held since 2014. Exhibit 29, Compton CV.

MVA has performed studies on the fiber release from asbestos products for over 30 years, many of which have been published in the peer-reviewed literature. MVA uses standard test methods published by organizations such as the American Society for Testing Methods ("ASTM"), NIOSH and the EPA. Its techniques are generally accepted in the scientific community and by safety professionals in asbestos monitoring and abatement activities.

Dr. Compton is widely considered one of the preeminent asbestos analysts in the country. He holds a Ph.D in Physics and has extensive training in microscopy and materials science. He has personally been involved in the identification, analysis, and characterization of particles, including asbestos, for the past 15 years. Since 2012, he has taught courses on the analysis of asbestos using electron microscopy. He has been published on numerous occasions in peer-reviewed literature for his analysis of asbestos-containing products, including a 2020 article entitled "Asbestos Fiber Release Studies Using a Constructed Simulation Chamber",

as published by ASTM International. Exhibit 30, Compton, Underwood, Asbestos Fiber Release Studies (2020). Over the years, Dr. Compton has also been a frequent presenter at professional conferences on the proper methodologies for performing asbestos analyses.

Dr. Compton has been qualified as an expert in microscopy and the identification and characterization of asbestos fibers in courts throughout the United States. He utilizes multiple, standardized analytical testing techniques to determine the amount of asbestos released into the air and dispersed into individuals' breathing zones, their clothing, and surroundings. The techniques Dr. Compton uses are well-accepted in the scientific community, published in the relevant scientific literature, and commonly used in the industry, including:

- Phase Contrast Microsocpy (PCM), under National Institute for Occupational Safety and Health (NIOSH) standard protocol 7400 for measuring asbestos by optical microscopy.
- Transmission Electron Microscopy (TEM), a methodology specifically sanctioned by the Environmental Protection Agency (EPA), and generally viewed as a more accurate method for identifying asbestos fibers.
- The Tyndall illumination effect, which helps to illuminate dust that may be invisible to the naked eye. The Tyndall effect was discovered in the late 19th century and is used by the EPA specifically to test asbestos during abatement.

MVA Analysis of Remington Shotshells. In April 2019, Cooney & Conway gathered a group of eight shotgun shells (four pairs) and requested that MVA analyze the wads in the shells to determine their asbestos content. Exhibit 31, MVA 2019 Report. All were 12-gauge Remington and Peters[8] brand shells, but of different designs and vintages. Figure 1 (below) from MVA's 2019 Report depicts the four pairs of shells sent for analysis.

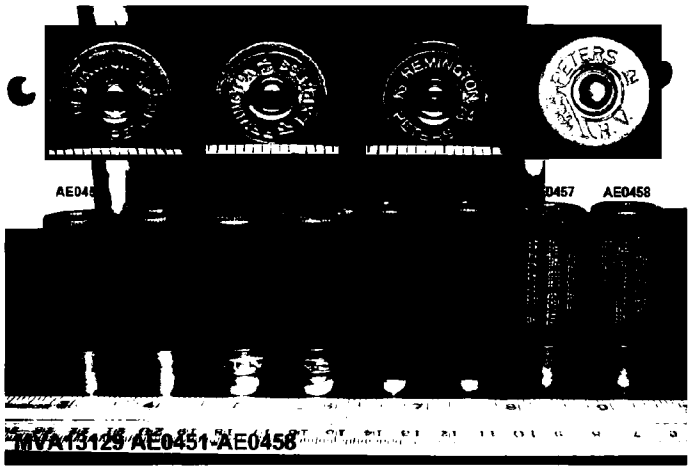

Figure 1. Remington 12 gauge shotgun shells, as received. Representative inset photos of metal base for each style inserted above the corresponding style.

One shell from each pair was selected at random for analysis, then dissected and examined under a stereomicroscope at magnifications ranging from 7X to 40X. Id. MVA's backup data contains numerous images of the shells. Exhibit 32, MVA Backup Data, at pages 31-84. Components of the shells were examined further with a polarized light microscope (PLM) at magnifications of 100X to 1,000X. With the exception of the paper-cased shells, all of the Remington and Peters shells were

[8]Remington and Peters brand shells are identical but for their branding. Both were manufactured in Bridgeport, Connecticut with the same asbestos base wads.

confirmed to contain an asbestos base wad. PLM images of the base wads demonstrate white chrysotile asbestos fibers and bundles in the base wads. Using standard Test Method EPA/600/R-93/116, MVA determined the base wads contained approximately 20% asbestos by volume.

