UNITED STATES BANKRUPTCY COURT
WESTERN DISTRICT OF NORTH CAROLINA
CHARLOTTE DIVISION

In re	:	Chapter 11
ALDRICH PUMP LLC, *et al.*,[1]	:	Case No. 20-30608 (LMJ)
Debtors.	:	(Jointly Administered)

NOTICE OF FILING OF UNSEALED DEBTORS' MOTION *IN LIMINE* TO PRECLUDE OPINIONS ASSERTED BY THE COMMITTEE'S EXPERTS ON DISCOUNT RATES

PLEASE TAKE NOTICE that Aldrich Pump LLC and Murray Boiler LLC, as debtors and debtors in possession (together, the "Debtors"), hereby file this Notice (the "Notice") of Filing of Unsealed *Debtors' Motion in Limine to Preclude Opinions Asserted by the Committee's Experts on Discount Rates* [Docket No. 3185] (the "Motion"). In support of this Notice, the Debtors respectfully state as follows:

1. On June 25, 2026, the Debtors filed the Motion under seal pursuant to the *Agreed Protective Order Governing Confidential Information* [Docket No. 345]. That same day, the Debtors filed the *Debtors' Motion to File Documents Under Seal* [Docket No. 3186] (the "Motion to Seal").

2. Since the filing of the Motion, the parties have agreed that the Motion can be unsealed in its entirety pursuant to the *Stipulated Order Regarding Confidentiality Issues for Phase I Estimation Trial* [Docket No. 3265] (the "Order") with the corresponding Motion to Seal withdrawn. Accordingly, attached hereto as Exhibit A is an unsealed version of the Motion.

[1] The Debtors are the following entities (the last four digits of their respective taxpayer identification numbers follow in parentheses): Aldrich Pump LLC (2290) and Murray Boiler LLC (0679). The Debtors' address is 800-

Dated: August 26, 2026
Charlotte, North Carolina

Respectfully submitted,

/s/ Matthew L. Tomsic

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Exhibit A

Unsealed *Debtors' Motion in Limine to Preclude Opinions Asserted by the Committee's Experts on Discount Rates*

UNITED STATES BANKRUPTCY COURT
WESTERN DISTRICT OF NORTH CAROLINA
CHARLOTTE DIVISION

In re ALDRICH PUMP LLC, *et al.*,[1] Debtors.	Chapter 11 Case No. 20-30608 (LMJ) (Jointly Administered)

DEBTORS' MOTION IN LIMINE TO PRECLUDE OPINIONS ASSERTED BY THE COMMITTEE'S EXPERTS ON DISCOUNT RATES

Aldrich Pump LLC ("Aldrich") and Murray Boiler LLC ("Murray"), as debtors and debtors in possession (together, the "Debtors"), hereby move this Court for entry of an order precluding the experts retained by the Official Committee of Asbestos Personal Injury Claimants (the "Committee"), Dr. Andrew J. Sackett and Yvette R. Austin (collectively the "Committee Experts"), from attempting to introduce evidence or testimony concerning the nominal discount rate the Court should employ in determining the net present value of the Debtors' asbestos liabilities as those opinions are based on inaccurate legal conclusions not within their expertise. In support of this *Motion in Limine to Preclude Opinions Asserted by Committee Experts on Discount Rates* (the "Motion"), the Debtors respectfully state as follows:

PRELIMINARY STATEMENT

1. The Debtors appreciate that expert opinions rendered by financial experts are usually challenged through vigorous cross examination at trial. But when the proffered expert opinion is so blatantly unreliable and inapposite to the facts of the case, courts can—and should—exclude the testimony at the outset. The Court should do so here, which will narrow

[1] The Debtors are the following entities (the last four digits of their respective taxpayer identification numbers follow in parentheses): Aldrich Pump LLC (2290) and Murray Boiler LLC (0679). The Debtors' address is 800-E Beaty Street, Davidson, North Carolina 28036.

one of the significant issues in this proceeding and allow the Court and the parties to focus on the many other complex issues presented by the parties' competing estimations.

2. From inception, the primary purpose of estimation in these cases has been to estimate the Debtors' liability for present and future asbestos claims to assist in formulating a plan of reorganization. Estimation thus involves assessing the ***amount of trust funding*** that, if placed into a trust, would be sufficient to satisfy the Debtors' current and future asbestos-related liability. The Court has recognized that estimation provides it with information necessary to assess, for confirmation purposes, the adequacy of the trust funding in any proposed plan of reorganization.

3. Given the long latency of asbestos-related disease, there is no dispute that claims would continue to be filed against the Debtors in the tort system for several decades. Consistent with 11 U.S.C. § 502 and other estimations in asbestos-related bankruptcies, the parties' experts have estimated the present value of the Debtors' asbestos liability as of June 18, 2020 (the "Petition Date"). The goal of discounting future liabilities to present value is to identify "what present amount of investment will yield the future amounts required to satisfy those" future liabilities. Masters, Mates & Pilots Pension Plan v. USX Corp., 900 F.2d 727, 733 (4th Cir. 1990).

4. While each of the Initial Expert Reports exchanged on September 15, 2025 discounted the Debtors' estimated liabilities to present value, the experts used materially different discount rates. The experts retained by the Debtors (Dr. Charles H. Mullin) and the Future

Claims Representative ("FCR") (David McKnight) use and/or contemplate similar nominal discount rates, ranging from 4.5%-6.5% (Mullin) to 4.48%-6.11% (McKnight).[2]

5. By contrast, the Committee's principal expert, Dr. Sackett, uses a 1% nominal discount rate derived from the use of "spot" rates of various Treasury securities that existed on June 18, 2020—the Petition Date.[3] When combined with his inflation adjustment, Dr. Sackett's estimation uses a negative "real" discount rate of -2.2%, effectively assuming that a dollar received ten, 20, or even 30 years in the future is worth more than a dollar received today, an assumption at odds with the fundamental "time value of money" principle.[4] Dr. Sackett's anomalous real discount rate accounts for a divergence of nearly ***one billion dollars*** from the estimations prepared by Dr. Mullin and the Brattle Group.[5]

6. A significant portion of that nearly billion dollar difference is driven by Dr. Sackett's improper reliance upon (and, in her rebuttal report, Ms. Austin's improper support of) use of the nominal spot discount rate that existed on the Petition Date. Their support for the use of the nominal spot discount rate that existed on the Petition Date was not finance texts or economic opinions, it was based solely on their interpretation of case law.[6]

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2 A discount rate can be expressed in either "nominal" or "real" terms. If the discount rate incorporates inflation, it is called a "nominal" rate; if it does not, it is called a "real" or "net" rate.

3 The parties' experts refer to the yields of Treasury bonds as of the Petition Date as "spot" rates, as they reflect the yields of Treasury bonds on that date. See McKnight Dep. Tr. at 180:8-15; Sackett Dep. Tr. at 214:11-215:8; Martin Dep. Tr. at 167:14-168:11; Austin Dep. Tr. at 192:14-193:6, 304:2-9. Excerpts of deposition testimony are attached as Ex. A hereto, sorted alphabetically by last name.

4 While Dr. Sackett's chosen inflation rate is likewise incorrect, that is not a subject of the instant Motion and will instead be addressed through witness testimony and argument at the Phase 1 Estimation Trial.

5 The Committee later served the Rebuttal Report of Yvette R. Austin to, among other things, attempt to support Dr. Sackett's discount rate, critique the discount rates used by Dr. Mullin and the Brattle Group, and adjust Dr. Mullin's estimation to "correct" for certain "errors," including as to the discount rate used in his estimation.

6 See, e.g., Sackett Dep. Tr. at 233:9-11 ("It is based on my knowledge of bankruptcy cases, not my knowledge of economics."); id. at 190:20-21 (understanding of petition-date valuation came "[f]rom practicing law partially in the bankruptcy context"); id. at 191:2-4 (he "checked a couple of cases" to confirm); id. at 223:1-7 (citing only the Garlock decision); Austin Dep. Tr. at 207:2-9 (listing three court

7. The Committee Experts' opinions are based on nothing but inaccurate legal interpretations of the Bankruptcy Code and prior court decisions. Even if those interpretations were correct (and they are not), they would not constitute admissible expert testimony but rather infringe upon this Court's role to determine the law. Nothing in 11 U.S.C. § 502 "requires" the use of the spot prices of Treasury securities that existed on a single day, six years ago. None of the cases cited by the Committee Experts support such a proposition; indeed, the only case Dr. Sackett points to in his report, Garlock, is directly to the contrary. Ms. Austin's suggestion in rebuttal that 11 U.S.C. § 502 precludes consideration of post-petition information for purposes of valuing claims as of the Petition Date also runs directly counter to the use of such information—such as Personal Injury Questionnaires ("PIQs")—in numerous mass-tort estimations under Section 502, including this very case. As importantly, Ms. Austin's opinion ignores well-established law that, in estimating claims, bankruptcy courts should use whatever methods are best suited to the particular circumstances. Once stripped of their improper reliance on these legal conclusions, the Committee Experts have no basis for their use of the spot discount rate that existed on the Petition Date.

8. Indeed, the Committee Experts' discount rate opinions do not satisfy the requirement that expert opinions "fit" the purposes of the case. The purpose of this proceeding is to determine what amount of money needs to be deposited into a trust ***today*** to fully satisfy the Debtors' current and future asbestos-related liability. The use of abnormal rates on Treasury securities from a ***single day, six years*** ago does not inform what "present amount of investment will yield the future amounts required to satisfy" the Debtors' liabilities for decades to come.

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opinions in Appendix D as the basis for petition-date valuation); id. at 210:17-212:2 (admitting she did not look at what Garlock says about choosing the discount rate, and that she cites it only "for the proposition that having chosen the rate ... what is the date to which you are discounting back to, and it is petition date").

Masters, Mates & Pilots, 900 F.2d at 733. Nor will the use of such stale, aberrant rates inform the Court's assessment of whether the proposed trust funding satisfies various confirmation requirements. When courts select discount rates to determine present values for various confirmation purposes, they naturally use "current" or "prevailing" rates existing at the time of the confirmation hearing.

9. Finally, there is no dispute that the discount rate advanced by the Committee Experts is based on interest rates from an aberrational, policy-distorted period coinciding with the height of the COVID pandemic. They are not reflective of historical nor future interest rates. Dr. Sackett acknowledges that the spot rates on Treasury securities as of the Petition Date were "very low" and amongst the "lowest point in recent history."[7] Ms. Austin acknowledges the COVID pandemic was a period of economic stress and that the Federal Reserve undertook intervention efforts that affected the spot rates of Treasury securities at that time.[8] Courts have uniformly rejected the use of discount rates derived from such abnormal periods, especially for discounting long-term liabilities. In fact, cases have granted motions to exclude expert testimony incorporating such rates, holding such testimony fails the reliability requirements of Federal Rule of Evidence 702.

BACKGROUND

A. The Purpose of the Estimation Proceeding

10. On April 18, 2022, the Court entered the *Order Authorizing Estimation of Asbestos Claims* (the "Estimation Order") [Dkt. 1127] granting in substantial part the *Motion of the Debtors for Estimation of Prepetition Asbestos Claims* (the "Estimation Motion"). The

[7] Sackett Dep. Tr. at 221:18-222:11.

[8] See Austin Dep. Tr. at 302:14-303:4.

Estimation Motion was filed in connection with the proposed $545 million Debtors/FCR plan of reorganization filed on September 24, 2021 [Dkt. 831].

11. The primary purpose of estimation in this case has always been to assist the parties in formulating a plan of reorganization by establishing the ***amount of trust funding*** sufficient to satisfy the Debtors' asbestos liability. In the Estimation Motion, the Debtors stated: "[I]n contested cases like these, estimation often is critical (and, indeed, the only effective device) to address the central dispute in the case—the ***amount of funding sufficient to satisfy*** a debtor's asbestos liability through a section 524(g) trust." Dkt. 833, ¶ 19 (emphasis added). And when the Court granted the Estimation Motion, it stated: "The motion seeks to justify a trust and the trust is ***going to be funded with a defined sum*** and that trust must treat both the present and the future claims and do so equally." Jan. 27, 2022 Hr'g Tr. at 13:15-18. This fundamental purpose has been reiterated multiple times throughout the course of this case.[9]

12. The Court has also stated that estimation provides necessary information to assess, for confirmation purposes, the adequacy of the trust funding in any proposed plan of reorganization. See Jan. 27, 2022 Hr'g Tr. at 10:23-11:3 (Court: "There are proper purposes for estimation, the ones that have been argued, assisting in negotiating and formulating a plan,

[9] See, e.g., Dec. 2, 2021 Hr'g Tr. at 35:22-25 (FCR counsel: "We think there should be an estimation hearing and the estimation hearing should determine ***whether the $545 million is sufficient to pay*** valid asbestos claims in this case.") (emphasis added); Oct. 24, 2024 Hr'g Tr. at 56:8-20 (Debtors' counsel: noting primary purpose of estimation is "to provide an objective judicial determination about ***the adequacy of funding for the trust***," noting "[w]e need to know what the appropriate amount is to fund a trust to compensate claimants") (emphasis added); id. at 95:5-17 (FCR counsel: "What we want to do is create a trust which ***is funded so that claimants are paid in full*** … So the only question ***is [] that number right***? … That's what the estimation is going to tell us.") (emphasis added); Mar. 27, 2025 Hr'g Tr. at [6-7] (Court: "I genuinely believe that a[n] [estimation] process that works towards obtaining and sharing competing numbers … is the way … forward, to get money in the hands of the claimants").

demonstrating confirmability of that plan, voting, determining how many claims are, are out there and what their magnitude is, the best interest of creditors, evaluation.").[10]

B. The Need to Determine the Present Value of Future Liabilities

13. In asbestos-related bankruptcy cases, a vast majority of the claims being estimated typically will be asserted decades into the future, frequently described as "future claims." Bankruptcy courts charged with estimating asbestos-related claims generally use the Petition Date as the demarcation between current and future claims. As a result, the future claims are discounted to present value at the Petition Date in order to put them on equal footing with current claims. See, e.g., In re Garlock Sealing Techs., LLC, 504 B.R. 71, 88 (Bankr. W.D.N.C. 2014) ("Finally, a discount rate should be applied to bring the future nominal value of claims back to the petition date.") (citing In re Eagle–Picher Indus., Inc., 189 B.R. 681, 682 (Bankr. S.D. Ohio 1995)).

14. The goal of present-value calculations, here and in analogous contexts, is to identify the amount necessary at the time of payment that, together with an expected rate of return, will produce an amount equal to the value of future obligations when those obligations come due. See Masters, Mates & Pilots, 900 F.2d at 733 ("An interest rate, or rate of return, is applied in order to determine what present amount of investment will yield the future amounts required to satisfy those vested benefits.… The higher the assumed rate of return, then the less present investment is needed to pay out the future benefits."); In re Birdneck Apartment Assocs., II, L.P., 156 B.R. 499, 508 n.15 (Bankr. E.D. Va. 1993) ("The discount rate is the rate of return

[10] See also *Order Authorizing Estimation of Current and Future Mesothelioma Claims*, *In re Bestwall LLC*, Dkt. 1577, ¶ 2 (noting "the Debtor has stated that estimation will facilitate the parties' formulation of a plan, assist their efforts to reach agreement on a consensual plan, and enable the Court to confirm any proposed plan"); *Order Authorizing Estimation of Current and Future Mesothelioma Claims*, *In re DBMP LLC*, Dkt. 1239, ¶ 3 ("Estimation is not being conducted for purposes of distribution, but rather for plan negotiation and confirmation purposes.").

which equals the sum of the real rate of return anticipated in the investment, plus a change in value and any risk premiums associated with the specific investment when compared to alternative investments.").

C. The Parties' Competing Estimations and Discount Rates

15. On September 15, 2025, the Debtors, the Committee, and the FCR exchanged Initial Expert Reports from Dr. Mullin, Dr. Sackett, and Mr. McKnight, respectively.[11] All three experts prepared individual estimates based on the Debtors' tort values, while the Debtors' expert also prepared an alternative estimate based on a legal liability theory. The three experts ultimately use a similar framework, all utilizing information from the Debtors' claims database, for estimating the Debtors' liability under a tort-system methodology, which, in streamlined fashion, can be expressed as follows:

Payments = Projected Mesothelioma Claims Against the Debtors x Claims Payment Rate x Average Settlement Value

All three experts estimated similar numbers of claims through roughly the same forecast period (approximately 2060). All three reach similar conclusions as to payment rates, and all three start with similar average settlement values based on the Debtors' historical settlements.

16. As a result, Dr. Mullin and Mr. McKnight reached similar conclusions regarding the Debtors' estimated aggregate asbestos liability, notwithstanding slightly different approaches in applying the general estimation framework. Dr. Mullin estimated a range, under a tort-system methodology, of $425 million to $750 million. Mr. McKnight estimated a range, under a tort-system methodology, of $470 million to $720 million. Dr. Sackett's estimation, by contrast, was

[11] Since this Motion cites to numerous provisions of the various expert reports, and ultimately seeks to exclude opinions set forth in such reports, the Debtors will provide the parties' expert reports (or pertinent excerpts) upon the Court's request since the Court does not have such reports.

the clear outlier. Despite using the same general framework, his report produced an estimate of ***$3.2 billion***.

17. Dr. Sackett's use of a materially different discount rate is a key factor driving this extraordinary discrepancy. As noted, Dr. Sackett uses a 1% "nominal" discount rate which is based on the rough average of the spot prices of various Treasury securities—three-month, ten-year, and 30-year—that existed on the Petition Date.[12]

18. By contrast, Dr. Mullin and Mr. McKnight have offered both "trust return" and "risk free" rates forecasted at the time of their valuation of the liabilities (i.e. the issuance of their reports).[13] Both Dr. Mullin and Mr. McKnight also offer a "trust return" discount rate of 6.0% to 6.5% based on existing 524(g) asbestos trusts' historical investment performance. Dr. Mullin's nominal "risk-free" discount rate is 4.5% (based on 5-year, 10-year, 20-year, and 30-year U.S. Treasury notes), and Mr. McKnight's nominal "risk-free" rate is 4.48%, both based on forecasted Treasury yields as of the date of their expert reports.

19. This Motion concerns Dr. Sackett's improper use of the spot discount rate that existed on the Petition Date to discount the nominal value of his estimate of the Debtors' asbestos liabilities and, relatedly, Ms. Austin's rebuttal opinion supporting the same.

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[12] Per Dr. Sackett's report, the interest rates as of the Petition Date were 0.16% for 3-month Treasuries, 0.71% for 10-year Treasuries, and 1.47% for 30-year Treasuries. See Sackett Rpt., ¶ 99 n.32.