To determine whether the base wads actually release asbestos fiber when the shells are fired, Cooney & Conway sought to gather additional asbestos-containing shells for analysis. In April 2019, Plaintiff requested Defendants produce any asbestos shells in their possession for inspection and analysis. In June 2019, Defendants indicated they had "a small number of Remington shotgun shells that may contain dry mold base wads" but objected to any destructive testing. Exhibit 33, Du Pont Production Response 61819. Plaintiff's counsel therefore resorted to the online marketplace and was able to acquire several boxes of Remington shotshells.

On October 15, 2019, counsel sent a total of 105 shells to MVA to use in an experiment to evaluate whether asbestos fiber is released during discharge of Remington's asbestos-containing shotshells. Exhibit 34, MVA 2020 Report. MVA designed a study involving the discharge of three different types of Remington shotshells – Shur Shot (low brass shells); Express (high brass shells); and Magnum Express (high brass shells with heavier load of shot). Before the study, MVA

photographed the shotshells and their packaging. Exhibit 32 at 107-131. It again dissected and examined the shells under stereomicroscope and PLM.

All Shells Used in MVA Fiber Release Study Were in Good Condition and Functioned as Expected. Images of the shells used in the fiber release study are contained in MVA's backup data file and demonstrate their like-new and unfired condition. These include the Shur Shot shells assigned an MVA identifier of AE1386, the Magnum Express shells assigned identifier AE1389, and the Express shells assigned identifier AE1390. Id. at 132-235.

It should be noted that MVA had three different styles of Shur Shot shells it could have used in its experiment and selected the most recent in vintage – the green Shur Shot shells. Also, the newer Shur Shot shells selected for the fiber release study did not contain felt filler wads like earlier vintage Shur Shot shells, which could have created more dust upon discharge. Id. at 131-168. Defendant suggests one of the older red Shur Shot shells that was photographed showed signs of aging, but no shells from that box were used in the fiber release study. There is no visible sign of degradation in any shells that were actually used in the fiber release study, and the difference in appearance between a pre-fired base wad and post-fired base wad is plain to see. See Id. at 190-200. It cannot reasonably be argued that the shells used in the fiber release study were previously used, damaged, or degraded in any way. Furthermore, if age and/or integrity of the shells used in MVA's experiment were of

any real concern, the Defendants could have used different shells for their own experiment, but they chose not to do. Instead, they chose to use the same shells provided by the Plaintiff.[9]

As testified by Peter Diaczuk, the forensics expert hired by Dr. Compton to ensure the safety of all involved in the fiber release experiment, the "vintage" Remington shotshells functioned as new. Exhibit 35, Diaczuk Deposition Eldridge at 35. Diaczuk was in charge of designing a safe, secure way of holding and discharging the firearm, including a method of remotely firing the shotgun from outside the containment area. Id. at 57. He described the experiment as a safe and accurate depiction of the use of a 12-gauge shotgun. The ammunition was loaded and discharged properly. Id. The expended shotshells came out of the ejection port as intended and struck the backstop (target). Id. at 36. According to Mr. Diaczuk, everything functioned appropriately. The shotgun cycled, and the shot pellets struck the backstop target in a tight pattern. Id. at 77.

Defendants' suggestion there was some damage to the shells is simply not supported by the facts. Dr. Compton was asked at deposition about the appearance and functionality of the shells used in the experiment. While he was unaware of the

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[9] If Defendants were truly concerned about the age of the shells that the plaintiff in *Eldridge* had obtained, they could have had Spencer and Compton test some of their shells rather than solely rely on those the plaintiffs had obtained. (Exhibit 33, at p. 5, Resp. to RFP No. 2).

previous storage conditions of the shells, there was no apparent damage to them. Exhibit 36, Compton Deposition Eldridge at 65-66. The shot struck the target in a tight grouping, and they functioned as expected. Id.

MVA Designed Study in a Safe, Sound, and Reliable Manner. MVA designed its study in a safe, scientifically sound, readily reproducible, and environmentally-responsible manner. While it would be impossible to recreate precisely the conditions of each and every outdoor use of Remington shotshells, given the variability of environmental conditions on any given day, and indeed in any given location, MVA sought to test the essential conditions of use, namely - the discharge of an asbestos-containing shotshell from a shotgun. MVA chose for its experiment a Remington Model 1100 semi-automatic shotgun, the most popular semi-automatic shotgun ever produced and a favorite among duck hunters, and the same model that Hunt Eldridge used while duck hunting. Id. at 19. It chose not one but a variety of Remington shotgun shells, including low brass shells, high brass shells, and Magnum shells, each of different vintage but with the same base wad composition. It then designed three separate shooting events each involving the discharge of two shells over 15 minutes, which frequency was specifically designed to mimic that described by Mr. Eldridge's hunting companions during their early morning duck hunts in St. Charles, Illinois. Id.

The results of MVA's fiber release study demonstrate that significant concentrations of asbestos fibers are released to the environment every time a Remington shotshell is fired, no matter the vintage. MVA measured asbestos fibers on filters near the muzzle at the end of the shotgun, asbestos fibers near the discharge port at the side of the shotgun, asbestos fibers near the breathing zone of the shooter behind the shotgun, and asbestos fibers near the breathing zone of a hypothetical bystander or hunting companion. In every location, MVA measured asbestos fiber concentrations many times above background.

For safety reasons, nobody was allowed in the chamber during the experiment, so the shells were fired remotely. Id. at 64. The experiment was conducted in a containment chamber because Dr. Compton was not comfortable performing "an experiment that would result in an uncontrolled release of asbestos either to the environment or to the individuals" assisting him in the experiment. Id. at 130.

Dr. Compton used a negative air machine to provide makeup air to allow airflow in the chamber consistent with or conservative for a still day. Id. at 52-54. As to the importance of controlling the air flow, he testified that: "as a reproducible experiment, it's important to have a baseline set of understanding... to help understand the flow of fibers and particulate." Id. at 58.

MVA Study Provides Reliable Baseline for Assessing Outdoor Exposures. As explained by Christopher DePasquale, a Certified Industrial Hygienist who

assisted in collection of air samples during MVA's fiber release study, the purpose of the study was to evaluate the release of asbestos during firing of shotgun shells with asbestos base wads. Exhibit 37, DePasquale Deposition at 14. The findings indicate that the firing of asbestos shells release asbestos into the environment around the gun. Id. at 19. The study was not meant to recreate any shooter's exact exposure, which would be impossible, but the data is helpful in evaluating their potential exposure. Id. at 39. While outdoor wind could affect the dispersion of fibers, it could increase or decrease the exposure to a shooter, depending on which way it is blowing, which is common sense and within the ken of any ordinary juror. As DePasquale noted, "[I]f the shooter is firing and the wind is blowing into their face, they would be more readily inhaling the particulate that is released." Id. at 63.

Defendant argues that because MVA's study was conducted indoors, it is unreliable when evaluating an outdoor exposure; or, in the language of *Daubert*, that it doesn't "fit" the facts of the case. For all of the reasons previously addressed, it would be impossible to recreate outdoor weather conditions on any given day hunting outdoors. MVA made an effort to simulate the essential conditions of the exposure and maintain airflow in a manner consistent or conservative for a still day, as described by Dr. Compton.

The Utility of Chamber Studies in Evaluating Asbestos Exposures are Well-Recognized by the Medical and Scientific Community. The utility of a

chamber study exists in its ability to isolate and evaluate, in a controlled and reproducible method, how an asbestos-containing material may release asbestos fibers into the air when that material is handled. Chamber tests have been used for decades by regulatory agencies to evaluate asbestos exposures. Exhibit 30 at 92. In 1972, the National Institute for Occupational Safety and Health (NIOSH) utilized a small test room to measure asbestos exposures when repurposing burlap bags with asbestos debris. Id. at 92-93. In 1979, NIOSH and the Consumer Product Safety Commission (CPSC) collaborated to develop a chamber test to evaluate airborne asbestos structures released during use of hand-held hair dryers. Id. at 93. In 1985, the CPSC and the Environmental Protection Agency (EPA) used the same test chamber utilized in the hair dryer study to measure asbestos fiber release during work with asbestos paper, asbestos gloves, asbestos rope, asbestos furnace cement, and other products collected from retail stores. Id. Also in 1985, the Water Engineering Research Laboratory of the EPA conducted a series of glove box studies to evaluate fiber release during the cutting and sawing of asbestos cement board and the grinding of brake linings.