[13] Unlike the Committee Experts, Dr. Mullin and Mr. McKnight do not contend that the law requires a particular discount rate. Instead, they offer economic and financial analysis based on forecasted U.S. Treasury yields, Congressional Budget Office projections, and the historical investment returns of comparable § 524(g) trusts. See Mullin Rpt. ¶¶ 163-168; Mullin Rebuttal Rpt. ¶¶ 73-74; McKnight Rpt. ¶ 97. Dr. Mullin expressly leaves the ultimate selection to the Court, explaining that the appropriate rate "depends [on] what question the court wants answered" and that he has only "quantified" the present value under each alternative rather than expressing an opinion as to which alternative the Court should adopt. See Mullin Dep. Tr. at 223:1-9. Similarly, Mr. McKnight provided two quantifications of his net present value analysis of the Debtors' asbestos liabilities, one using the "risk-free rate" and one using a "diversified portfolio combining debt, equity, and cash" like that employed by existing asbestos trusts. McKnight Rpt. ¶ 97.

LEGAL STANDARDS

A. Standards for Estimation of Claims Under 11 U.S.C. § 502(b)

20. "While title 11 authorizes the bankruptcy court to estimate unliquidated and contingent claims when necessary for the prompt administration of the bankruptcy estate, see 11 U.S.C. § 502(c), it does not provide methods for conducting such estimations." Adams v. Cumberland Farms, Inc., 1996 WL 228567, *4 (1st Cir. May 7, 1996); see also Bittner v. Borne Chemical Co., 691 F.2d 134, 135 (3d Cir. 1982) ("The Code, the Rules of Bankruptcy Procedure … and the Suggested Interim Bankruptcy Rules … are silent as to the manner in which contingent or unliquidated claims are to be estimated."). Nor is there any "mandated method in federal law for the determination of discount rates so as to reduce a claim to its present value." In re Mirant Corp., 332 B.R. 139, 156-57 (Bankr. N.D. Tex. 2005) (citing St. Louis Sw. Ry. Co. v. Dickerson, 470 U.S. 409, 412 (1985)).

21. "[I]n estimating claims, 'bankruptcy courts should use whatever method is best suited to the particular circumstances.'" Adams, 1996 WL 228567 at *4 (quoting Lawrence P. King, 3 Collier on Bankruptcy ¶ 502.03, at 502–76 (15th ed. 1995)); see also In re Denke, 524 B.R. 644, 653 (Bankr. E.D. Va. 2015) ("Neither the Code nor the Rules prescribe any method for estimating a claim, and it is therefore committed to the reasonable discretion of the court, ... which should employ whatever method is best suited to the circumstances of the case." (citation omitted)). Accordingly, the Court's approach to estimation in this case—including its selection of an appropriate discount rate—should be consistent with the goals and purposes of estimation here.

B. Standards for Admissibility of Expert Opinion

22. Federal Rule of Evidence 702 permits expert testimony only if the proponent establishes, by a preponderance of the evidence, that the testimony satisfies the Rule's

requirements for helpfulness, sufficient factual basis, reliable methodology, and reliable application to the facts. See Fed. R. Evid. 702(a)-(d); Sardis v. Overhead Door Corp., 10 F.4th 268, 281 (4th Cir. 2021). The Court's gatekeeping obligation applies even when the Court is the factfinder. While in bench trials, the gatekeeping function may be relaxed, but the Court may not abandon the admissibility inquiry altogether; a separate Rule 702 determination must still be made at some point. See Acosta v. Vinoskey, 310 F. Supp. 3d 662, 667 (W.D. Va. 2018).

23. This Court's gatekeeping inquiry requires it to ensure that proposed expert testimony "both rests on a ***reliable*** foundation and is ***relevant*** to the task at hand." Sardis, 10 F.4th at 281 (quoting Nease v. Ford Motor Co., 848 F.3d 219, 229-30 (4th Cir. 2017)) (emphases in original). Rule 702's relevance requirement is one of "fit": "'Fit' means that "'the expert's testimony must be relevant for the purposes of the case and must assist the trier of fact.'" Abraham v. Ocwen Loan Servicing, LLC, 321 F.R.D. 125, 151 (E.D. Pa. 2017) (citations and internal quotation marks omitted); see also Daubert v. Merrell Dow Pharmas., Inc., 509 U.S. 579, 591-92 (1993).

24. Expert testimony also should be excluded if it offers legal conclusions. See United States v. Barile, 286 F.3d 749, 760 (4th Cir. 2002). While experts may address technical matters, industry practices, or economic concepts within their expertise, they may not instruct the factfinder on domestic law, interpret legal authorities for their legal effect, or opine on what the law requires. See United States v. Wilson, 133 F.3d 251, 265-66 (4th Cir. 1997); Brainchild Surgical Devices, LLC v. CPA Glob. Ltd., 144 F.4th 238, 253-54 (4th Cir. 2025). "The only legal expert in a federal courtroom is the judge," and "the meaning of [a] statute and regulations [is] a subject for the court, not for testimonial experts." United States v. Cortez, 205 F. Supp. 3d 768, 776 (E.D. Va. 2016) (quoting United States v. Caputo, 517 F.3d 935, 942 (7th Cir. 2008)).

"[A]n expert telling a judge how to interpret a rule or statute does nothing more than give an attorney a redundant means of presenting legal argument to the Court." Id.

ARGUMENT

I. THE COMMITTEE EXPERTS OFFER NOTHING BUT IMPROPER AND MISTAKEN LEGAL INTERPRETATIONS TO SUPPORT THEIR DISCOUNT RATE OPINIONS.

25. Neither Dr. Sackett nor Ms. Austin offer any economic reasoning or other valid expert opinion testimony to support the use of these abnormally low spot discount rates that existed on the Petition Date to discount decades of future asbestos claims to present value. Instead, their only bases are their inappropriate and inaccurate legal conclusions about case law. They are, therefore, not proper expert opinions and Dr. Sackett and Ms. Austin should be barred from providing them. Absent these improper legal conclusions, Dr. Sackett and Ms. Austin have no other disclosed basis for their opinions that the discount rate utilized should be the spot rates that existed on the Petition Date, and therefore those opinions should be excluded.

26. Dr. Sackett[14] testified it was his "understanding" that it was "appropriate" under "governing law" to use the spot rates of Treasury securities as of the Petition Date. Sackett Dep. Tr. at 218:10-13, 219:16-220:1. His report cites the estimation decision in Garlock as his only support for that understanding. Sackett Rpt. ¶ 100. Ms. Austin, again citing Garlock and adding two other decisions, opines that "[b]ankruptcy is often intended to determine the value of liabilities as of the petition date and courts in asbestos bankruptcies have adopted this approach when selecting discount rate assumptions." Austin Rebuttal Rpt. ¶¶ 58-61, Appx. D.

[14] This narrow Motion in Limine will not be the only objection the Debtors have to Dr. Sackett's testimony. For reasons that will be demonstrated at the Phase 1 Trial, Dr. Sackett is unqualified to offer any of his opinions in this case. He has no degrees or specific expertise in economics, finance, or statistics relevant to this matter. He has never been qualified as an expert by any court on any subject, and his only unique qualifying experience appears to be that he was previously a lawyer working at one of the Committee's law firms (Caplin & Drysdale).

27. Dr. Sackett's and Ms. Austin's opinions as to the legal basis for supporting use of a spot discount rate are not admissible expert testimony. Rather, they constitute legal conclusions this Court is more than qualified to make. See Cortez, 205 F. Supp. 3d at 776 ("the meaning of [a] statute and regulations [is] a subject for the court, not for testimonial experts") (quoting Caputo, 517 F.3d at 942); Barile, 286 F.3d at 760; Wilson, 133 F.3d at 265-66; Brainchild Surgical Devices, 144 F.4th at 253-54. They are inadmissible on that basis alone.

28. The cited cases do not support these opinions. See also In re Mirant, 332 B.R. at 156-57 (stating there is no "mandated method in federal law for the determination of discount rates so as to reduce a claim to its present value"). Quite the opposite. Indeed, in Garlock, Judge Hodges accepted a discount rate based on the ***most current*** Congressional Budget Office's ***long-term forecasted*** rates ***as of the time the debtor's expert conducted his valuation***, which was years after the petition date. See Garlock, 504 B.R. at 97; Report of Charles E. Bates, PhD (Feb. 15, 2013), at 117 n.59 (indicating use of CBO's *2012* Long-Term Budget Outlook in a case where the bankruptcy petition was filed in 2010) (attached as Ex. B hereto).[15]

29. When confronted with these facts, Dr. Sackett suggested Judge Hodges "contradicted himself in his opinion" because "[h]e said it's appropriate to use it as of the petition date and then he accepts an estimate – it's not of the petition date, then he's not being particular and consistent." Sackett Dep. Tr. at 229:19-230:6. This, of course, is more improper and inadmissible legal opinion. But it is also mixing apples and oranges. The fact that 11 U.S.C. § 502(b) speaks of estimating a claim "as of the date of the filing of the petition," does not dictate the petition date is the proper date for measuring a discount rate. As noted, Garlock used

[15] CBO's 2012 Long-Term Budget Outlook was the latest such report at the time Dr. Bates prepared his report in Garlock. Garlock filed bankruptcy on June 5, 2010.

forecasts of long-term interest rates ***as of the date of the expert's estimation*** (years after the petition date) for purposes of valuing claims as of the petition date. Likewise, in Eagle-Picher, the Court used the mid-point of "current" interest rates used by two of the experts. See In re Eagle-Picher Indus., 189 B.R. 681, 692 (Bankr. S.D. Ohio 1995).

30. Ms. Austin also points to the estimation decisions in Specialty Products and Owens Corning in an effort to support her own flawed rebuttal opinions concerning use of the discount rate that existed on the Petition Date.[16] Neither lend her the support she suggests. In Owens Corning, the court simply stated that "claims are to be valued as of the petition date"; the decision contains no discussion or holding regarding the proper date of the discount rate utilized to assist in that valuation. In re Owens Corning, 322 B.R. 719, 721-22 (Bankr. D. Del. 2005). In In re Specialty Prods. Holding Corp., 2013 WL 2177694, *24-25 (Bankr. D. Del. May 20, 2013), the court accepted an expert's use of a discount rate based on an interest rate as of the petition date without any substantive discussion. Notably, in neither Specialty Products nor Owens Corning was there any argument or indication that the interest rates used were aberrational or would lead to anomalous results, nor was there any dispute over the appropriate date for the selection of the rate used, as is the case here. And of course, as with her and Dr. Sackett's opinions about what the Garlock decision says, Ms. Austin's opinions as to what Owens Corning and Specialty Products mandate are similarly inadmissible legal conclusions.

31. Ms. Austin further maintains that it would be "inconsistent with economic theory and best practice to use information that is not known as of the date of valuation to value any asset." Austin Dep. Tr. at 206:3-6; see also Austin Rebuttal Rpt., ¶ 59 ("First, the correct

[16] In her deposition, Ms. Austin distanced herself from claiming Garlock supports or requires the use of spot rates that existed as of Petition Date, agreeing that she only cited the decision for the proposition the "petition date is the correct valuation date." Austin Dep. Tr. at 212:19-22.

valuation of an asset should only reflect information that is known or knowable as of the date of the valuation."). Ms. Austin provides no support for her assertion that "economic theory" and "best practice" forbid the use of information not known as of the Petition Date in valuing liabilities as of that date. Rather, she is purporting to interpret the meaning of 11 U.S.C. § 502(b), specifically its language that courts should estimate claims "as of the date of the filing of the petition." 11 U.S.C. § 502(b). Taking the position that discounting claims "as of the date of the petition" makes the "valuation date" the date of the petition rather than the date the valuation is performed is opining on a legal question, not an economic or financial one. Again, that is not admissible expert testimony. Cortez, 205 F. Supp. 3d at 776.

32. In any event, Ms. Austin's interpretation is wrong, and contradicted by extensive use of post-petition information in estimating asbestos claims. Estimation in no way precludes the use of information derived post-petition that might be used to more accurately value those claims as of the petition date. In fact, the parties in these proceedings have extensively used post-petition information—such as the use of Personal Injury Questionnaires ("PIQs")—to more accurately value the Debtors' asbestos claims. The same has been true of many asbestos and other mass tort bankruptcy estimations, including Garlock.[17] Under Ms. Austin's view that 11 U.S.C. § 502(b) mandates the "valuation date" must be the "petition date," "economic theory"

[17] See, e.g., In re A.H. Robins Co., Inc., 862 F.2d 1092, 1093 (4th Cir. 1988); In re A.H. Robins Co., Inc., 880 F.2d 694, 698-99 (4th Cir. 1989) (court ordered more than 300,000 claimants to submit two-page questionnaire regarding use of Dalkon Shield and several thousand claimants to answer more detailed 50-page questionnaire); Garlock, 504 B.R. at 95-97 (approving of the use and reliance on "current data produced in discovery," including PIQs and "two supplemental questionnaires," and criticizing the ACC and FCR experts for not using "fresh data available to them"); In re USG Corp., 290 B.R. 223, 227-28 (Bankr. D. Del. 2003) (authorizing use of a "claim form" for "those claimants who can certify that they possess a claim" to complete for purposes of estimation); In re Specialty Prods. Holding Corp., No. 10-11780 (JKF) [Dkt. 1466] (Bankr. D. Del. July 20, 2011) (approving use of claimant questionnaires); In re G-I Holdings Inc., No. 01-30135 (RG) [Dkt. 8078] (Bankr. D.N.J. July 7, 2008) (same); In re W.R. Grace & Co., No. 01-01139 (JKF) [Dkt. 9301] (Bankr. D. Del. Aug. 29, 2005) (same).

and "best practices" would preclude the use of this information, a proposition that, to the best of the Debtors' knowledge, has been uniformly rejected.

33. Once stripped of these improper legal opinions, the Committee Experts are left with absolutely no disclosed basis for their use of spot discount rates that existed on the Petition Date. See supra, n.6, n.16. Where an expert's opinion rests entirely on an inadmissible foundation, and no independent reliable basis remains, the opinion must be excluded in its entirety. See Sardis, 10 F.4th at 281; In re Lipitor (Atorvastatin Calcium) Mktg., Sales Practices & Prods. Liab. Litig., 892 F.3d 624, 638, 642 (4th Cir. 2018) (courts must "look to the entire process that produced an opinion"; when foundational conclusions fail, dependent opinions "also fall"). The Committee Experts should therefore be barred from testifying about them.

34. At bottom, the Committee Experts' opinions on the appropriate discount rate depend entirely on improper (and inaccurate) legal conclusions. They should be excluded on that basis.

II. THE COMMITTEE EXPERTS' DISCOUNT RATE OPINIONS DO NOT "FIT" WITH THE PURPOSES OF THE ESTIMATION PROCEEDING.

35. Even if the Court is of the view that the Committee Experts' opinions on nominal discount rate are admissible, the position that the Court should use rates of Treasury securities that existed on the Petition Date conflicts with the principal purpose of this estimation proceeding. As the Fourth Circuit stated in Masters, Mates & Pilots, "[a]n interest rate, or rate of return, is applied in order to determine what present amount of investment will yield the future amounts required to satisfy those vested benefits." 900 F.2d at 733. Using spot interest rates on Treasury securities that existed on a single date from ***six years ago*** does not inform what amount of trust funding ***today*** will yield the funds necessary to pay claims for decades into the future.

36. Imagine if the inverse were true and the discount rates as of the Petition Date were abnormally high and materially greater than the rates as of the time of trust funding. For example, suppose the interest rates as of the Petition Date were 10% but are now, six years later, 5%. The Committee would undoubtedly object to the use of six-year-old interest rates, as such rates would result in a present-value calculation hundreds of millions of dollars ***less*** than would be the case if current rates were used. The Committee would instead predictably argue that use of stale rates would result in a material underfunding of the contemplated trust, given that the more current rates will be the rates available at the time of *funding of the trust*. The Committee cannot have it both ways.

37. Likewise, the use of stale, artificially depressed rates will also not assist the Court in confirming a potential plan of reorganization. When courts select discount rates to determine present value in connection with common confirmation issues—such as whether the proposed plan is "fair and equitable," feasible, or in the "best interest of creditors"—they use rates ***prevailing at the time of the confirmation hearing***.[18] This is because courts are required to ensure that the property distributed to a particular creditor over the life of a bankruptcy plan has total "value, as of the effective date of the plan," that equals or exceeds the value of the creditor's

[18] See, e.g., Till v. SCS Credit Corp., 541 U.S. 465, 474 (2004) (rejecting use of prebankruptcy contract rate of 21% to determine discount rate, instead selecting discount rate based on prevailing market rates at time of confirmation); In re Bryson Props., XVIII, 961 F.2d 496, 500 n.4 (4th Cir. 1992) ("Thus, in determining the discount rate, the Court must consider the prevailing market rate for a loan of a term equal to the payout period, with due consideration to the quality of the security and the risk of subsequent default.") (citing 5 Collier on Bankruptcy, ¶ 1129.03(4)(f)(i) (15th ed. 1990) at 1129–85); In re Deep River Warehouse, Inc., 2005 WL 2319201, at *8-10 (Bankr. M.D.N.C. Sept. 22, 2005) (noting agreement across the cases that the appropriate rate of interest to provide the present value of a secured claim is to use "current" and "prevailing" market rates of interest) (citing cases); In re Guilford Telecasters, Inc., 128 B.R. 622, 626 (Bankr. M.D.N.C. 1991) ("The appropriate discount rate should reflect the prevailing market rate of interest."); 7 Collier on Bankruptcy ¶ 1129.05[2][b] ("Second, the amounts promised to be paid in the future are reduced, or discounted, to current dollar values. This is done by selecting a rate at which an amount ***today*** could be invested to yield the promised amount when it is promised to be paid.") (emphasis added).

claim.[19] A stale discount rate, resulting in a materially inflated present value determination of the Debtors' asbestos liabilities, does not assist the Court's evaluation of whether the proposed plan is, among other things, "fair and equitable."[20]

38. The Court should use a discount rate consistent with the purposes of estimation here. See Adams, 1996 WL 228567 at *4; Bittner, 691 F.2d at 135-36; Denke, 524 B.R. at 653. It should therefore preclude the Committee Experts from offering opinions in support of spot discount rates in effect on the Petition Date because they neither "fit" the "purposes of the case" nor "assist the trier of fact" in determining the present value of the Debtors' asbestos liabilities. Abraham, 321 F.R.D. at 151; Daubert, 509 U.S. at 591-92.

III. THE CASE LAW DEMONSTRATES THE COMMITTEE'S DISCOUNT RATE IS UNSUPPORTABLE.

39. Both Dr. Sackett and Ms. Austin propose using a discount rate taken from a single, abnormal, policy-distorted date which is not at all reflective of historical or future interest rates. The interest rates on Treasury securities as of the Petition Date reflect the lowest levels in the past 25 years, coinciding with extraordinary COVID-influenced market conditions, stock market volatility comparable to the Great Recession, and unemployment levels not seen since the Great Depression. Those rates were further depressed by federal government market stabilization efforts, including the Federal Reserve's large-scale purchase of Treasury securities

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[19] See 7 Collier on Bankruptcy ¶ 1129.05[2] ("In three places in section 1129(b)(2), and in at least two other places in section 1129, confirmation requires that a creditor or interest holder receive property 'of a value, as of the effective date of the plan' equal to some amount, usually the allowed amount of the participant's claim. Congress was clear that the use of this term meant that courts were to calculate the 'present value' of the property.").