The utility of chamber studies in evaluating asbestos fiber release has also been documented in numerous peer-reviewed publications. In 1993, Millette and Mount published a study on the removal of valve packing in the Journal of Applied Occupational and Environmental Hygiene, which was performed in an abatement-

style containment area as opposed to the open environment where the activity typically occurred. Id. at 93. A study by the same authors in 1995 used a similar chamber to examine the release of asbestos fiber during removal of gaskets, due to the need to isolate the testing from any other source of asbestos and prevent ay fiber release from contaminating the building. Id. at 93-94. Similar approaches using chambers to evaluate asbestos fiber release have been published by a large number of researchers.

The chambers can range in size from small glove boxes, as used in early studies conducted by NIOSH, CPSC and EPA, to larger room-sized chambers. A common chamber size in published studies is a reusable room measuring approximately 10 feet x 12 feet x 8 feet (960 cubic feet). Id. at 94. Certain asbestos products have been studied extensively, in a variety of environments, establishing correlation between the asbestos fiber release in a small glove-box and a larger room with significantly more ventilation and air flow. Studies of asbestos-containing dental tape, for instance, which was used for a period of time to line molds for making dental impressions, have shown strong correlation of asbestos fiber concentrations in the immediate vicinity (approximately half a meter or less) of the source of fiber release. Id. at 112. Likewise, chamber studies have proven useful for potential exposures in unenclosed environments. A published study on work with asbestos-cement pipe showed "good agreement" between a chamber study

investigating the cutting of pipe with a power saw and historic studies of the same activity performed outdoors. Id.

When an interaction with an asbestos-containing material results in the generation of visible airborne dust, it is not a question of whether asbestos is released but rather how much asbestos is released. Even asbestos products with a binding element show a release of free fibers into the air on abrasion. This is notable because even nonfriable products, when subject to manipulation or abrasion, can readily release respirable asbestos fiber. Id. at 112.

Dr. Compton's Counting Methodologies are Reliable. Defendants unsuccessfully challenged Dr. Compton's asbestos fiber counting methodologies at deposition twice, misapprehending their purpose and application. The fact is that Defendants simply do not like the results of Dr. Compton's study, not that there is anything improper about his methodology. Defendant argues that Dr. Compton should have analyzed every air sample under every method, even though it is not necessary under the published methodologies, and suggests he chose counting methods to exaggerate the fiber count.

As patiently explained by Dr. Compton at deposition, the choice of testing method does not increase the concentration of asbestos: "The concentration that's there is what's there. It's what you choose to report that's important and the meaning

behind those different concentrations that you report." Exhibit 36 at 117. He described how and why he used the methods that he did:

> The AHERA and the PCM methods both are longstanding methods that are reliable and provide airborne fiber concentrations from collected air samples. But the ISO method allows you to look at the detailed configuration of different fibers that are detected. So, it's a bit more – it's a bit more difficult method, and it required a bit more scientific rigor, but it is useful.

Id. at 116.

Defendants Should Have Assumed Potential for Fiber Release. Defendants feign surprise at the results of Compton's study, as if it were inconceivable that a massive explosion within its 40% asbestos base wads might release some portion of its trillions of asbestos fiber. The truth is that Remington knew in the early 1960's that its asbestos wadded shotshells were prone to breakdown. In April 1963, it submitted a patent application for a new shotshell designed to improve reloadability, indicating:

> Current basewad designs are limiting the reloadability and functioning of today's shotshells. The limiting factors are breakdown of the basewad itself and excessive head expansion during firing due to the basewad failing to seal properly and failing to properly absorb the pressures generated in the shell when fired...
>
> This invention consists of a basewad encased in a plastic (polyethylene) sleeve which is contoured at one end to provide a positive, gas sealing overlay... The fact that the wad is completely enveloped in plastic means that no wad debris will be encountered in firing these shells. The wrap-around plastic skirt, tucked under the basewad, insures positive locking of the overlay... Since the flash hole in the basewad is also

> lined with plastic in this combination, no fibrous material will be exposed to the blast of the exploding primer.

Exhibit 38, U.S. 3,157,121 (filed Apr. 5, 1963).

Remington incorporated the new shotshell design into its target load shells in 1964, which encapsulated the asbestos base wad in a sleeve of durable plastic, locking it into the base of the shell. A promotional flyer advertised the easy reloading of the target loads, with a "[b]asewad enclosed in plastic insuring uniform height, gives positive gas sealing, prevents deterioration after repeated use of cases." Exhibit 39, 1964 Target Load Flyer.

A 1965 article from Gun Digest entitled *Loading the Plastics* describes how Remington's low brass plastic shells were offered in two styles, target and field. Exhibit 40, 1965 Gun Digest. The target load shells, consistent with Remington's patent and flyer, are described as featuring a "greatly improved" base wad "completely covered in durable plastic for multiple reloads." While the new target load is "a more expensive case to make, obviously, as the base wad cover adds one more piece to the shell's construction," it is described as greatly improved given the flash hole does not become "clogged with bits of the base wad." The base wad in the field load shells, on the other hand, "leaves something to be desired, as it tends to go to pieces under continued reloading, causing those bloopers that occur because parts of the base wad obstruct the flash hole." The "field load shells" are what are at issue here.

One of the many shortcomings of the base wad in Remington's field loads was its wax binder which had a tendency to melt due to high temperatures developed during firing. The melting of the wax binder would cause the base wad to fragment and become loose, making it "extremely difficult, if not impossible, to reload the shell." Exhibit 41, U.S. 3,978,794 (filed Dec. 5, 1974).

Indeed, if anything was "slight" about the base wad, it was not the amount of asbestos fiber, but rather the amount of binder. As testified by corporate representative Ray Anderson in the *Benson* matter, in addition to asbestos: "There was wax, wood flour and a small amount of a binder, which I believe was butyl rubber, something along that line… a very small quantity, as I recall it." Exhibit 21 at 224.

The patent filing for Remington's asbestos-containing base wad described a "modified process" for making the base wads which utilized the addition of calcium resinate to the wax, which process "is useful to cut down on the amount of 'dusting' which occurs when base wads made according to the original process are used." By all accounts, however, this modified process was never put into production. Calcium resinate was never used in the production formula. Exhibit 42, Anderson Deposition Eldridge at 152-154; Exhibit 43, Wildman Deposition Eldridge Vol. 1 at 66, 72-73). It was understood by Remington that there was a considerable amount of dust and debris generated during firing of its asbestos shotshells. Experimental lab notebooks

from the 1960's through the 1970's reflect studies of the amount of dusting and "wad debris" generated during firing of Remington asbestos-containing shotshells. Exhibit 44, Remington Lab Notebook at 133; Exhibit 45, Wad Debris.

In fact, personal protective equipment including masks and respirators were provided to employees involved in ballistics testing at the Bridgeport plant, which was done in ventilated firing ranges in the tunnels under the plant. Exhibit 42 at 107, 133-136. Anybody who worked in an asbestos handling area was provided a full-face mask or cartridge type respirator to protect against inhalation of dust. Id.

Defendant's suggestion that it could not reasonably have assumed that its asbestos base wads were prone to fiber release simply cannot be squared with the facts. In support of its argument that the asbestos was encapsulated and locked in, Defendant cites testimony of Ray Anderson from the *Benson* matter, which case concerned target loads as opposed to field loads. As discussed above, the construction was different. The target load shells contained a durable plastic sleeve that encased the asbestos fiber and protected it from direct contact with the gunpowder and priming mixture. The field load shells did not.

Both Dr. Frank and Dr. Zhang rely on Dr. Compton's study to show that the Remington shotshells release asbestos when fired and cause exposure to shooters like Howard Altena and Gene Schoepke during use of the shells. Exhibit 49, Dr. Frank's Deposition, 8/5/24 at 14, 79. Taking into account each man's frequent and

regular use of Remington shotshells it is the opinion of both Dr. Frank and Dr. Zhang that the asbestos in the shotshells contributed to cause their mesotheliomas. Each man utilized Remington shotshells multiple times each year, for many years. *Id.* at 106.