[20] 11 U.S.C. § 524(g)(4)(B)(ii); In re W.R. Grace & Co., 475 B.R. 34, 186, 188 (D. Del. 2012) ("In this context, the Code requires a reorganization plan to be 'fair and equitable' to those persons that may assert demands against the PI Trust in the future…. Courts within the Third Circuit have interpreted the term 'fair and equitable' in this context to be 'closely tied to the value being contributed to the plan.'") (quoting In re Congoleum Corp., 362 B.R. 167, 180 (Bankr. D.N.J. 2007)).

("quantitative easing") and implementation of measures to expand the capacity of large financial institutions to hold Treasury securities.[21]

40. The Committee Experts ***do not dispute these underlying facts***. Dr. Sackett agreed the spot yields on Treasury securities on the Petition Date were "very low" and "certainly within a period in which they were the lowest point in recent history." Sackett Dep. Tr. at 221:18-222:11. Sackett agreed that choosing the Petition Date for both his discount rate and inflation rate resulted in a negative real discount rate, which he then applied to discount his estimate of claims running up to 2059. See id. at 237:15-238:14. He acknowledged that he is not aware of any long-term period in U.S. history where the real discount rate was persistently negative. See id. at 238:17-240:5 (saying there might be "periods of three or four years" where the real discount rate was persistently negative). He acknowledges that using a negative discount rate over a 35-year period of future claims is "counterintuitive to the time value of money in general." See id. at 242:19-243:5, 374:7-375:1. Likewise, Ms. Austin agrees the COVID pandemic was a period of economic stress and that the Federal Reserve's intervention efforts affected the spot prices of Treasury securities. See Austin Dep. Tr. at 302:14-303:3. In sum, there is no dispute that the discount rates that Dr. Sackett used—and that Ms. Austin endorsed—are neither representative of any medium-to-long-term period in U.S. history nor consistent with the types of rates anyone would predict over any medium-to-long-term period in the future.

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[21] See Mullin Rebuttal Rpt., ¶ 74 (noting Dr. Sackett used "an abnormally low discount rate from the beginning of the COVID-19 pandemic, a period characterized by extraordinary market conditions which resulted in U.S. Treasury yields at their lowest in the last 25 years."); Martin Rebuttal Rpt., ¶ 38.b (noting "the nominal discount rate expectations applied by Sackett were formed during Covid, a highly unusual economic period"); Martin Dep. Tr. at 150:22-157:1 (critiquing Dr. Sackett's use of "extremely low," anomalous rates during Covid which were impacted by market distortions, noting it is inappropriate to apply a "wildly aberrational period" to a long-term liability forecast); Brattle Rpt., at 41 n. 91 (noting rates in 2020 "were depressed, in part, by concerns for the economy of the impact of Covid-19"); Brattle Rebuttal Rpt., ¶¶ 10, 43-48 (discussing crisis conditions and extraordinary market intervention that resulted in low rates as of June 2020 and noting "it is standard in finance and regulatory practice to avoid anchoring discount rates in temporarily distorted spot conditions").

41. Courts uniformly reject the use of discount rates derived from short-term, aberrational periods that do not reflect what future interest rates will likely be for the forecast period in question. In Trevino v. U.S., 804 F.2d 1512 (9th Cir. 1986), the Ninth Circuit reversed the district court's entry of a $6.3 million judgment in favor of the parents of a disabled child that used a negative -2% real discount rate. While it is "possible for the true rate of inflation to outstrip the return on the safest investments for some period of time," the court noted that the "recession-plagued" period used to calculate a negative discount rate was "flawed" because it "relied on an unrepresentative timespan" which included "aberrational years" where "oil prices tripled" and "inflation reached double-digit proportions." Id. at 1517-18. The court held the discount rate should "base[] our estimates on long time periods that will diminish the effect of shorter aberrational periods," stating "it is impermissible to select a time period over which to compare inflation and interest rates that provides a decidedly aberrational result." Id. at 1518-19.

42. Other decisions are in accord. In Palmer v. Asarco Inc., 2007 WL 2381242 (N.D. Okla. Aug. 13, 2007), defendants moved to exclude expert testimony that used a negative net discount rate to arrive at present value of lost future earnings. Id. at *1. The case involved children, who lived near a mining waste site, suing for exposure to lead. Id. The court characterized the expert's use of a negative discount rate as an "opinion that plaintiffs will lose money by obtaining a lump sum payment and investing that money, and they should be given $2 million more to account for this alleged loss." Id. at *2. Citing Trevino, and finding no reliable basis to apply a negative discount rate in computing a lump-sum payment attributable to 40 years of lost future earnings, the court excluded the expert's opinion. Id. at *3-4.[22] Similarly, in

[22] Likewise, Dr. Sackett's use of a -2.2% real discount rate is tantamount to asserting that if, for instance, it is projected the Debtors would pay $1 billion in asbestos claims over the next 40 years, they need to put $2 billion into a trust (which will be investing the money during that period) to pay that $1 billion in claims.

Thomas v. T.K. Stanley, Inc., 2014 WL 12814614, at *1 (E.D. Tex. Oct. 28, 2014), the court excluded the plaintiff expert's use of a negative -1.78% real discount rate in calculating the present value of 50 years of future medical expenses in a personal injury case. The court found the rate was "based on temporary economic conditions that do not reflect historical trends." Id. at *2.

43. The use of an abnormally low interest rate is not a reliable basis to discount the Debtors' current and long-term future liabilities. This provides yet another basis to exclude the Committee Experts' testimony applying the spot discount rate that existed on the Petition Date.

CONCLUSION

For the foregoing reasons, the Debtors respectfully request that the Court enter an order *in limine* precluding the Committee Experts from attempting to introduce evidence or testimony as to the nominal discount rate the Court should employ in determining the net present value of the Debtors' asbestos liabilities.

Dated: June 25, 2026
Charlotte, North Carolina

Respectfully submitted,

/s/ John R. Miller, Jr.

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EXHIBIT A

UNITED STATES BANKRUPTCY COURT
FOR THE WESTERN DISTRICT OF NORTH CAROLINA
CHARLOTTE DIVISION

In re:	
	Chapter 11
ALDRICH PUMP LLC, et al.,	Case No. 20-30608 (LMJ)
Debtors.	

CONFIDENTIAL - PROFESSIONAL EYES' ONLY
PURSUANT TO PROTECTIVE ORDER

VIDEO-TAPED DEPOSITION OF YVETTE R. AUSTIN

DATE:	May 14, 2026
TIME:	9:32 a.m.
LOCATION:	Caplin & Drysdale 1200 New Hampshire Avenue, NW Washington, D.C. 20036
REPORTED BY:	Shari R. Broussard, RPR, CSR Reporter, Notary

Veritext Legal Solutions
1250 Eye Street, NW, Suite 350
Washington, D.C. 20005

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that they may in- -- inflate at a rate that's higher than that.
Q Okay. And have you done any studies on that?
MR. CORDANI: Objection to form.
THE WITNESS: I've provided expert opinions that involved the estimation of an inflation rate for mesothelioma claims, so yes.
BY MR. EVERT:
Q Okay. Any published studies on the inflation of mesothelioma claims values?
A Not public -- not -- the -- the analysis that I have done has been in expert reports. To the extent those expert reports are public, they are, but to the extent that they aren't, they aren't.
Q Okay. In paragraph 45 of your report the last sentence says, "As Exhibit 9 and 10 display, the raw data series shows no clear trend in yearly average settlement values," abbreviated as ASV, "for paid mesothelioma claims between 2004 and 2019 in either nominal values or constant

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June 2020 dollars."
Did I read that correctly?
A You did.
Q Does no clear trend in your view indicate that the historical settlement average -- averages of mesothelioma claims for Aldrich and Murray is neither going up nor going down?
A Well, I would -- if you just look at average settlement values in the aggregate, there is no clear trend.
The reason why there is no clear trend just looking at those -- that data is also in my report, which is there are multiple factors that impact claim values. So there are multiple factors that impact claim values.
Q So does no clear trend mean there is neither a trend that they are going up or a trend that they are going down; is that a fair statement?
A It means that if you just look at average settlement values and you don't seek to identify the variables that are relevant for

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determining those values, you will not see a clear trend.
Q Okay.
THE REPORTER: I'm sorry, you will not see a what?
THE WITNESS: You will not see a clear trend.
THE REPORTER: Thank you.
BY MR. EVERT:
Q And Exhibits 9 and 10 illustrate the average settlement values for roughly the 15 years pre-petition date?
A That's correct.
Q Okay. Are you familiar with the term "spot rate" in regard to U.S. Treasury securities?
A Well, spot rate is not specific to U.S. Treasury securities, so I'm familiar --
Q Okay. I know --
A -- with the term "spot rate."
Q I know you know more about it than I do. Tell me what a spot rate is.
A It depends on what instrument you are

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looking at.
Q Okay. U.S. Treasury securities.
A A spot rate can be a yield or a price.
Q But it's at a given point in time; is that correct?
A It is at a given point in time, yes.
Q Okay. So am I correct that U.S. Treasury securities -- strike that.
Am I correct that historical rates for U.S. Treasury securities for each day are reported and that would be considered the spot rate for that day?
A It sort of depends on how you're going to use the phrase, but that's generally correct. I'll let you know if you say something I disagree with.
Q I am running with generally correct.
In addition to spot rates, the Congressional Budget Office also forecasts nominal interest rates for U.S. treasuries into the future; is that correct?
A I would make that statement a little bit

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principles to incorporate discount or inflation rates known after the petition date?
A It is not -- it is inconsistent with economic theory and best practice to use information that is not known as of the date of valuation to value any asset.
Q And in this instance wouldn't the date of valuation be the date that these expert reports were offered in September of 2025?
A No, no. All -- no. The date of valuation is the petition date.
Q Okay. And why do you say that?
A Well, it's not only I say that, but in fact the courts have found that and the -- so let's -- let's go back to my report.
Q It's -- you're looking for the appendix at the back on the --
A Yeah.
Q It's -- it's the last -- it's page D-1. It's the second to the last page I think.
A Yes, thank you very much.
Q Yeah.

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A Thank you. I appreciate that.
Yes. So page D-1 lists out at least three bankruptcy matters in which the court has cited or stated that the data date of valuation is the petition date. So that -- that is a -- that is an assumption of my analysis --
Q Okay.
A -- that the correct date of valuation is the petition date.
Q Did you research those particular cases or were those cases provided to you?
A So I -- I knew of these cases and I have done multiple valuations for bankruptcy purposes and I can't think of an instance in which I in a similar circumstance did not use petition date as the date of valuation.
Q All right. I just want to make sure that we're not talking about different things.
A Uh-huh.
Q When you say you used the petition date as the date of valuation, you're talking about the date on which we discount back to; is that --

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A I'm -- so I'm talking about the date as of which the debtors' liability is quantified. So one of the components of quantifying the debtors' liability is the date on which you discount future values back to present value.
Q Okay. And -- and your opinion is that it is inconsistent with economic theory and best practice to use information that it is -- that is not known as of the date of valuation to value any asset.
Did I read that -- did -- did I get that right?
A Yes. So if you are valuing an asset, one of the first questions you ask is what is the date of valuation. Having determined that the date of valuation is petition date here, all of your information should be as of the petition date.
Q Okay. And that is economic theory. What if a court decided to rely on a discount rate after the petition date in estimating current and future asbestos liabilities. Would that be wrong?

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A You would have to ask the court that.
Q Okay. One of the cases you cite is the Garlock matter?
A That's right.
Q Okay. And I think you footnoted Dr. Sackett's citation of Garlock in -- you -- you footnoted Dr. Sackett's footnote 33?
A Yes, that's correct.
Q Okay. And I'm glad to show you the report, Ms. Austin, if you want, but in the interest of time I'll see if you will trust me that footnote 33 cites to the Garlock case and notes it also cites to the Eagle-Picher case that you mentioned in there.
Can you -- does that sound accurate?
A I -- I don't recall from memory. If you want to represent that that footnote mentions Eagle-Picher -- Picher, I will take that representation, but I don't remember.
Q All right. Let's mark this as the next exhibit.
(Austin Exhibit Number 6 was

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marked for identification.)
BY MR. EVERT:
Q And Dr. Sackett in his report, although you don't footnote it in your report, also he cites to page 88 of the Garlock opinion, which is actually pages 12 and 13 of Exhibit 6 that I just handed you.
A Yes, I see that.
Q Okay. At the very bottom of the page of -- the very bottom of the page of page 12 the last full sentence on the page says, "Finally, a discount rate should be applied to bring the future nominal value of claims back to the petition date."
Did I read that correctly?
A You did.
Q Is it your view that applying a discount rate to bring future nominal value claims back to the petition date is different than choosing the discount rate that existed on the petition date?
A I'm not sure I know how to answer your question. This -- this doesn't -- this sentence

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doesn't say anything about choosing a discount rate, so --
Q I agree.
A -- so it -- it's two steps. You have to determine what the discount rate is, which this sentence does not address in this sentence that you read, and then you have to use the discount rate to discount back to petition date.
Q Are you aware of anywhere in this opinion that the court finds that it should choose a discount rate that existed on the petition date?
A There are different ways to -- there are different correct ways to estimate the discount rate, the appropriate discount rate. However, it would be incorrect to use a rate that was not known or determinable as of the date of valuation. So I didn't -- I'm happy to read through this opinion to talk about -- to see what the court says about choosing the discount rate. That's not something that I looked at in this opinion.
I cite to this document for the proposition that having chosen the rate, I would

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say correctly, then what is the date to which you are discounting back to, and it is petition date.
Q So you would cite this document with the proposition that having chosen the date that you were discounting back to, you would choose the rate known at that time?
A No, that was not my testimony.
Q I didn't say it was. I'm trying to understand your testimony.
A Okay. So you asked me -- this conver- -- this line of questioning, pardon me, started with what is the relevance of the petition date and I was saying the petition date is the date of valuation. So if you have future cash flow streams that are later than your date of valuation, you then need to discount those cash flow streams back to calculate the present value as of the date of valuation, and that is the petition date. And so, as I review in Appendix D to my report, courts have established in circumstances like this petition date is the correct valuation date. So that's all I've said.

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That does -- that does not address -- there is a way to address -- that does not address what is the correct discount rate. So if you'd like to ask me what the correct discount rate is, I can answer that question, but it seems like we have conflated two questions, what is the valuation date and then how does one derive the discount rate.
Q In your opinion as an economist, what is the correct discount rate?
A So --
MR. CORDANI: Objection to form.
THE WITNESS: -- it depends on the -- it depends on the circumstance. Here, as I say in my report, the correct discount rate here is the risk-free rate because the claimants are involuntary creditors. So in that circumstance the discount rate is the risk-free rate and I look at the risk free rate on the valuation date.
BY MR. EVERT:
Q The valuation date being the petition date?

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components typically are the determinants of yield.
Q Is it possible that the term premium becomes small or even negative during periods of economic stress or crisis, for example, when the Central Bank intervenes in the market and buys government bonds?
A It is possible that the yield curve is inverted at times, and we know it is actually, there's historical precedent for a yield curve being inverted, and so that's why when you asked me a moment ago you said the term premium is never zero. I said it depends.
Q Would you consider the COVID pandemic to be a period of economic stress?
A As a general matter, yes.
Q I'm on a roll now. I've got two. Thank you.
Did the Federal Reserve intervene in the market to buy Treasuries in 2020 around the outbreak of the pandemic?
A Yes.

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Q Is it possible that these events affected the term premium?
A Yes, but that -- yes.
Q Thank you.
Is it possible that the term premium was lower or even negative around the petition date?
A I didn't look. I don't know.
Q Is it possible?
A I -- I -- it's possible. I don't know. And -- and it's not -- certainly not in any of the other reports.
Q If that's so --
A Uh-huh.
Q Let's assume hypothetically that that's so. Would it be appropriate to take into account the exceptional financial circumstances when using the yield curve as of the petition date to forecast future long-term interest rates?
A Yes, because the yield impounds in it expectations of the future and that is a far better measure of what market expectations were then, A, referencing a rate that was simply not

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known, or depending on a single litigation expert.
Q And that would be the spot rate?
A What would be the spot rate?
Q The rate that you would use as a discount rate would be the spot rate on the petition date as Dr. Sackett did?
A I would use the yield. So that's why -- spot is usually a term referred to price. I would use the yield.
Q Now, in your discount rate opinion you say that the appropriate rate is a risk-free rate because claimants are involuntary creditors?
A That's correct.
Q You testified at the March 25 hearing in the matter of Whittaker and Daniels, correct?
A I did.
Q Sorry. Whittaker, Clark and Daniels.
Did you testify to the court that the discount rate should reflect a conservatively invested portfolio?
A I believe I did.
Q Do you recall whether you admitted in

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that testimony as to not having an opinion as to whether asbestos trusts are or are not invested in conservative portfolios?
A I don't recall providing that specific testimony.
Q But you have endorsed a conservatively invested portfolio is an appropriate benchmark, correct?
A For that -- excuse me.
Q Yeah. For Whittaker.
A For Whittaker, yes.
Q What do you mean by a conservatively invested portfolio?
A Something that -- a -- a scheme of investment that recognizes that because amounts have to be available to pay out claims with not great predictability -- unfortunately you don't know exactly when a claim is going to come in and when people are going to die of mesothelioma exactly -- the investment strategy should avoid seeking higher returns which would -- because of the volatility, because usually the opportunity to

UNITED STATES BANKRUPTCY COURT
WESTERN DISTRICT OF NORTH CAROLINA
CHARLOTTE DIVISION

In re:	:	
	:	Case No.
ALDRICH PUMP, LLC, ET AL.,	:	20-30608 (LMJ)
Debtors.	:	

HIGHLY CONFIDENTIAL - PROFESSIONAL EYES ONLY
SUBJECT TO PROTECTIVE ORDER

May 5, 2026

9:07 a.m. EST

Videotaped deposition of DENISE NEUMANN MARTIN, Ph.D., held at the offices of Jones Day, 51 Louisiana Avenue, N.W., Washington, D.C., before Misty Klapper, Registered Merit Reporter, Certified Shorthand Reporter, Registered Professional Reporter, Realtime Systems Administrator and Notary Public.

Dr. Sackett uses actual inflation rates observed over the period 2020 to 2024. And then from 2025, he uses expected annual inflation based on expectations as of March 2025, right?

A. Yes.

Q. So he's using future inflation expectations from 2025, which is the year his report was submitted, right?

A. Yes.

Q. And then he took his nominal risk-free discount rate from June 2020?

A. Yes.

Q. So do I understand correctly that your opinion is that it's an error to calculate the real discount rate using expectations in 2020 for the nominal discount rate and expectations in 2025 to calculate the inflation rate?

MR. HIRST: Object to the form of the question.

THE WITNESS: I mean, the real

discount rate is just the difference between the nominal discount rate and the inflation rate.

So what I'm saying is the problem is because of this mismatched time period, he's creating a negative real rate. He's creating this situation that we've never seen before for any period of time and just couldn't potentially persist for the next 40 years of his -- his forecast.

So by using -- it -- there's -- there's several problems, what he's doing, but one problem is by using these mismatched time periods, he's got nominal rates at their -- you know, the lowest point in, you know, memory, you know, during COVID, when the -- you know, the Fed funds rate is being kept extremely low and, you know, there's lot of things going on that are market distortions. And he's

combining that with an inflation rate that's, you know, years later, expectations about inflation years later, and when -- when inflation expectations are much higher.

And so he's creating this -- this anomalous un- -- unsupported negative real discount rate. It's making his estimate much, much -- his net present value estimate much bigger than it otherwise would be.

There's just -- there's just no foundation in economics for -- for doing that.

BY MS. BARNETT:

Q. Is it fair to say that the error you're describing here is the use of expectations for one element from 2020 and expectations for another element in 2025?

MR. HIRST: Object to the form of the question, asked and answered.

THE WITNESS: I mean, that's --

that's -- yes, that's one problem. It's not -- it's not the only problem, but that's one -- that's one significant problem with what he's doing.

BY MS. BARNETT:

Q. Would it have been error if he did his calculation using an inflation rate from expectations in 2020 and a nominal discount rate using expectations from 2025?

A. There's a lot baked into that question. I mean, it's -- I'm putting aside for the minute his use of risk-free rate. He's made a decision about that and it's -- you know, I don't -- I don't know that that's appropriate given the circumstances here.

But just putting that aside for the minute, it still is not appropriate to take a -- you know, a daily yield -- a daily interest rate from June of 2020, when we had this wildly aberrational period that no one expected, you know, would persist for long at

all, never the -- never mind 40 years, and to say okay, that's the rate; I have these -- this liability that I'm projecting out from now until 2059; I'm going to use this -- this daily treasury yield on -- in June 2020. It's -- you know, he says it has some average of 1 percent. And I'm going to say that's the rate at which I'm going to discount back this -- this, you know, 40-year expected liability.

Like it's -- even -- even -- so even when he corrected the -- the match in time problem, there's no way he should be using a -- a discount rate from such an anomalous period to -- as part of his valuation of this very -- this, like, long-term liability.

Q. I'm sorry, I -- I'm just a little confused.

So your opinion in this section of your rebuttal report related to inflation and discount rates is not that he used an

inflation rate and a nominal discount rate taken from different points in time?

MR. HIRST: Object to the form.

THE WITNESS: Yes, and that's -- that's certainly one foundational critique. And it's a violation of economic principles to be doing that.

And I would say in addition -- and I talk more about this -- that even if he were to correct the mismatch in time, as you were suggesting in your prior question, it's not appropriate to take a -- you know, a -- a -- a daily rate from a highly unusual economic time period, a temporary aberrational time period, and peg that, use that as anchor, to discount back a 40-year stream of liabilities. It's just not -- it doesn't make any economic sense.

He has the value of a -- like a

$10 million claim in the future becoming $20 million when he discounts it or something like -- there's -- there's ridiculous things happening. He's having the outyears become very heavily weighted because he's inflating at this sort of supercharged rate from 2025 and discounting back at this very unusually low rate from 2020.

So this -- that -- that part's just wrong. But it's also just picking this isolated time period and saying given what I'm trying to do here, which is discount back to the present this stream of liabilities for the next 40 years, picking this very unusual daily treasury yield rate and -- and assuming that's going to last forever, just -- there's no -- there's no grounding that. There's no economic basis for making that

decision.

BY MS. BARNETT:

Q. I didn't mean to ask you any question about if he had corrected this error.

My question was, you're pointing out that he uses inflation and nominal discount rate, one from 2020 and one from 2025. And my question was, would it also be an error or a violation of economic principles if he had flipped them and taken the discount rate from 2020 -- no, the other way -- the inflation rate from 2020 and the discount rate from 2025?

A. I --

MR. HIRST: Object -- object to the form of the question.

She answered the question you had previously asked, but she can answer this one.

THE WITNESS: Yes. I would -- I would have the same issue with that.

A. He had very little description of his discount rate. I believe it was just a footnote in his report.

Q. Turn back to Exhibit 2. This is on page 26, paragraph 100.

So he says that using the discount rate as of the petition date is appropriate in estimation. And then at the footnote he cites to a court case, right?

A. Yes, I see that.

Q. Do you understand why he's citing to a court case for that proposition?

MR. HIRST: Object to the form.

THE WITNESS: My expectation is that the Garlock estimation used some kind of discount rate as of the petition date and he's trying to use that to justify his use of this 1 percent rate as of June 2020. And it -- I could tell you, it doesn't provide any justification. I mean, it was an entirely different economic

time period.

June 2020 was really unprecedented. Right? And there's -- it's -- I don't know of an economist who would elect to use a rate -- you know, current spot rate as of that time period to discount back a projected stream of liabilities for 40 years. Like it just -- I don't -- it doesn't make any economic sense to do that.

BY MS. BARNETT:

Q. What do you mean when you say he's trying to use it to justify?

A. He has the statement that using the discount rate as of the petition date is appropriate in estimation with a footnote to the Garlock decision. That's his citation for him using the very aberrational 1 percent discount rate as of June 2020 for his 40-year liability projection.

Q. Did you review the Garlock



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Transcript of David L. McKnight

Date: May 12, 2026
Case: Aldrich Pump Bankruptcy, in Re:, et al:

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economy in the wake of COVID. 15:58:18

If you look at a rate of 1 percent, that is not a normal risk-free rate, and so looking at the rate as of that point in time seeing as 1 percent, I knew that wasn't a rate that I could use, and so I didn't use it. 15:58:21 15:58:24 15:58:29 15:58:32 15:58:34

BY MR. DAVIS: 15:58:38

Q Are you aware that Judge Hodges in Garlock stated that the appropriate discount rate to use is measured at the time of the bankruptcy petition? 15:58:38 15:58:41 15:58:43

A I believe that the rate that was used in Garlock was a future expectation of rates, not a spot rate. So I don't -- yes, I'm aware that he said that, but that's not -- I don't think that means what you think it might mean. 15:58:46 15:58:49 15:58:52 15:58:59 15:59:01

Q I'm not sure I should ask. 15:59:06

MR. GUY: Don't. 15:59:09

BY MR. DAVIS: 15:59:09

Q What do you think I mean? I don't think that's the right question. 15:59:10 15:59:11

A Okay. Sure walked into that one. 15:59:24

Q All right. Let's walk forward. The steps get smaller as we go into the report. 15:59:33 15:59:38

MR. GUY: Water? 15:59:42

THE WITNESS: I just had coffee, so I feel 15:59:43

UNITED STATES BANKRUPTCY COURT
WESTERN DISTRICT OF NORTH CAROLINA
CHARLOTTE DIVISION

In re	
ALDRICH PUMP LLC, et al.,	Case No. 20-30608
Debtors.	

HIGHLY CONFIDENTIAL - PROFESSIONAL EYES ONLY
SUBJECT TO PROTECTIVE ORDER

VIDEOTAPED DEPOSITION OF
CHARLES HENRY MULLIN, PH.D.
Monday, May 4, 2026
10:12 a.m. EDT to 6:30 p.m. EDT

Reported by: Cindy L. Sebo, RMR, CRR, CLR, RPR, CCR, CSR, RSA, CA CSR 14409, NJ Certified CR 30XI0024460, NJ Certified RT 30XR00019500, NM CSR 589, NY Realtime Court Reporter, NY Association Certified Reporter, OR CSR 230105, TN CSR 998, TX CSR 12778, WA CSR 23005926, Remote Counsel Reporter, LiveLitigation Authorized Reporter, Notary Public
Job No. 8052481

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The 10-year curve tends to be a little -- the 10-year period tends to be a little bit higher. That's mostly because the Murray claim values have fallen distinctly over that 10-year period. And so if you reach back to those older ones, the value goes up some.

So at this point, I would encourage the court probably to stick with the three-year periods given that's what the Brattle expert report does, that's what the Sackett report does and any other periods it's really insensitive to. So just for ease, but we've actually shown it doesn't really matter.

So I'd use the 3 percent -- the three-year calibration period. I'd use the 10 percent non-ACP. I think the historical trend is most appropriate for the ASV.

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And as far as the discount rate, I'm going to leave that one -- I can tell you what's appropriate depending on the question the court wants to ask, but I'm not going to tell you which one the court should adopt. That depends what question the court wants answered. And so I've quantified that.

I wouldn't use the 6.5. The 6.5, as I said in my affirmative report, is an upper bound of what I think the trust rate of return would be. I think the actual rate would be a little lower.

Brattle went through the effort of quantifying -- kind of modeling the investment portfolio, and instead of creating an upper bound, produced a point estimate. So I -- the reason I redid these at 6.1 -- because I think that's a better point

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estimate if you want a trust rate of return than the 6.5, which I was doing an upper bound on.

So I'd encourage a 6.1 if discounting at the trust rate of return is what the court would desire to do.

BY ATTORNEY J. WEHNER:

Q. All right. So out of Figure 29 in the Corrected Initial Expert Report, Figure 39 in the rebuttal expert report and Figure 41 in the rebuttal report, I take it you are directing your attention as to the best estimate to the fourth line down in Figure 41 of the rebuttal report, three years, historical trend 6.11, 10 percent non-ACP?

A. If the court were to say it wanted to discount at the trust rate of return, if the court said it -- I would direct it towards that line. If the court said it wanted to discount at a risk-free rate of return, then I'd switch the 6.11 to 4.5 percent, which -- so three years

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historical trend, that gets you about 6.25, I think.

Q. 6.25. Okay. Got it.

Okay.

A. But, again, the exact number, we -- we aren't going to get the last million or 2 million right when you're projecting something 40 years out, so you're kind of seeing the sensitivity of changing some parameters about that.

Q. Do I understand correctly in Figure 29, and I suppose also in Figure 13 -- I'm sorry -- Figure 29 in your Corrected Initial Expert Report, and I suppose also in Figure 39 of your rebuttal expert report, you apply a propensity to sue of 77 percent for Aldrich and 63 percent for Murray?

A. It's -- Paragraph 149 has those two percentages in it.

I'm trying -- let me see . . .

(The witness reviews the material presented.)

In the Matter Of:

In re: Aldrich Pump LLC

20-30608 (LMJ)

ANDREW J. SACKETT

May 11, 2026

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present dollars," what is the "they" you're referring to?

A. Settlement values.

Q. So you're assuming settlement values will remain stable in present dollars but you have inflated them because --

A. Basically they're being paid in the future.

Q. All right. The second factor you spoke about is you had to reduce them to the petition date. What does that refer to?

A. You have a value -- because what we're trying to do here is come up with an estimate of total liability and you want a number, and so -- and it's my understanding that in the bankruptcy context, you value claims as of the petition date.

Q. Where did you gain that understanding from?

A. From practicing law partially in the bankruptcy context over a period of years.

Q. Beyond that, any place else?

A. I -- I checked a couple of cases to make sure that my recollection was correct in this context, but again, it's my understanding that that is the date at which claims in a bankruptcy are valued as of the petition date.

Q. And how do you go about the process of reducing the nominal amounts back to the petition date?

A. You have to apply a discount rate to your -- to your future claim -- to your future values.

Q. And what's a discount rate?

A. It is the -- so let me step back for a second.

Because these are future values and you need to figure out the amount of money, you would have to have to date -- to get that money in the future to pay it and so you assume there's been some kind of return between then and now so that you can bring

yes, it's as of -- it's as of June 18th, 2020.

Q. Do you think you did add the one-year treasury because you don't say so here?

A. I don't say I did. What I said was I think I could have added it and I wouldn't have made much difference, not that I could have added it and I don't remember if I did.

Q. So why did you chose those three particular rates?

A. Because they were the rate -- interest rates on treasuries as of that date.

Q. Are you familiar with what a spot rate refers to?

A. I think so, yes.

Q. What's your understanding of what a spot rate is?

A. It is the rate for buying or selling a security as of a specific date.

Q. Different than a forecast,

right?

A. Yes.

Q. So to be clear, in footnote 32, the three rates you chose to come up with your discount rate, those were not forecasted rates, correct, those were spot rates?

A. No, because I was doing it as of the petition date --

Q. Okay.

A. -- and you're reducing the value to the date as of the petition date.

Q. And you used that rate that you deem to exist on the petition date to discount all the future liabilities you calculated up through, I believe it's 2057 or 2059?

A. It is 2059 and with a petition date was the petition date, and so I chose to date on the petition date.

Q. So whether it was a claim that was paid in 2021 or 2051, you're going to apply that same 1 percent nominal discount

investment, for example, a trust may only have one type of bond.

And so then that is the discount rate because there's a -- there is a, you know, fact that determines what it is and it's not -- you know, it's not complicated.

Q. Who chose the discount rate to apply here, the discount rate you applied in paragraph 99 or 100?

A. It's the -- I chose the discount rate as of the petition date, so it was me based on my understanding of the appropriate date to apply it.

Q. Did you consult with anybody else at LAS about what discount rate to choose?

A. I talked to both who are with the team.

Q. Any economist a part of that team?

A. One.

Q. And did you speak to your

economist about the discount rate you chose to use?

A. Yes.

Q. And who is that economist again?

A. James Dertouzos.

Q. What did you and Mr. Dertouzos talk about in determining what was the appropriate discount rate to use?

A. We talked -- we talked about a lot about risk and actually it was a substantial portion of our conversation.

Q. Did you discuss at all the use of a spot discount rate that existed on the petition date and the appropriateness of it?

A. Sometimes, the question that comes up with respect to that is the -- is that rate anomalous which it may be, but does that -- first of all, do I -- you know, do I ignore the governing, what I understand the governing law to be and the typical date that you use which is the petition date and that

came up.

The other thing that came up was the question of how much -- how much risk a plaintiff would be willing to accept. And so we talked at some length about questions of risk tolerance and -- you know, among personal injury plaintiffs and that kind of thing.

Q. Let's break those two things down.

The first thing is, question, I think you testified that the question sometimes comes up with respect to, is that rate anomalous? The spot rates that existed in -- on June 18, 2020, did you make a determination as to whether or not those are anomalous in the context of U.S. economic history?

A. So within the -- within the -- you know, within around a year of that time, they're fairly consistent, I think, you know, going from earlier in 2020 through some point

in 2021, I think that they were -- over the long term that -- that's low if you were looking at a ten-year treasury.

Again, as we talked more about risk that -- you know, we thought about, you know would it make more sense to use a one-year because that's less risky than a ten-year, you know. The -- generally, the higher interest on a ten years because it's more risky, right? And so we could -- I could say I considered that as well.

Q. Would you agree with me, Dr. Sackett, that the -- whether it's the three-month, the -- you use three-month, five-year, ten-year, right?

A. Three, ten and 30 --

Q. Sorry, three, ten and 30.

For the three-month, ten-year and the 30-year, all three of those rates was June of 2020, the lowest those rates were in the entire 21st century?

A. I don't know if that -- I know

it's part of a period in which they were very low. I don't know if that particular month is lower than July or August or September but it's in a period where they were very low, yes.

Q. In a period that they were the lowest, they were in this entire century?

A. I think so. I'm -- you know, I'm certain it was certainly within a period in which they were at their lowest point in recent history.

Q. Did you come to any determination as to whether those treasury rates on that date were anomalous?

A. I came to the determination that it was more important to use the date that in the bankruptcy context is used to value claims and the rates were what they were as of that date.

Q. Let's talk about what happens in the bank so we can come back to this other point in a second.

So in paragraph 100, you cited to the Garlock decision to support your statement that using the discount rate as of the petition date is an appropriate estimation, correct?

A. Yes, that was an example of a case where that was done.

Q. Dr. Sackett, I'm going to hand you what we marked as Exhibit Number 7.

(Exhibit 7 was marked for identification.)

BY MR. HIRST:

Q. Can you confirm this is a Garlock opinion that you cited in footnote 33?

A. Yes, it is.

Q. And you're familiar with the Garlock case in a lot of ways, right, Dr. Sackett? You worked at Garlock --

A. I worked --

Q. -- when you were an attorney?

A. I mean, I worked with Dr. Peterson and Dr. Rallis and Dertouzos on

inflation and risk-free rates. That is an appropriate and acceptable discount rate in these circumstances."

Do.

Do you see that?

A. Yes.

Q. You understand that those are projected -- the CDOs -- long-term inflation and risk-free rates or projected rates?

A. Yes. It doesn't say when he projected them from. It --

Q. Do you know when he projected them from, Dr. Sackett?

A. I -- I don't remember, it's been 13 years probably since I looked at Dr. Bates's report from Garlock.

Q. Are you aware it was not from the petition date?

A. I have no idea but if that's the situation, then Judge Hodges contradicted himself in his opinion.

Q. How did he contradict himself

in his opinion, sir?

A. He said it's appropriate to use it as of the petition date and then he accepts an estimate -- it's not of the petition date, then he's not being particular and consistent.

Q. I'm not sure that's what Judge Hodges said, Dr. Sackett. That's what you said. If we go back to Judge Hodges at page -- the bottom of page 12, all Judge Hodges said was a quote we looked at before the very bottom of the page, all he said was that a discount rate should be applied to bring future nominal value of claims back to the petition date. It is the same thing about what date to use of the discount rate rates from to do that. It's page 12 of your PDF, Exhibit 7.

A. I'm sorry. What's the question?

Q. I think the question was Judge Hodges didn't say anything about using the

understanding based on? You're not economist, right, Dr. Sackett?

A. No.

Q. Other than your freshman year of college, you have no training in economics, correct?

MR. CROWTHER: Objection to the form.

A. It is based on my knowledge of bankruptcy cases, not my knowledge of economics.

BY MR. HIRST:

Q. Can you name me a single bankruptcy case where the Court in forecasting the value of current and future asbestos claims used a spot rate that existed on the date of petition to discount rates to discount, I'm sorry, liabilities more than 30 years in the future?

MR. CROWTHER: Objection to the form.

A. Not off the top of my head, I

Q. It showed a long-term forecasted rate after 2021 of well above the 1 percent you showed, didn't it, sir?

MR. CROWTHER: Objection to the form.

A. It was higher. I don't know if it was well above or not.

BY MR. HIRST:

Q. All right. We talked a little bit earlier about what a real discount rate is, right? That's nominal discount rate minus inflation?