Drs. Frank and Zhang support Compton's study and their opinions are admissible. Defendants have moved to exclude Drs. Frank and Zhang on the narrow grounds that their opinions are based on Compton and if his testimony is excluded their must also be excluded. Defendants do not challenge their expertise or methodology. They are both well respected experts with years of experience treating patients and determining whether asbestos exposure was a cause of their disease. Dr. Frank was in fact a key witness in the only other Delaware asbestos *Daubert* hearing, *In Re: Asbestos Litigation*, 900 A.2d 120 (2006). Based on his experience and assuming that the shotgun shells contained asbestos and that there was some release upon firing, Dr Zhang came to a preliminary conclusion that there was causation in both cases even before seeing Compton's report. As he stated in his deposition, if Compton's report showed no release of asbestos fibers his opinion would have changed. Exhibit 50, Zhang's Deposition, 8/30/24 at pp. 30, 33, 42, 128, 134, 137.

Neither Zhang nor Frank as Occupational Physicians who regularly consider the nature of their patient's exposure to asbestos and the peer reviewed literature including countless simulation studies had any problem, whatsoever, with the fact

that fact that Dr. Compton's study was done in doors as opposed to outdoors. In fact, the only criticism of any study of release of asbestos from firing the shotgun shell was from Dr. Frank who questioned Mr. Spencer's conclusion that there was no release.

The fact that these two experts, who Defendants do not really challenge, found that Compton's findings are something to rely on should be persuasive to the Court in allowing his testimony.

III. DAUBERT IN DELAWARE

There is no dispute among parties as to the requirements of *Daubert*. It is interesting, however, that Defendants failed to cite the Court's opinion involving the first and only (until the instant matter), Delaware asbestos cases involving a *Daubert* evidentiary hearing. *In Re: Asbestos Litigation*, 900 A.2d 120 (2006). In that case with multiple witnesses (including Dr. Frank) and a number of contested issues including the fiber count when someone is exposed to brakes, the Court concluded that the issue of whether exposure to friction products could cause various asbestos related disease including Mesothelioma it was best left to the jury.[10] Moreover, in its decision the Superior Court correctly noted that it must respect the Jury's constitutionally guaranteed role as the decider of the issues of fact and that the best

[10] Based on this decision the case went to trial and the Del. Supreme Court upheld the verdict. *Grenier v. GMC (In re Asbestos Litig.)*, 981 A.2d 531 (Del. Super. Ct., Apr. 8, 2009).

way of dealing with weak and "shaky " expert opinions are via 'vigorous cross-examination , presentation of contrary evidence and careful instruction on the burden of proof" *Id.* at 140-144, quoting *Minner v. American Mortg. & Guar Co.*, 791 A2d. at 841.

There appears to be two Delaware *Daubert* cases which deal with indoor and outdoor exposure when testing for a toxic substance, *New Haverford P'ship v. Trout*, 772 A.2d 792 (2001) and *Podrasky v. T&G, Inc.*, 2004 Del. Super. (Nov. 15, 2004). In *New Haverford* the Delaware Supreme Court upheld a verdict in a mold case in which the trial judge's decision allowed testimony over a *Daubert* challenge. At issue, as here, was air circulation and the air samples. The defendants challenged the failure of the plaintiff's expert to do certain testing. The court rejected that stating, " ..we conclude that the failure to conduct extensive baseline testing goes to the weight of the expert's opinion not their admissibilty.... The foundation of an expert's causation opinion need not be established with the precision of a laboratory experiment."

Podrasky is a Superior Court which was not appealed. Although the Court granted the *Daubert* motion, its decision is in fact helpful to the plaintiffs. At issue was indoor v. outdoor. The plaintiff's expert conducted the test outdoor and the Court excluded it because there were too many variables with wind condition to be reliable and relevant. It stated that **"Reliable test results, however, require predictable**

and controlled testing conditions." *Podrasky* at 28. That is what Compton's tests allowed, Spencer's did not.

CONCLUSION

Studies like this are not only relevant and admissible but are a fundamental building block of Plaintiffs' case. Dr. Compton's testimony will help the jury understand and appreciate the nature of Defendants' asbestos-containing shotshells, and how significant levels of asbestos fibers are released when they are used as intended. This information will help the trier of fact understand the evidence and determine a fact in issue, which forms the basis for the admission of expert testimony under Delaware rules. The fact that the conditions of MVA's experiment may not have replicated exactly the outdoor hunting conditions on any given day goes to the weight of the study, not its admissibility.

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