A. We talked about the difference, yes.

Q. So your real discount rate -- let's say for the future claims because I know your inflation rate is two different components, let's say for the post-2025 claims, you would agree with me that the real discount rate you applied is negative 2.2 percent, that's 1 percent nominal discount minus 3 percent inflation -- 3.2 percent

inflation?

A. Yes.

Q. And you apply that negative real discount rate to calculate the debtors' net -- the net present value of the debtors' liabilities from 2025 to 2059, correct?

A. Yes. And I understand that that relationship is -- you know, is not what you want to see, but even if I applied the same inflation rate, it would have had the same -- you know, as of the date, it might -- if I had applied my same method for calculating inflation rate, it would have been that same relationship --

Q. It's not -- Dr. Sackett, not that I want to see.

Can you name a time in U.S. history any 30-year period of time where there was a negative real discount rate in existence?

A. I can -- it depends on how -- you know, on what you use for your rate of return but there have certainly been periods

I believe around, you know, let's say, you use a one-year rate, you know, after the 2008 financial crisis and 2011, 2012, there have been periods, you know frequent periods more in the recent past where there has been one, yes.

Q. But Dr. Sackett, you're applying this negative real discount rate for 34 years into the future.

My question is: Are you aware of any 34-year period in the history of the republic where a negative real discount rate existed?

A. I am aware --

MR. CROWTHER: Objection to the form.

A. I am aware of -- okay. I am aware of shorter periods, I'm not aware of a 34-year period. I haven't looked for a 34-year period.

BY MR. HIRST:

Q. What is the longest period in the history of the United States that you are

aware of that a negative real discount rate existed?

A. Again, let's say you're using a one-year treasury rate, I think there's periods of three or four years.

Q. Sitting here today, do you know what the negative real discount -- I'm sorry.

Do you know what the real discount rate sitting here today is? Quick hit, it's not a negative.

A. The current rate of inflation is about 3.3 percent and I think treasuries are paying around 4.

Q. That's a positive discount rate?

A. Yes.

Q. Did you talk to anybody on your team about the use of a negative real discount rate to value 34 years worth of future claims?

A. I -- we discussed the

one way or the other about using a negative real discount rate for 34 years into the future?

MR. CROWTHER: Objection to the form.

A. No, because once we determined that we were valuing it as a petition -- as of the petition date, then that's -- that's an effect of using the low discount rate.

BY MR. HIRST:

Q. You understand that the impact of using a negative real discount rate for 34 years is that the value of a dollar today is therefore worthless than a dollar in ten years, in 20 years, in 30 years, correct?

A. So if a dollar today is worth -- I mean, the numbers lead to what they lead to.

Q. So you understand that your numbers lead to the idea that a dollar today is worthless than a dollar in ten years, 20 years and 30 years?

A. Yes, which is counterintuitive to the time value of money in general, but again, the numbers say what they say, and if you're going from the petition date, then that's what happens.

Q. And doesn't that also imply that claimants would rather get paid on their claims in 2059 than in 2020?

A. No, because these are people who are dying and they don't want to get paid 30 years after the death. They want to get paid sooner. In fact, that's often why settlements are lower. It's because they want to get paid sooner rather than later. This isn't an investment.

Q. It's a good thing based on your calculations.

Let's take our -- let's take a break.

THE VIDEOGRAPHER: We are off the record at 15:38.

apply a different discount rate than the gentleman from the Brattle Group do.

Although I believe they note, I think it's in their rebuttal report, that it's appropriate to use a discount rate as of the petition date.

Q. And you use a discount rate over a 35 year period that's never been seen in the history of American economics, correct?

A. I believe your predecessor asking me questions called it the history of the Republic, but you're both welcome to use hyperbole in describe things.

Q. Well, it's a fact, not hyperbole?

MR. CROWTHER: Objection to form.

A. Using terms in a deposition like the history of the American republic seems like hyperbole to me, but as I said, it has never -- to the best of my knowledge no, it has never been a discounted at length for

that period of time.

Q. You've read Dr. Peterson's expert report, correct?

A. I testified to that earlier that at one point I knew it quite well. It's been some time since I read it.

Q. His total estimate was in the region of 1.3 billion as of 2010, correct?

A. As I recall, it was around that.

Q. And your calculation for the debtors is as of 2020, correct?

A. Yes.

Q. So there's been a lot of claims in that intervening period, correct?

A. There have -- the debtors were in the tort system for 10 years longer than Garlock, so they received claims during that period that Garlock did not receive, yes.

Q. You're familiar with the methodology that Dr. Peterson used in his Garlock report?

EXHIBIT B

Report of
Charles E. Bates, PhD

Date:
February 15, 2013

Signed by:



Charles E. Bates, PhD
Chairman
Bates White, LLC

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I. Executive summary

I.1. Overview

(1) I am the Chairman of Bates White, LLC, which is an economic consulting firm with its primary office located in Washington, DC. I specialize in the application of statistics and computer modeling to economic and financial issues and have extensive experience working on asbestos-related claims and liability valuation issues. I have more than 20 years of experience in asbestos claims valuation matters, including SPHC & Bondex, Motors Liquidation (aka General Motors), ASARCO, Plibrico, Western MacArthur, Babcock & Wilcox, W. R. Grace, Owens Corning, USG, NGC, T&N, Fibreboard, Federal Mogul, Abex, and numerous others. I am regularly asked to speak at conferences on asbestos claims valuation matters and have published articles on my research in the asbestos litigation environment. Over the last eight years, I have served as Garlock's asbestos claims valuation expert, providing asbestos-related expenditures for SEC financial reporting purposes. Because of that work, I am well familiar with Garlock's asbestos claims history and its historical claims database.

(2) I began my research on asbestos claims valuation estimation in 1991, when I was retained by KPMG to assist in developing methods to estimate the value of present and future asbestos personal injury and property damage claims as part of the National Gypsum Company reorganization proceedings. Prior to that time, I had been on the faculty of the Economics Department of Johns Hopkins University, where I specialized in research and teaching econometric estimation methodology. My background made me ideally suited for the assignment at KPMG, where I was part of the small team that developed the microsimulation computer models that became the standard for estimating asbestos claims expenditures for many years. Over the last two decades, I have continued my research into improving asbestos claims valuation estimation methods, updating those methods to account for new scientific information as it has become available, and to adapt them for alternative circumstances as warranted.

(3) The Debtors requested that I estimate Garlock Sealing Technologies' (hereafter "Garlock's") share of jury awards taken to final judgment that would be obtained by current Garlock mesothelioma claimants and individuals diagnosed with mesothelioma after the petition date assuming that:

- All such individuals who allege direct or indirect contact with Garlock's asbestos-containing products proceed to trial and final judgment;
- The courts do not exclude Plaintiffs' or Defendants' causation evidence under Federal Rule of Evidence 702, *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993) or similar rules of evidence governing the admissibility of expert testimony; and
- Courts and juries have access to all of the information that the individuals or their counsels have, or can reasonably obtain, regarding the individual's asbestos exposure(s).

(4) For ease of exposition, I refer to Garlock's share of final judgments under the referenced assumptions as "Garlock Asbestos Liability Share" or "Garlock's Asbestos Liabilities." In addition to these defined terms I also use the word liability at various points throughout this report to refer generically to what judges and juries in particular contexts and under particular regimes may determine as Garlock or another defendant's ultimate obligation. I am not opining on the legal merits of any of the claims at issue in this proceeding, or on legal arguments Debtors may offer about the validity of claims or the admissibility of expert evidence in this proceeding.

(5) This assignment is different than my prior assignments regarding Garlock's asbestos claims valuation, as it requires me to explicitly distinguish between what is directly observable historically, namely, the amount of asbestos claims settlements, and Garlock's liability for such claims, which is not directly observable. It is a fact long well established in the law and economics literature that the amount that a defendant pays, and a plaintiff accepts, to settle a lawsuit is not a direct measure of the defendant's liability.[1] Depending on the nature of the litigation, settlements can be lower or higher than the actual liability.

(6) My study of Garlock reveals that because of the cost structure and informational differences between Garlock and asbestos plaintiffs, Garlock has routinely paid asbestos plaintiffs

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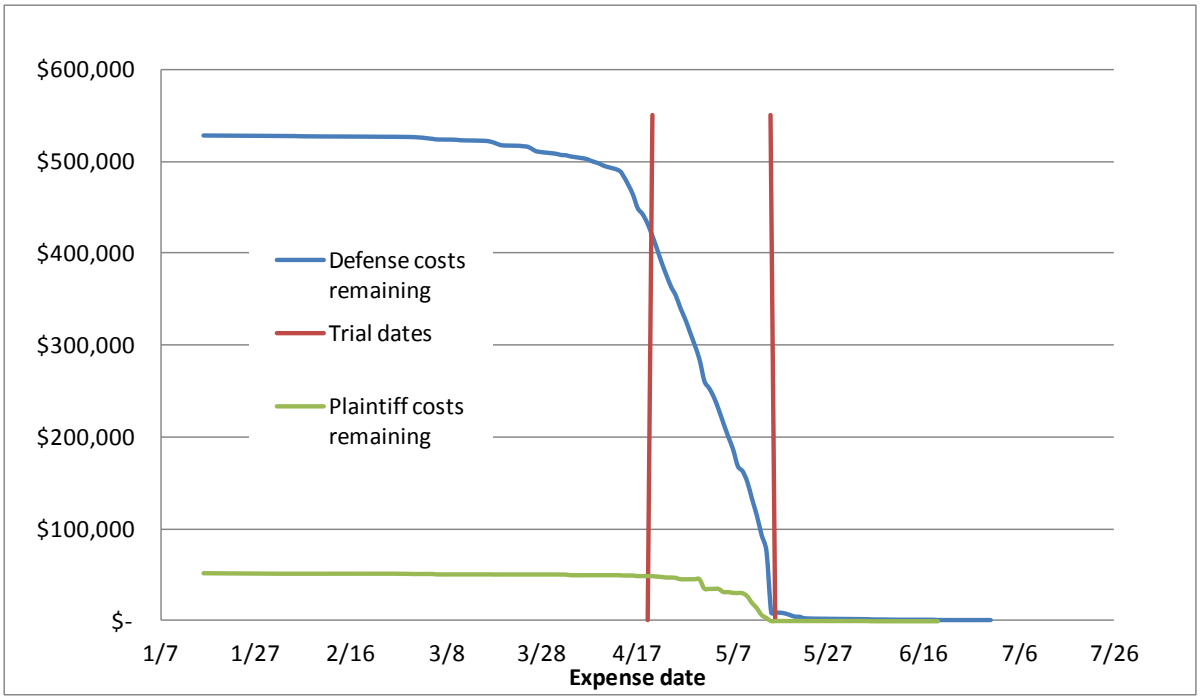
[1] Lucian A. Bebchuk, "Litigation and Settlement Under Imperfect Information," *RAND Journal of Economics* 15, no. 3 (1984): 404–15;

Lucian A. Bebchuk, "A New theory Concerning the Credibility and Success of Threats to Sue," *Journal of Legal Studies* 25, no. 1 (1996): 1–25.

multiples of its liability, particularly since the bankruptcy wave of 2000 to 2002. At that time, many of Garlock's prominent codefendants sought bankruptcy law protection to reorganize and establish 524(g) trusts to pay asbestos claims. This had a very significant impact on Garlock, a maker of a well-branded line of asbestos gaskets and packing. Garlock's products were historically used in industrial settings that were in proximity to high-temperature asbestos insulation. Because of this proximity, Garlock was frequently named in asbestos lawsuits where it had little liability. The vast majority of the asbestos exposure, for plaintiffs who worked with or around Garlock's products, came from the high-temperature asbestos insulation that a worker had to remove to replace a gasket or valve packing, not the small amount of asbestos released from the gasket or packing itself.

(7) Since at least 2000, however, some asbestos plaintiffs have failed to reveal to Garlock the full extent of the other, more significant, sources of their asbestos exposure. Garlock's successful defense of the 1990s, when it won over 90% of cases in which plaintiffs took it to trial, consisted of using plaintiffs' own statements and evidence regarding their other exposure(s) to other defendants' high-temperature insulation to demonstrate that Garlock was not a significant source of the plaintiff's exposures. The omission of this evidence from the plaintiff's record greatly increased Garlock's defense costs, both in pre-trial discovery and at trial. In particular, the cost to Garlock to defend a mesothelioma law suit at trial rose from around $100,000 in the 1990s to $500,000 in the 2000s.

(8) This increase in Garlock's defense costs forced it to pay much higher settlements or face the prospect of even higher litigation and trial costs to prove that it had little liability. The fundamental reason underlying this shift in settlements is the difference in the defendant versus plaintiff asbestos-case economics. Garlock pays its defense lawyers for the hours they work. If a case settles, it saves the cost associated with the hours that would be spent preparing for and at trial. The plaintiff pays his attorneys a contingent fee based on the case outcome. If a case settles, he still pays his lawyer the same set share. The only fees that the plaintiff saves by settling (assuming no codefendants remain to pursue, in which case the plaintiff saves nothing by settling with Garlock alone) are the expenses of experts and other actual trial expenses. This asymmetry in the cost structure means that Garlock will rationally pay up to $250,000 to resolve mesothelioma cases with little or no liability to avoid even higher trial costs. The following chart shows why.



(9) This chart illustrates the costs remaining to Garlock and the plaintiff on each day leading up to and through a Garlock trial for which I received detailed bills. The red vertical lines demark the start and end dates of the trial. The case resolved 24 days after the trial started in mid-April. The blue line illustrates the costs that remained for each day until the case resolves for Garlock, whereas the green line illustrates the remaining costs until case resolution for the plaintiff. The difference in the cost savings to Garlock and the plaintiff from settling this case before trial would have been between $370,000 and $470,000, depending on when they negotiated to settle the case. This cost difference has an impact on the settlement negotiations; the potential savings from settling early and avoiding these costs represent a savings the parties can split. As long as both parties have a similar view of the likelihood of the plaintiff winning the case and the amount that Garlock would have to pay if it loses at trial, both are better off settling as opposed to taking the case through trial. Assuming both sides have competent professionals on their side, basic bargaining economics predicts a settlement that adds half of the cost savings to the expected trial outcome. That means that Garlock would be expected to pay $185,000 to $235,000 more than the expected trial outcome to settle this case instead of the case going to trial (and paying $370,000 to $470,000 more). As Garlock has a strong defense and can be expected to almost always win

at trial, most of its settlements are primarily comprised of payments to avoid costs, not liability payments.

(10) The vast majority of Garlock's mesothelioma cases were resolved for amounts much lower than they would have been if plaintiffs had any significant chance of a liability finding against Garlock at trial. Most cases are resolved at an amount that indicates that Garlock is simply paying for a release from the plaintiff to avoid the costs of early case discovery, or the even more extensive costs of litigating the cases to the eve of trial. As the chart above illustrates, if Garlock can be forced to prepare for trial, it can then be made to spend up to $100,000 in legal fees before the trial even begins, during a time in which the plaintiff incurs little or no expense for keeping Garlock in the case. In such situations, Garlock will routinely pay about $50,000 to settle cases for which it clearly has no liability. The following table summarizes Garlock's historical expenditure on asbestos cases.

Type of case	Amount paid	% of total amount paid	Amount per case	Number of cases	% of cases
Cost avoidance	$1,205,731,042	87.4%	$2,016	598,194	99.89%
Liability concern	$136,682,272	9.9%	$316,394	432	0.07%
Resolved at trial	$36,883,060	2.7%	$166,892	225	0.04%
Total	**$1,379,296,374**	**100.00%**	**$2,303**	**598,851**	**100%**

In aggregate, I estimate that 13% of the more than $1.3 billion that Garlock has paid historically to resolve nearly 600,000 asbestos claims over the last three decades was for payments made to several hundred claimants out of trial risk concerns. The remaining 87% of payments were paid to the 99.9% of claims resolved solely to avoid the much higher defense costs. This disparity between settlement payments and underlying liability also holds for mesothelioma claims. In aggregate, I estimate that less than 30% of the $575 million that Garlock has paid historically to resolve more than 22,000 mesothelioma claims over the last three decades was for payments made to less than 500 claimants out of liability concerns.

(11) It is my understanding that it is the Debtors' position that the federal rules of evidence prohibit the use of the fact of settlement to infer that a settling defendant was liable for the plaintiff's asserted injury. For this reason, I have been asked to estimate the Garlock Asbestos Liabilities without using Garlock's historical settlements in my calculations.

Though I do not use Garlock's historical settlement data in my calculations of the Garlock Asbestos Liabilities, I do use some of those data, as well as my understanding of the economic relationship between settlements, trial risk, and the costs of asbestos litigation to test the validity of the trial risk likelihood calculations done with historical verdict data. Those tests lead me to conclude that Garlock's Asbestos Liabilities are lower than my estimates.

(12) In summary, I find that as of June 5, 2010, the present value, using a 3.0% real discount rate, of Garlock's Asbestos Liabilities for current Garlock mesothelioma claimants and individuals diagnosed with mesothelioma after the petition date is less than $125 million. Of that total forecast, the Garlock Asbestos Liabilities for current, unresolved mesothelioma claims is less than $25 million, and the present value of the Garlock Asbestos Liabilities for individuals diagnosed with mesothelioma after the petition date is less than $100 million in present value.

I.2. Garlock Asbestos Liability model

(13) I estimated the Garlock Asbestos Liabilities through a 12-step process using an economic model of damage recovery lawsuits. This model uses the discovery provided in this case, Garlock's historical asbestos claims information, and a wide variety of other relevant information. The 12 steps are summarized as follows:

(14) Step 1: Estimate the potential plaintiff verdict amount of a claim in which Garlock is a defendant. This is the amount that the plaintiff would be awarded if he won his case against Garlock and other defendants. This amount is estimated by using publicly available data on mesothelioma verdicts that I have compiled over the years.

(15) Step 2: Estimate the economic loss of the plaintiffs resulting from mesothelioma. This provides the basis for parsing liability in states that have different liability sharing rules for economic and non-economic damages. I had Dr. Jeffrey Brown, an economist on my staff, create a computer model of economic damages similar to what would be used in trials of individual mesothelioma cases, to provide expert testimony on lost earnings, medical costs, and the other components of economic damages routinely used in such cases. The model accounts for the age, occupation, and years of lost life in computing economic damages.

(16) Step 3: Estimate the recoveries that plaintiffs received from other tort defendants and asbestos trusts. These are potential setoffs of any plaintiff award depending on the liability sharing and offset rules of each jurisdiction. I have supplemented trust recoveries from the court-ordered claims sample with estimates of additional amounts that plaintiffs will receive from trusts in which they have filed claims and not yet been paid or from trusts in bankruptcy proceedings in which they voted.

(17) Step 4: Estimate defendants' and plaintiffs' litigation costs of taking cases to trial. For this purpose, I have been provided with available Garlock data on its costs to try cases in the past, and I have relied on deposition testimony and public disclosures of plaintiff attorneys regarding their costs and business practices.

(18) Step 5: Estimate the likelihood that the plaintiff would win a liability case against Garlock. I derive estimates of this from Garlock's historical trial record of 83 mesothelioma lawsuits.

(19) Step 6: Estimate the number of liable codefendants and trusts for typical Garlock claimants. I use this estimate to allocate liability based on the liability sharing rules of each jurisdiction, assuming that each liable party has an equal liability share. For this purpose, I used a sample of 350 PIQs and 900 historical claims with deposition and interrogatory responses that provided documentary evidence of plaintiffs' non-Garlock exposures. I also used plaintiff trust claims and voting records in bankruptcy proceedings as plaintiff admissions of exposure to the asbestos-containing products of each trust.

(20) Step 7: Establish the liability sharing rules of each plaintiff's jurisdiction. Garlock's counsel, Robinson Bradshaw & Hinson, P.A., has provided me with a memo summarizing the liability sharing rules and precedents for each of the 50 states and the District of Columbia.

(21) Step 8: Estimate the liability of the pending claims by using the economic model of damage recovery lawsuits and the estimates of the model's parameters from prior steps 1 to 7.

(22) Step 9: Estimate the future incidence of occupationally caused mesothelioma. This is done by using the most recent Bates White epidemiological model that provides an estimate of the number, and age, of individuals who will be diagnosed with mesothelioma in the future. This model provides such estimates for each of several thousand occupation and industry groups as defined by the United States Census.

(23) Step 10: Estimate the future incidence of mesothelioma of candidates for potential Garlock liability. These are individuals with occupationally caused mesothelioma who, by nature of their job history, could have worked in occupations and industries that include individuals that worked around Garlock's asbestos-containing products. For this purpose, I have been provided with the analysis by John Henshaw, an industrial hygienist, of the exposure levels to packing, gaskets, and asbestos-containing, high-temperature insulation for each of the 74 occupational groups and 24 industry groups of the PIQ. I also relied upon the PIQ and claim file review information of more than 5,300 Garlock claimants regarding their contact with Garlock gasket and packing products to estimate the portion of the incidence of each category with either direct or indirect (bystander/indirect) contact with Garlock gaskets or packing.

(24) Step 11: Estimate the liability from the future relevant mesothelioma incidence estimated in steps 9 and 10 by using the economic model damage recovery lawsuits and the estimates of the model's parameters from prior steps 1 to 7. Then use estimated long-run future inflation of the Congressional Budget Office to estimate the nominal value of the future liability.

(25) Step 12: Estimate the present value of the results of steps 8 and 11 using the estimated long-run risk-free discount rate of the Congressional Budget Office. I then arrive at the total present value of the Garlock Asbestos Liabilities by adding those results.

I.3. Garlock's payments under the Debtors' Claims Resolution Procedures

(26) I have also been asked by the Debtors to estimate the value of settlements that would be paid to current Garlock mesothelioma claimants and individuals diagnosed with mesothelioma after the petition date by the asbestos settlement trust proposed in the Debtors' Joint Plan of Reorganization.[2] To do so, I analyzed and modeled the Claims Resolution Procedures ("CRP") presented in tab A-2 of the Exhibit Book attached to the Debtors' Joint Plan of Reorganization.[3]

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[2] Debtors Joint Plan of Reorganization, *In re Garlock Sealing Technologies LLC*, Nov. 28, 2011.

[3] *Id.* at Ex. Tab A-2.

(27) Based on the rules presented in the CRP, I implemented a computer model to estimate the settlements that current and future mesothelioma claimants would obtain from the Trust. I used the information required by the CRP as available in the Garlock Analytical Database to construct such estimates. In implementing these estimates, I modeled the decision that claimants would face—whether to apply for Expedited Review, Individual Review, or to opt for the Litigation Option as defined in the CRP. Based on the CRP, the claimant would be able to calculate the settlement amount offer that he would receive from the Trust under Expedited or Individual Review. Also, based on the claimant's and his counsel's expectations about their case against Garlock, they could estimate the expected recovery amount if they tried the case against Garlock under the Litigation Option. In this way, a claimant can make a decision that would maximize his net recovery from Garlock.

(28) I estimate that the present value of Garlock's asbestos settlements under the Debtors' Joint Plan of Reorganization is less than $220 million—$60 million for current claimants and $160 million for future claimants. This amount is inclusive of a premium the Garlock plaintiffs will receive, above Garlock's Asbestos Liabilities, attributable to the benefit that Garlock receives in avoiding additional defense expenses by plaintiffs agreeing to settle with the Trust instead of continuing to litigate their claims. The amount of the premium is sufficient to induce plaintiffs to settle with the Trust. I reach this conclusion based on the precedent of Garlock's historical settlements adjusted to account for the differential exposure information that plaintiffs will be required to provide and the differential cost for Garlock to obtain that information under the CRP.

II. Introduction

II.1. Summary of qualifications and experience

(29) I am Chairman of Bates White, LLC, which is an economic consulting firm with its primary office located in Washington, DC. The Court approved the employment of Bates White as Asbestos Claims Consultant for the Debtors on July 21st, 2010.[4] I specialize in the application of statistics and computer modeling to economic and financial issues and have extensive experience working on asbestos-related claims and liability valuation issues. I have more than 20 years of experience in a wide range of litigation and commercial consulting areas.

(30) I received my PhD and MA in Economics from the University of Rochester and my BA in Economics and Mathematics, with high honors, from the University of California, San Diego. I have taught courses in advanced statistical economic analysis and trade theory while a professor at Johns Hopkins University and have published papers on advanced topics in estimation theory in peer-reviewed journals.

(31) Prior to founding Bates White, I was a Vice President at A.T. Kearney. Prior to that, I was the Partner in Charge of the Economic Analysis Group at KPMG.

(32) As detailed in my curriculum vitae, which is attached to this report as Appendix VI.4, I have been retained as an asbestos and tort claims valuation expert and have valued asbestos-related expenditures in numerous bankruptcy proceedings, including Motors Liquidation (aka General Motors), ASARCO, Plibrico, Western MacArthur, Babcock & Wilcox, and Owens Corning. Some highlights of my previous involvement in such matters include the following:

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[4] The Debtors in these jointly administered chapter 11 bankruptcy cases, *In re: Garlock Sealing Technologies LLC* pending in the United States Bankruptcy Court for the Western District of North Carolina (the "Bankruptcy Court"), Case No. 10-BK-31607, are Garlock Sealing Technologies LLC; Garrison Litigation Management Group, Ltd.; and The Anchor Packing Company. The three cases are referred to herein as the "Case."

See Final Order Authorizing the Retention and Employment of Bates White, LLC As Consultant For The Debtors, In re Garlock Sealing Technologies LLC, July 21, 2010.

- Served as an asbestos estimation methodology expert on behalf of the Debtors in Specialty Products Holding Corp. and Bondex International, Inc.;
- Served as an asbestos valuation expert on behalf of the Official Committee of Unsecured Creditors of ASARCO LLC in the ASARCO bankruptcy proceedings;
- Served as an asbestos valuation expert on behalf of Liberty Mutual in the Plibrico bankruptcy proceedings;
- Conducted an analysis to determine whether asbestos trusts would have sufficient funds to pay future asbestos claimants;
- Conducted due diligence evaluations of asbestos liability in the context of mergers and acquisitions;
- Testified before the Senate Judiciary Committee on the economic viability of the Trust Fund proposed under S.852, the Fairness in Asbestos Injury Resolution (FAIR) Act of 2005;
- Served as an expert in proceedings on behalf of the Insurers Joint Defense Group in Babcock & Wilcox's asbestos-related bankruptcy, and developed a claims criteria evaluation framework for use in assessing asbestos liability forecasts and trust distribution procedures;
- Served as an asbestos valuation expert on behalf of the Hartford Financial Services Group in the asbestos-related bankruptcy of MacArthur Company and Western MacArthur Company;
- Served as an asbestos estimation methodology expert on behalf of Sealed Air in the fraudulent conveyance matter regarding the 1998 acquisition of Cryovac from W.R. Grace. This matter stemmed from Grace's asbestos-related bankruptcy;
- Served as an expert on behalf of CSX Transportation on the suitability of asbestos claims settlements for arbitration proceedings of *CSX Transportation, Inc. v. Lloyd's, London*; and
- Served as an expert on behalf of the Center for Claims Resolution (CCR) in the arbitration proceedings of *GAF v. Center for Claims Resolution*.

(33) In addition to other relevant experience, my vitae includes a listing of all of the publications I have authored within the past 10 years and all of the cases in which I have testified, either at trial or deposition, within the past four years. Bates White is being paid $850 per hour for the time I bill to this matter. In addition to my time, I directed the work of other professionals on my staff in performing these analyses.[5] Neither my compensation nor Bates White's compensation is contingent on the outcome of this matter.

II.2. Scope of charge

(34) The Debtors requested that I estimate Garlock Sealing Technologies' (hereafter "Garlock's") share of final judgments that would be obtained by current Garlock mesothelioma claimants and individuals diagnosed with mesothelioma after the petition date assuming that:

- All such individuals who allege direct or indirect contact with Garlock's asbestos-containing products proceed to trial and final judgment;
- The courts do not exclude plaintiffs' or defendants' causation evidence under Federal Rule of Evidence 702, *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), or similar rules of evidence governing the admissibility of expert testimony; and
- Courts and juries have access to all information that the individuals or their counsels have, or can reasonably obtain, regarding the individual's asbestos exposure(s).

(35) For ease of exposition, I refer to Garlock's share of final judgments under the referenced assumptions as "Garlock Asbestos Liability Share" or "Garlock's Asbestos Liabilities." In addition to these defined terms I also use the word liability at various points throughout this report to refer generically to what judges and juries in particular contexts and under particular regimes may determine as Garlock or another defendant's ultimate obligation. I am not opining on the legal merits of any of the claims at issue in this proceeding, or on legal arguments Debtors may offer about the validity of claims or the admissibility of expert evidence in this proceeding.

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[5] Bates White's fees on this matter are based upon the time actually spent by each assigned staff member at their standard billing rate, on an hourly basis. Our current rates by staff classification range from $175 per hour for Research Assistants to $1,000 per hour for our most senior economists.

(36) It is my understanding that it is the Debtors' position that the federal rules of evidence prohibit the use of the fact of settlement to infer that a settling defendant was liable for the plaintiff's asserted injury. For this reason, I have been asked to estimate the Garlock Asbestos Liabilities without using Garlock's historical settlements in my calculations. Though I do not use Garlock's historical settlement data in my calculations of the Garlock Asbestos Liabilities, I do use some of those data, as well as my understanding of the economic relationship between settlements, trial risk, and the costs of asbestos litigation to test the results of my calculations.

(37) I have also been asked by the Debtors to estimate the value of settlements that would be paid to current Garlock mesothelioma claimants and individuals diagnosed with mesothelioma after the petition date by the asbestos settlement trust proposed in the Debtors' Joint Plan of Reorganization.[6]

(38) Bates White's work on this matter is ongoing. I reserve the right to update or supplement my report at the request of counsel, or in the event that I receive any new information that has a material impact on my opinions.

II.3. Materials considered

(39) The analysis supporting the conclusions that I present in this report draws upon a wide variety of sources, including:

- Records of historical claims against the Garlock as recorded in their own proprietary claims database, including Garlock's settlement experience;
- Public records and Garlock's proprietary records on historical verdicts;
- Deposition transcripts, interrogatories, and documents produced during discovery in asbestos cases;
- Data from the Personal Information Questionnaires (PIQs) and the Supplemental Questionnaires ordered by the Court in this matter;

[6] Debtors' Joint Plan of Reorganization, *In re Garlock Sealing Technologies LLC*, Nov. 28, 2011.

- Deposition transcripts and documents obtained through discovery in this matter;
- Trust filing submission and payment information from asbestos-related trusts managed by the Delaware Claims Processing Facility;
- Asbestos claimant ballots from 23 asbestos-related bankruptcies;
- Records of asbestos-related claims against other manufacturers—specifically, claims of the Manville Personal Injury Trust through 2002 and the former Center for Claims Resolution through 2001;
- Demographic information from a Social Security Administration databases that includes 89 million records, which was used to supplement and verify information from each of the above data sources;
- Public Use Microdata Sample of the US Census from 1920, 1940, 1950, 1960, 1970, and 1980;
- Employment time-series data maintained by the Bureau of Labor Statistics;
- A database of asbestos defendants and the known asbestos-containing products that they manufactured;
- Publicly available, published material as cited in the text below; and
- Testimony and interviews conducted and memoranda written as part of this matter.

(40) A complete list of the data I considered is contained in the February 15, 2013, Expert Report submitted by Dr. Jorge Gallardo-Garcia in this matter.

(41) I may update and refine this list in the event that I discover anything that was inadvertently excluded.

II.4. Summary of opinions

(42) I find that as of June 5, 2010, the present value, at a 3.0% real discount rate, of Garlock's Asbestos Liabilities for current Garlock mesothelioma claimants and individuals diagnosed with mesothelioma after the petition date is less than $125 million. Of that total forecast, the Garlock Asbestos Liabilities for current unresolved mesothelioma claims is less than $25

million, and the Garlock Asbestos Liabilities for individuals diagnosed with mesothelioma after the petition date is less than $100 million, in present value.

(43) I estimate that the present value of Garlock's asbestos settlements under the Debtors' Joint Plan of Reorganization is less than $220 million—$60 million for current claimants and $160 million for future claimants. This amount is inclusive of a premium that Garlock's plaintiffs will receive above Garlock's Asbestos Liabilities for settling with the Plan Settlement Trust instead of continuing to litigate their claims. Such premium is attributable to the benefit that Garlock receives in avoiding additional defense expenses by plaintiffs agreeing to settle. The amount of the premium is sufficient to induce plaintiffs to settle with the Settlement Trust. I reach this conclusion based on the precedent of Garlock's historical settlements adjusted to account for the differential exposure information that plaintiffs will be required to provide and the differential cost for Garlock to obtain that information.

(44) The remainder of this report provides support for these opinions, including descriptions of the data relied upon and the analyses performed.

III. Background

III.1. Overview

(45) Garlock made and sold asbestos-containing gaskets and packing material for many years.[7] Because of the structural characteristics and formulation of gaskets and packing, Garlock's products accounted for a negligible amount of asbestos exposure to the vast majority of individuals who worked with or around its products.[8] However, Garlock's products were heavily marketed and widely used in industrial settings where high exposures to asbestos-containing insulation material were common.[9] In fact, Garlock's marketing department was so successful in its branding efforts that certain kinds of industrial gaskets were often called "Garlocks" in the same way that Kleenex or Jell-O are commonly used words in place of facial tissues or gelatin dessert. As a consequence, beginning in the 1980s, Garlock was named in thousands of asbestos personal injury lawsuits each year.

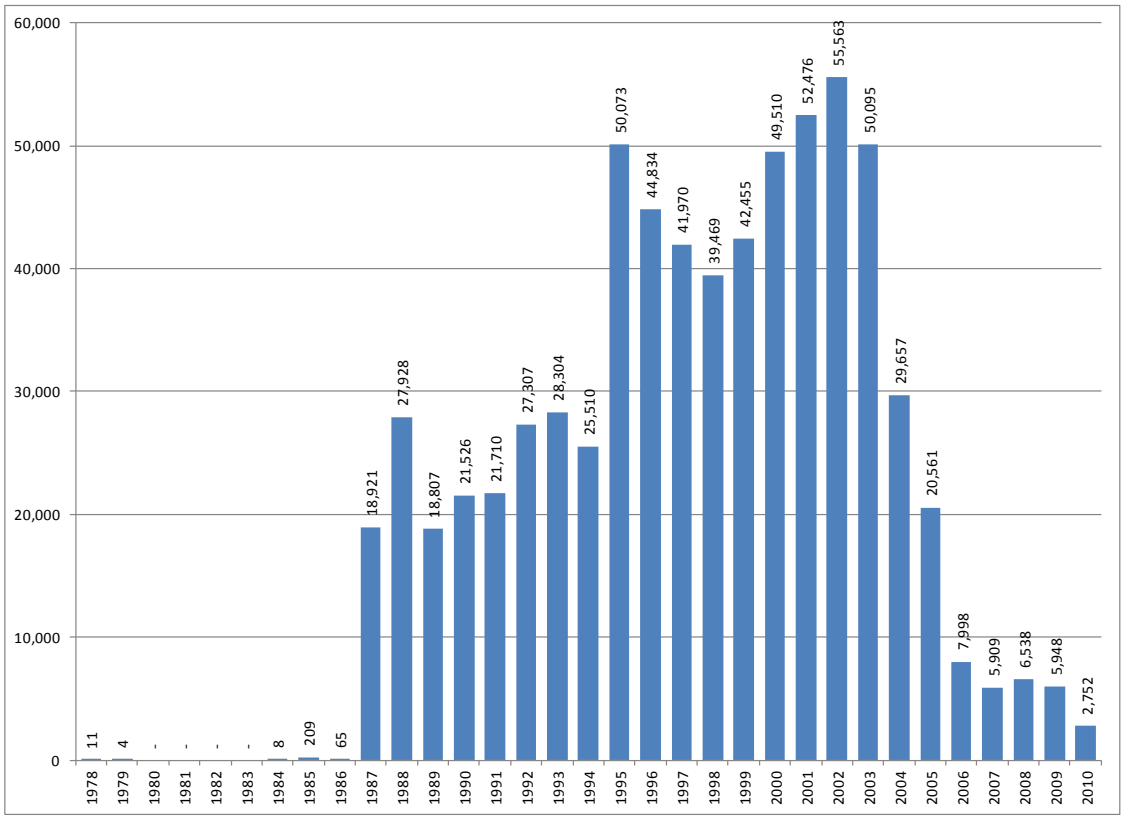
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7 Information Brief of Garlock Sealing Technologies, *In re Garlock Sealing Technologies LLC*, June 7, 2010.

8 Carl A. Mangold, Katherine Clark, Amy Madl, and Dennis Paustenbauch, "An Exposure Study of Bystanders and Workers During the Installation and Removal of Asbestos Gaskets and Packing," *Journal of Occupational and Environmental Hygiene* 3, no. 2 (2006): 87–98; Fred W. Boelter, Gary N. Crawford, and Daniel M. Podraza, "Airborne Fiber Exposure Assessment of Dry Asbestos-Containing Gaskets and Packings Found in Intact Industrial and Maritime Fittings," *American Industrial Hygiene Association Journal* 63, no. 6 (2002): 732–40.

9 Asbestos Exposure Assessment—Estimates of Exposure by Industry and Occupational Code for Gasket and Packing Work and Bystander Exposure to Asbestos-Containing Insulation Products (Report of John Henshaw, Feb. 8, 2013), at 3–5 *et seq*.

Exhibit 1: Asbestos claims filed against Garlock by year of filing



(46) Though Garlock was found not liable in the vast majority of the cases that plaintiffs elected to take to trial, receiving a defense verdict on 189 of the 225 cases it tried through verdict, early in its asbestos claims experience it began to pay nominal amounts to cases filed against it to avoid the much higher litigation costs associated with defending claims, *viz.*, Garlock resolved nearly 600,000 asbestos personal injury lawsuits at an average cost of $2,300 per claim, this is in a litigation in which the litigation cost of a single trial alone can be $400,000 or more.

(47) By 2000, nuisance cases against Garlock and its codefendants swelled to 50,000 cases per year, resulting in total payments by Garlock of over $100 million per year and leading many of Garlock's codefendants to file for bankruptcy reorganization. Exhibit 2 provides a summary of the total amount paid, the average amount paid per resolved claim, and the

number of claims resolved for each year since the first claims were resolved in 1984, as recorded in the Garlock Analytical Database.[10]

Exhibit 2: Summary statistics of resolved cases

Resolution year	Total settlements	Average settlement	Number of resolved claims
1984	$900	$300	3
1985	$15,300	$133	115
1986	$2,700	$270	10
1987	$5,970,325	$1,296	4,606
1988	$11,430,335	$1,137	10,051
1989	$9,374,663	$1,016	9,229
1990	$11,664,505	$1,096	10,641
1991	$18,519,179	$1,089	17,005
1992	$16,021,301	$1,099	14,580
1993	$24,398,077	$1,983	12,301
1994	$17,431,578	$1,449	12,026
1995	$29,831,287	$1,221	24,439
1996	$47,694,225	$1,400	34,074
1997	$39,655,951	$1,349	29,407
1998	$38,052,114	$1,184	32,131
1999	$69,551,247	$1,483	46,895
2000	$105,017,838	$2,148	48,887
2001	$141,500,838	$2,416	58,574
2002	$117,675,973	$2,723	43,216
2003	$107,342,538	$2,890	37,137
2004	$89,982,456	$2,383	37,759
2005	$92,712,420	$2,104	44,062
2006	$94,243,376	$3,664	25,724
2007	$89,175,940	$9,719	9,177
2008	$84,305,208	$9,027	9,341
2009	$83,682,693	$3,924	21,328
2010	$34,043,407	$5,554	6,142
Total	**$1,379,296,374**	**$2,303**	**598,860**

(48) Exhibit 3 provides a summary of the number of lawsuits filed against Garlock since 1978, for each year, and their current status, as recorded in the Garlock Analytical Database.

[10] This database is the product of Bates White's processing of the data available in this matter. *See* the Expert Report of Dr. Jorge Gallardo-Garcia for a description of the database.

Exhibit 3: Asbestos claims filed against Garlock

Filing year	Stale	Dismissed	Defendant verdict	Unresolved	Plaintiff verdict	Settled	Total
1978	0	3	0	0	0	8	11
1979	0	0	4	0	0	0	4
1980	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0
1984	4	0	0	0	0	4	8
1985	7	65	0	0	0	137	209
1986	15	15	0	0	0	35	65
1987	1,572	4,436	4	0	0	12,909	18,921
1988	2,004	8,387	8	0	2	17,527	27,928
1989	239	4,871	6	0	1	13,690	18,807
1990	170	3,774	15	0	0	17,567	21,526
1991	878	3,033	17	0	1	17,781	21,710
1992	1,207	3,014	13	0	1	23,071	27,306
1993	2,942	2,112	27	0	6	23,217	28,304
1994	3,413	1,578	29	0	0	20,490	25,510
1995	5,588	7,474	14	0	3	36,994	50,073
1996	6,448	7,601	8	0	1	30,776	44,834
1997	4,725	14,160	2	0	2	23,081	41,970
1998	3,177	8,316	3	0	2	27,971	39,469
1999	2,758	7,379	2	0	2	32,314	42,455
2000	4,412	7,745	7	0	2	37,344	49,510
2001	7,138	10,562	3	0	1	34,772	52,476
2002	11,691	12,883	5	0	2	30,981	55,562
2003	11,830	20,469	4	0	5	17,787	50,095
2004	4,322	13,683	3	0	2	11,647	29,657
2005	0	6,042	3	7,469	0	7,047	20,561
2006	0	2,122	4	3,285	0	2,587	7,998
2007	0	1,310	4	2,233	1	2,361	5,909
2008	0	845	1	3,886	1	1,805	6,538
2009	0	534	0	3,685	1	1,728	5,948
2010	0	54	0	2,157	0	541	2,752
Total	**74,540**	**152,467**	**186**	**22,715**	**36**	**446,172**	**696,116**

(49) A veritable avalanche of cases was filed against Garlock in the late 1980s. This continued apace for several years and then grew to an even larger number in the mid-1990s. By the beginning of the last decade, Garlock was receiving tens of thousands of what are now known to be fraudulent, non-malignant claims. These claims, which were recruited en masse

for litigation purposes and had no real medical diagnoses,[11] flooded the courts. They also overwhelmed the ability of dozens of companies to defend against the onslaught of lawsuits. The result was a wave of asbestos-related bankruptcies between 2000 and 2002.[12]

(50) By the mid-2000s, cases filed against Garlock and other defendants began to drop dramatically, as claim recruiters exhausted potential claim sites and their recruiting practices were discredited. However, the subsequent asbestos claims, while fewer in number, were much more costly for Garlock to defend, with its former codefendants out of the courts due to bankruptcy protection. This resulted in a significant increase in the average payment to plaintiffs from Garlock. As will be shown later in this report, these payments were made in order to avoid the even higher cost to Garlock of establishing that it had little trial risk on the vast majority of those claims.[13]

(51) Moreover, after the departure of its former codefendants from state courts across the country—and even though Garlock still prevailed on most cases when brought to trial by plaintiffs—Garlock was forced to acknowledge that it faced the risk of an adverse verdict on a greater number of claims than it had in prior years. In particular, prior to the bankruptcy wave of asbestos defendants that began in 2000, plaintiffs took Garlock to trial more than 150 times. Garlock was found not liable on more than 90% of these cases. Notably, during this period, Garlock paid more than $250,000 on only about two claims per year. According to EnPro's General Counsel, Rick Magee—who approved all high-value settlements and the

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11 *In re Silica Products Liability Litig.,* No. 1553 (S.D. Tex., June 30, 2005); Following Judge Jack's decision in the silica MDL, several asbestos bankruptcy trusts issued letters suspending the acceptance of medical reports from doctors implicated in the silica fraud investigation (Memorandum re: Suspension of Acceptance of Medical Reports (Manville Trust), from David Austern – President of CRMC, Sept. 12, 2005); Notice of Trust Policy Regarding Acceptance of Medical Reports, *In re Celotex Asbestos Settlement Trust,* Oct. 18, 2005; Letter Regarding Claims Allowance and Qualified Physicians, *In re Eagle-Picher Personal Injury Settlement Trust*, Oct. 19, 2005.

12 Charles Bates and Charles Mullin, "The Bankruptcy Wave of 2000: Companies Sunk by an Ocean of Recruited Asbestos Claims," *Mealey's Litigation Report: Asbestos* 21, no. 24 (2007): 39–44.

13 William M. Landes, "An Economic Analysis of the Courts," *Journal of Law and Economics* 14, no. 1 (1971): 61–107; Richard A. Posner, "An Economic Approach to Legal Procedure and Judicial Administration," *Journal of Legal Studies* 2, no. 2 (1973): 399–458; John P. Gould, "The Economics of Legal Conflicts," *Journal of Legal Studies* 2, No. 2 (1973): 279–300; David Rosenberg and Steven Shavell, "A Model in which Suits Are Brought for Their Nuisance Value," *International Review of Law and Economics* 5 (1985): 3–13; Lucian A. Bebchuk, "Suing Solely to Extract a Settlement Offer," *Journal of Legal Studies* 17 no. 2 (1988): 437–50; Lucian A. Bebchuk, "Litigation and Settlement Under Imperfect Information," *RAND Journal of Economics* 15 No. 3 (1984): 404–15.

expense budgets of Garrison Litigation Management Group (hereafter "Garrison") in resolving Garlock's claims since 2002—when plaintiffs were unwilling to settle for less than $250,000, Garlock was willing to expend significant sums in defense of cases to prove it had no liability.[14]

Exhibit 4: Garlock payments to plaintiffs to resolve claims

Resolution year	$0	Less than $50K	Less than $250K	$250k and more	Total
1984	0	3	0	0	3
1985	64	51	0	0	115
1986	1	9	0	0	10
1987	361	4,242	2	0	4,605
1988	77	9,974	0	0	10,051
1989	475	8,753	1	0	9,229
1990	360	10,280	1	0	10,641
1991	336	16,667	2	0	17,005
1992	234	14,345	1	0	14,580
1993	211	12,072	14	4	12,301
1994	939	11,083	3	1	12,026
1995	1,072	23,364	3	0	24,439
1996	1,356	32,715	2	1	34,074
1997	3,268	26,133	5	1	29,407
1998	5,583	26,529	19	0	32,131
1999	10,900	35,971	21	2	46,894
2000	7,643	41,147	86	10	48,886
2001	5,501	52,876	188	9	58,574
2002	7,259	35,682	257	16	43,214
2003	6,349	30,458	313	17	37,137
2004	19,643	17,740	355	20	37,758
2005	31,412	12,341	293	15	44,061
2006	17,476	7,853	345	46	25,720
2007	3,695	5,063	370	47	9,175
2008	5,877	3,006	410	46	9,339
2009	17,805	3,021	478	23	21,327
2010	4,730	1,222	165	12	6,129
Total	**152,627**	**442,600**	**3,334**	**270**	**598,831**

[14] The economic model of liability and settlements described in Section III confirms that a rational defendant will spend $250,000 to settle multimillion-dollar lawsuits that would cost $500,000 in defense expenses to try. This is true even when the defendant is certain it will win, so long as the defendant believes that the plaintiff is willing to take the case to trial if the defendant does not settle.

Exhibit 5: Garlock resolved claims

Resolution year	Dismissed w/out payment	Defense verdict	Plaintiff verdict	Settled	Total
1984	0	0	0	3	3
1985	64	0	0	51	115
1986	1	0	0	9	10
1987	361	0	0	4,245	4,606
1988	77	0	0	9,974	10,051
1989	475	0	0	8,754	9,229
1990	360	1	0	10,281	10,642
1991	333	7	3	16,668	17,011
1992	233	4	0	14,345	14,582
1993	204	15	3	12,085	12,307
1994	930	24	1	11,084	12,039
1995	1,050	31	2	23,366	24,449
1996	1,337	21	1	32,712	34,071
1997	3,247	24	1	26,136	29,408
1998	5,577	16	2	26,547	32,142
1999	10,885	4	1	35,990	46,880
2000	7,642	2	1	41,242	48,887
2001	5,497	9	3	53,070	58,579
2002	7,257	2	5	35,953	43,217
2003	6,346	4	0	30,784	37,134
2004	19,634	6	4	18,115	37,759
2005	31,400	3	4	12,643	44,050
2006	17,472	3	1	8,243	25,719
2007	3,690	1	1	5,476	9,168
2008	5,872	3	1	3,462	9,338
2009	17,795	6	1	3,523	21,325
2010	4,728	0	1	1,411	6,140
Total	**152,467**	**186**	**36**	**446,172**	**598,861**

(52) With the shifting litigation environment created by the bankruptcy filings of its most prominent codefendants, Garlock began to have its primary defenses on significant cases frustrated. For cases with some credible allegation of gasket contact, Garlock's best defense was neither that the plaintiff did not work with Garlock's products, nor that Garlock's products did not contain asbestos, but rather that Garlock's relative contribution to the plaintiff's harm was like a bucket of water dropped into the ocean.[15] Historically, when prominent pipe and block insulation codefendants, such as Owens Corning and Armstrong World Industries, were an active part of the tort case alongside Garlock, plaintiffs effectively

[15] *Moeller v. Garlock Sealing Technologies, LLC*, 660 F.3d 950 (6th Cir. Sept. 28, 2011).

made Garlock's case simply by talking in detail about all of their exposure to these, and other similar companies' asbestos-containing products.

(53) The bankruptcy wave of the early 2000s led to an abrupt change in the plaintiff's testimony regarding the source of their exposures. Some plaintiffs suddenly failed to identify the products of Garlock's former codefendants, which were being reorganized through bankruptcy proceedings.[16] For example, in the Vincent Golini case that Garlock settled in 2010 with the Shein Law Center, Golini's answers to interrogatories disclosed no brands of asbestos-containing products manufactured by reorganized defendants.[17] However, following Golini's settlement with Garlock and resolution of the tort case, it has been discovered that plaintiff's counsel filed no less than 20 bankruptcy trust claims seeking payment for Golini's exposure to the products of the reorganized companies. In addition, plaintiff's counsel filed voting ballots in four other then pending asbestos bankruptcy reorganizations. Deposition testimony in this case confirms that the practice of skirting the discovery rules by waiting until after tort recovery to file trust claims is a routine practice of some law firms.[18]

(54) The impact of this practice and the cost to Garlock of establishing the full range of the asbestos products that was the source of plaintiffs' exposure increased materially following the bankruptcy wave, when the plaintiffs failed to identify the products that were used in the same industrial settings as Garlock's. This problem was particularly acute because, in many cases, the source of much of the exposure information was the plaintiff. Moreover, it was not clear to anyone when the reorganized companies would start paying claims again, through 524(g) trusts, or how much of the reorganized companies' liability those trusts would cover.

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16 Video deposition of Peter A. Kraus, Jan. 14, 2013, at chap. 11, pp. 41–42; Video deposition of Benjamin P. Shein, Jan. 16, 2013, at chap. 11, pp. 43–44; Baron & Budd, P.C., *Preparing for Your Deposition* (Dallas: Baron & Budd, P.C., 1997).

17 *Golini v. Alfa Laval, Inc.*, No. 090601931 (Pa. C.P., Phila. Cnty. Apr. 29, 2010). Golini failed to positively identify exposure to the products of any reorganized company during answers to interrogatories, despite his sworn affidavits prior to filing a complaint against Garlock of exposure to the products of 14 reorganized defendants.

18 "We file trust claims after the completion of the tort litigation," Video deposition of Benjamin P. Shein, Jan. 16, 2013, at chap. 11, pp. 43–44.

(55) Defense costs doubled in just two years, as Garlock sought ways to establish the evidence regarding plaintiffs' exposures without the information that the plaintiffs used to provide as part of their case against the former asbestos defendants. Further, these costs continued at the higher level, even though the number of claims dropped through the decade to only 10% of their earlier annual rate.

Exhibit 6: Defense costs per year 1997 to 2009

Year	Defense cost
1997	$11,396,399
1998	$10,906,664
1999	$14,324,102
2000	$14,057,479
2001	$21,902,898
2002	$28,421,243
2003	$26,183,649
2004	$32,067,824
2005	$35,893,066
2006	$30,563,655
2007	$25,904,914
2008	$25,820,043
2009	$28,724,529

(56) In the new information regime, with some plaintiffs focusing their testimony on Garlock while omitting the information regarding exposures to products of former codefendants, Garlock was forced to acknowledge its increased trial risk on a broader range of cases as compared with the previous decade and began to pay more than $250,000 on as many as two dozen cases per year. This was the result of the more limited exposure information available from plaintiffs regarding their alternative asbestos exposures. Even though Garlock increased the number of cases in which it was willing to pay higher amounts, plaintiffs pressed Garlock to accept an even greater number of cases as having potential trial risk, refusing lower settlement amounts on additional selected cases that they pressed to trial.[19] Though Garlock continued to prevail on more than half of its trials, some that they lost resulted in large jury awards, establishing the trial risk for a greater number of cases each year than Garlock had previously accepted.

[19] Paul Grant telephone interview, Jan. 2013.

(57) Consequently, by 2006, Garlock increased the number of cases in which it paid more than $250,000 to between four and five dozen per year and began to develop better ways to prove the plaintiffs' alternative exposures.[20] Further attempts by plaintiff law firms over the next several years to expand the pool of plaintiffs that represented potential trial risk for Garlock failed, as Garlock began once again to win the vast majority of the additional cases that plaintiffs pressed to trial. Moreover, when it lost at trial, the awards to plaintiffs were much lower than they had been in the first part of the decade.

(58) In summary, taking into account the nature of Garlock's asbestos-containing products, its trial record, and its settlement history, it is clear that only a few hundred of the 700,000 asbestos personal injury claims filed against Garlock represented claims for which Garlock faced the potential for an adverse verdict in the presence of all relevant information. Over the course of its asbestos litigation history:

- Garlock was dismissed on 150,000 claims without payment;
- Another 75,000 cases were abandoned against Garlock; and
- Garlock was released from another 445,000 cases, where it paid less than $250,000 for an average of less than $3,000 per case:
    1. 95% of these cases were paid less than $10,000; and
    2. 99% were paid no more than $25,000

These are 670,000 cases in which the plaintiffs were unwilling to take Garlock to trial, even though Garlock only made a nuisance payment to resolve the case.

(59) In total, $1.21 billion, nearly 90% of all of Garlock's payment to claimants including verdicts, were made to these 670,000 plaintiffs. In other words, 90% of all of Garlock's payments to claimants were made primarily to avoid the much higher expense of establishing that Garlock had little, if any, liability. The remaining $174 million in Garlock payments were made to only 657 claimants of whom 432 were paid settlements totaling $137 million primarily due to concerns of adverse trials if the cases were not paid. These 432 cases were

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[20] Video Deposition of David Glapsy, Jan. 22, 2013, at chap. 11, pp. 82–83; Expert Report of David M. Glapsy, Esq., Feb. 6, 2013, at chap. 11, pp. 3–4.

predominately mesothelioma cases brought by plaintiffs in the 2000s that focused their case on Garlock, downplaying (and sometimes concealing) their exposure to the products of the reorganizing asbestos products companies. Finally, $37 million was paid to plaintiffs who took Garlock to verdict. Of the 225 cases tried, just 10 plaintiffs accounted for over 90% of money paid to cases with verdicts.

Exhibit 7: Garlock's expenditures on settlements and trials

Type of case	Amount paid	% of total amount paid	Amount per case	Number of cases	% of cases
Cost avoidance	$1,205,731,042	87.4%	$2,016	598,194	99.89%
Liability concern	$136,682,272	9.9%	$316,394	432	0.07%
Resolved at trial	$36,883,060	2.7%	$166,892	225	0.04%
Total	**$1,379,296,374**	**100.00%**	**$2,303**	**598,851**	**100%**

(60) In addition to the amounts that Garlock paid to plaintiffs, Garlock spent approximately $400 million in explicit defense fees over the same time period. In total, over three decades, Garlock spent $1.8 billion associated with managing over 700,000 asbestos personal injury claims, for 99.9% of which Garlock had little, if any, liability.

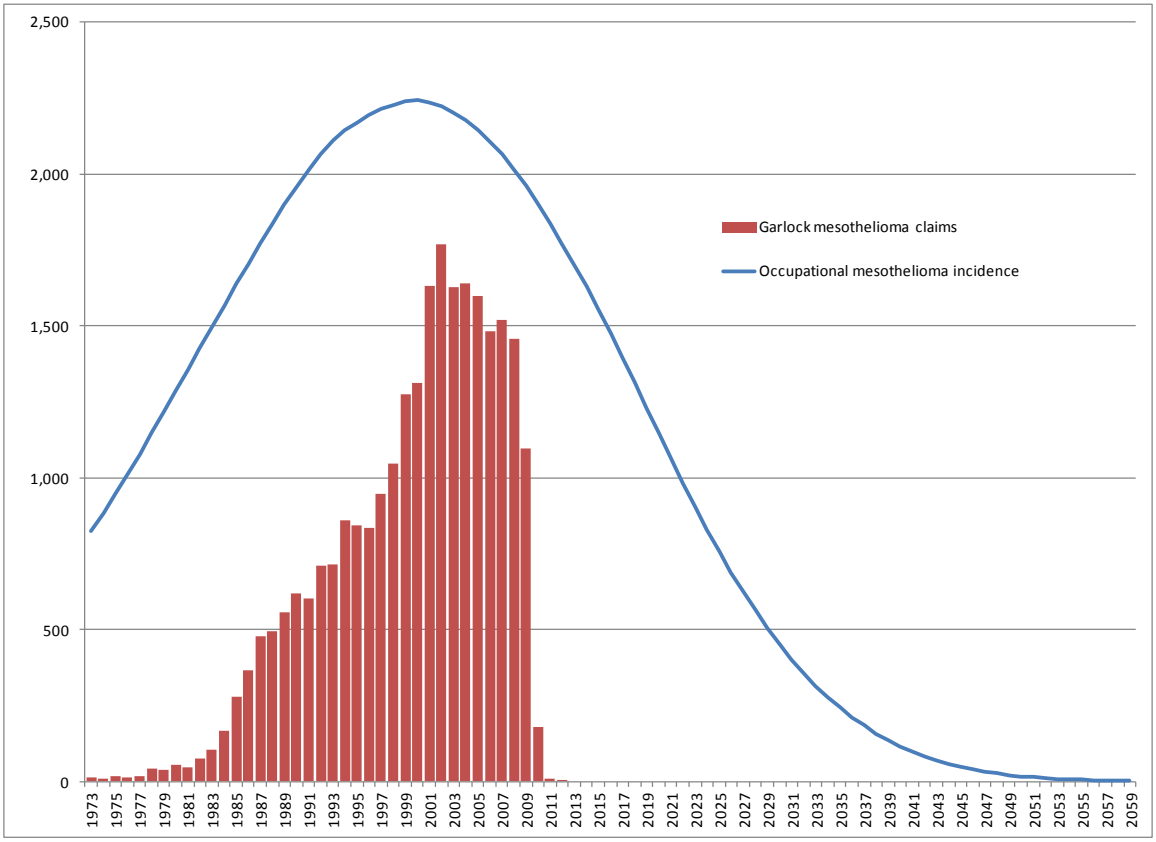
(61) Over the course of the last decade, the focus of Garlock's asbestos defense, and all other asbestos defendants of which I am aware, has shifted from managing the flood of fraudulent, non-malignant claims to defending mesothelioma claims. Whereas prior to the bankruptcy wave over 90% of Garlock's asbestos spending was on non-mesothelioma claims, by 2009, 85% of its asbestos expenditures were on mesothelioma claims. Exhibit 8 shows the growing prominence of mesothelioma claims over the last decade, a trend likely to continue as payments on account of other diseases would have continued to decrease.

Exhibit 8: Garlock's settlements by type of asbestos-related disease

Resolution year	Mesothelioma	Other claims	Total	% mesothelioma
1990 & before	$2,881,763	$35,576,965	$38,458,728	7%
1991-1995	$10,730,179	$95,011,840	$105,742,019	10%
1996-2000	$36,824,414	$261,510,749	$298,335,163	12%
2001-2005	$195,294,073	$339,343,038	$534,637,111	37%
2006	$58,921,566	$20,836,521	$79,758,087	74%
2007	$63,119,748	$20,423,650	$83,543,398	76%
2008	$71,535,750	$12,676,958	$84,212,708	85%
2009	$71,109,567	$12,573,126	$83,682,693	85%
2010	$29,692,357	$4,351,050	$34,043,407	87%

(62) Mesothelioma claims constituted a small portion of the total number of claims filed against, and payments made by Garlock in the 1990s and the early part of the 2000s. Only a small portion of the total number of occupational, exposure-related mesothelioma diagnoses through the 1990s named Garlock. However, the portion of the mesothelioma incidence naming Garlock increased over the last part of the 1990s through the early 2000s. Exhibit 9 shows the total incidence of occupationally-related mesothelioma diagnosed every year and the number of claims filed against Garlock by year of diagnosis. This exhibit shows that the mesothelioma plaintiffs naming Garlock increased as the incidence of occupational mesothelioma increased through its peak in the early 2000s. By then, about 75% of the occupationally caused mesothelioma incidence named Garlock in their complaints, even though a large number of them did not have any contact with Garlock's gaskets or packing, as demonstrated by the PIQ data. The decline in occupationally exposed mesothelioma incidence will continue in the future. This is not just a prediction of the various epidemiological models; it is a result that must occur. The number of exposed individuals will continue to decrease, as no additional people are occupationally exposed to significant amounts asbestos and as those that were occupationally exposed continue to age.

Exhibit 9: Incidence of occupationally exposed mesothelioma diagnoses and Garlock claims



(63) Dramatic changes swept over Garlock and other tertiary asbestos defendants as their high-exposure–products codefendants filed for bankruptcy protection in a wave of asbestos-related reorganizations beginning in 2000. Prior to this bankruptcy wave, asbestos lawsuits were centered on the highly toxic and friable asbestos-containing thermal insulation and refractory products that most scientific literature considered to present the highest excess exposure risk.[21] In turn, defendants responsible for the manufacturing and distribution of such products were the significant source of plaintiff compensation. Even after the largest manufacturer of asbestos-containing thermal insulation products, Johns-Manville, filed for bankruptcy protection in 1982, dozens of other thermal insulation defendants such as

[21] US Environmental Protection Agency, "Asbestos (CASRN 1332-21-4)," accessed February 15, 2013, http://www.epa.gov/iris/subst/0371.htm.

Owens-Corning, Fibreboard, and Pittsburgh Corning remained and continued to be primary sources of compensation. However, following the bankruptcies of those frontline defendants during the bankruptcy wave, plaintiff attorneys shifted their litigation strategy away from the traditional thermal insulation defendants and towards new and tertiary defendants such as Garlock. First, there was an upward surge in filings against Garlock, with the number of mesothelioma claims filed against Garlock doubling just a few years after the beginning of the bankruptcy wave. This increase was due to an influx of claims with tenuous exposure allegations against Garlock. Most of these new filings were dismissed without payment for not meeting even the most basic criteria to establish a potential claim against Garlock.

(64) Exhibit 10 shows the number of mesothelioma claims filed against Garlock by year of filing and current resolution status. This exhibit shows that the majority of the claims filed against Garlock prior to the bankruptcy wave were eventually settled. As the number of claims filed against Garlock increased, however, the number of dismissals without payment increased by several multiples. While the number of settlements increased as well, it did so in a smaller proportion.

Exhibit 10: Garlock's mesothelioma claims filed

Filing year	Unresolved	Dismissed w/out payment	Settled	Defense verdict	Plaintiff verdict	Total
1978	0	0	2	0	0	2
1986	0	1	2	0	0	3
1987	5	60	378	0	0	443
1988	5	84	509	4	1	603
1989	1	57	394	2	0	454
1990	4	106	554	2	0	666
1991	4	70	596	2	0	672
1992	3	66	619	4	0	692
1993	9	79	552	6	1	647
1994	11	69	644	5	0	729
1995	8	157	758	5	2	930
1996	16	112	734	1	0	863
1997	12	143	737	1	1	894
1998	12	147	725	1	1	886
1999	26	131	738	2	2	899
2000	23	239	850	6	2	1,120
2001	39	311	1,053	3	1	1,407
2002	46	546	1,033	3	1	1,629
2003	112	735	1,109	3	4	1,963
2004	128	637	1,003	2	2	1,772
2005	299	585	910	2	0	1,796
2006	279	495	754	4	0	1,532
2007	396	468	726	4	0	1,594
2008	617	362	774	1	1	1,755
2009	1,218	234	380	0	1	1,833
2010	659	42	89	0	0	790
Total	**3,932**	**5,936**	**16,623**	**63**	**20**	**26,574**

(65) The second abrupt change for Garlock, brought on by the bankruptcy wave that began in 2000, was a dramatic increase in settlement demands by mesothelioma plaintiffs. During the 1990s, more than two thirds of paid mesothelioma claims were settled for no more than $4,000 and Garlock's overall average resolution amount for mesothelioma claims was $5,000. This was less than it cost Garlock to have its counsel attend each plaintiff's deposition, provide an initial assessment of a claim, and negotiate a settlement. The plaintiffs accepted these small amounts as they were aware, at their depositions and in their interrogatory responses, that they would identify the high exposure asbestos products that would form the basis of Garlock's key defense. Once initial discovery ended, Garlock would have the information it needed to establish that any gasket-related contact constituted a minimal share

of virtually all plaintiffs' total asbestos exposure and would have less incentive to pay anything to settle on many claims. Garlock paid this amount to resolve mesothelioma claims, even though it knew it had little, if any, trial risk for these claims, as it would have had to spend much more on legal fees to otherwise dispose of the claims.

(66) In contrast, as Garlock's high-exposure–product codefendants filed for bankruptcy protection, plaintiffs immediately began to demand more from Garlock, which now faced the prospect of proceeding to trial with a dramatically increased cost to establish the primary sources of most of the plaintiffs' asbestos exposures. Garlock also had to establish the amount of money that plaintiffs would likely receive from the trusts that would assume responsibility for these reorganized entities' liability shares when they emerged from bankruptcy. Plaintiffs immediately stopped suing the reorganizing companies that were effectively removed from the tort system by bankruptcy law protection. Some plaintiffs and their counsel made the strategic decision to focus their cases on Garlock and the other tertiary asbestos defendants. To increase their chances of winning a case against Garlock and these other tertiary defendants, these plaintiffs stopped identifying the brands, and in many cases even the types, of high-exposure asbestos products that were the source of much of their asbestos exposure.[22] This dramatically increased Garlock's defense costs. In a case in which Garlock historically would have received the plaintiff's own statements regarding his exposure to, say, Owens Corning Kaylo or Pittsburgh Corning Unibestos, Garlock now had to find another way to establish the plaintiffs' exposures to such products.[23] Types of cases that in prior years had no chance of making it to trial, because evidence of the full range of the plaintiff's asbestos exposures was prevalent, became feasible trial cases against Garlock. These cases would require hundreds of thousands of dollars to defend instead of just a few thousand or tens of thousands, as they had before. In a case that was going to trial, instead of having the plaintiff self-identified list of high-exposure–products companies which Garlock could use to prove its liability defense, Garlock had to find a way, if there was any without the plaintiff's cooperation, to identify which other companies were responsible for the plaintiff's injuries.

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22 Memorandum of Robinson, Bradshaw & Hinson, P.A., Feb. 8, 2013, "Partial Summary of Cases Where Exposure Information Used to Support Trust Claims or Bankruptcy Filings Was Not Disclosed."

23 Expert Report of David M. Glaspy, Esq., Feb. 6, 2013.

(67) As a consequence of these abrupt changes in the cost of defending mesothelioma cases, Garlock responded rationally by spending more on settlements, as well as more on defense. The result was that the average cost to settle a mesothelioma claim rose by more than $30,000 to approximately $35,000 in just a couple of years, as frontline codefendants exited the tort system to bankruptcy protection. Garlock, nonetheless, continued to resolve the vast majority of mesothelioma cases for an average of $5,000 per case, the resolution average for 75% of cases in the 2000s. However, for 25% of mesothelioma cases, the resolution cost rose to nearly $120,000 per case (including cases taken to trial). This was due to the increased cost of having to defend cases at trial, an expense of hundreds of thousands of dollars in each case. Further, in these trials, Garlock's risk was higher because plaintiffs' admissions of exposure to reorganizing companies' products were absent. Without the benefit of plaintiffs' exposure admissions to support its defense, Garlock lost a few large verdicts from 2001 to 2005. In response, Garlock increased the number of settlements it made over $250,000 instead of allowing those cases to proceed to trial too. Exhibit 11 shows this pattern.

Exhibit 11: Garlock's mesothelioma resolved claims

Resolution year	$0	$1 to $50K	$50k+ to $250K	$250k+ and more	Total
1986	1	0	0	0	1
1987	4	128	0	0	132
1988	5	238	0	0	243
1989	6	250	0	0	256
1990	10	459	1	0	470
1991	6	481	2	0	489
1992	9	425	1	0	435
1993	12	507	5	3	527
1994	16	436	2	1	455
1995	28	536	3	0	567
1996	31	641	1	1	674
1997	41	841	5	1	888
1998	44	660	19	0	723
1999	57	625	20	1	703
2000	69	688	82	9	848
2001	78	875	154	8	1,115
2002	101	813	231	15	1,160
2003	207	827	286	15	1,335
2004	469	762	283	20	1,534
2005	1,058	671	259	15	2,003
2006	661	567	317	46	1,591
2007	622	581	333	42	1,578
2008	581	532	380	43	1,536
2009	1,182	522	444	19	2,167
2010	688	340	145	12	1,185
Total	**5,986**	**13,405**	**2,973**	**251**	**22,615**

(68) The facts regarding plaintiffs' asbestos exposures and the causes of their mesothelioma differed little between the plaintiffs of the 1990s and the 2000s. I know this from my studies of both the epidemiology of mesothelioma and the mesothelioma claims of Garlock and other defendants over the last 20 years. In addition, the amount of money to be paid to plaintiffs by trusts of the reorganized codefendants of the 1990s will cover a large portion of the aggregate amounts that those defendants historically paid to plaintiffs, *albeit* with different shares than the reorganized defendants paid while in the tort system, before the bankruptcy wave of the 2000s.[24] Garlock's settlements dramatically increased through the

[24] *See* Stephen J. Carroll et al., *Asbestos Litigation Costs and Compensation: An Interim Report* (Santa Monica: RAND Corporation, 2005) at xxvii, 109, 117.

bankruptcy wave, though Garlock's Asbestos Liabilities changed little. The reasons for the dramatic change in settlements while the underlying liability changed little is embedded in the complicated economic relationship between settlements, liability, and the costs to all parties to the litigation. Section IV describes, through a buildup of increasingly complex hypothetical examples, the application of the standard law and economics model of settlements and liabilities to modern personal injury damages lawsuits of which Garlock's mesothelioma lawsuits are one example. In Section V, I apply this model to the facts of Garlock's circumstances to arrive at my estimates of Garlock's Asbestos Liabilities.

IV. Economics of damages liability and settlements

IV.1. Overview

(69) The reasons a company like Garlock would spend so much on settlements when it faces little actual liability are rooted in the differential of the economics of defending versus prosecuting asbestos liability lawsuits.

(70) It is a fact long well established in the law and economics literature that the amount that a defendant pays and a plaintiff accepts to settle a lawsuit is not a direct measure of its liability.[25] Depending on the nature of the litigation, settlements can be lower or higher than liability; some situations will lead the parties to settle for an amount less than liability (a windfall to the defendant and a loss for the plaintiff), while others will lead the parties to settle for an amount more than the actual liability (a windfall to the plaintiff and a loss for the defendant). Factors that affect the amount that a defendant pays other than liability include the direct costs of litigation, the potential impact on the defendant's reputation, the effect of litigation on the defendant's finances (stock price, ability to borrow, etc.), the time and resources that certain employees would have to spend on the process, and the distraction of management from the main business of the company. The amount that plaintiffs accept for releasing a defendant from the litigation is also affected by factors other than liability alone. The litigation process is onerous and costly; it takes time, sometimes years to resolve a case. Though plaintiffs' litigation costs in personal injury matters are structured differently than defendants' costs, they, too, matter.

(71) The purpose of this section is to use examples to establish the basic economic relationships between settlements and liabilities that result from the costs to the parties of litigating, the number of codefendants, the differences among the states' liability apportionment laws, and the effect of settlement trusts set up by bankruptcy plans of reorganization. I will carry the same example through several stages, over which I will add increasing complexity to arrive at the model that I will use to assess Garlock's Asbestos Liabilities and the Settlement Trust of its Plan of Reorganization.

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[25] Lucian A. Bebchuk, "Litigation and Settlement Under Imperfect Information," *RAND Journal of Economics* 15, no. 3 (1984): 404–15; Lucian A. Bebchuk, "A New theory Concerning the Credibility and Success of Threats to Sue," *Journal of Legal Studies* 25, no. 1 (1996): 1–25.

IV.2. Settlements are not a reliable proxy of liability when the costs of litigation are high, relative to liability

(72) When the costs to the defendant to try a case are large relative to its liability, and the plaintiff does not face those same costs, a defendant is likely to pay significantly more than its actual liability to resolve a case. The reason is that by doing so, the defendant avoids the even higher costs of defending a case at trial. Consider the following example. Assume that a defendant is sued by a plaintiff who asserts injury from a defendant's product in a jurisdiction where the plaintiff can obtain a damages award of $1,000K if he prevails at trial. Suppose that the plaintiff's attorney is to be paid a contingency fee of 35% of the settlement that the plaintiff receives either from the defendant or from a trial verdict. The trial cost to the plaintiff will be an additional $50K in expert fees and the like, assuming that the plaintiff wins; otherwise, the plaintiff's attorney will cover that cost. Suppose further that the defendant would prevail 19 out of 20 times if such a case was tried and the defendant were to put on a competent defense, but the defendant's defense cost is more expensive, at $250K through trial. The plaintiff's counsel is well aware of his low chances of winning at trial if the defendant prepares and puts on a competent case, but the plaintiff knows that he can win if the defendant does not properly invest in this preparation.

(73) In this situation, the liability of the defendant is $50K: for every such 20 cases taken to trial, the defendant will lose one, paying $1,000K on that case to the plaintiff, but paying nothing to the plaintiffs on the others. Its average liability is $50K for such a case (1/20*$1,000K=$50K).

Exhibit 12: Example liability calculation

Award if plaintiff wins	$ 1,000
Contingency rate	35%
Plaintiff costs avoided by settlement	$ 50
Defense costs avoided by settlement	$ 250
Plaintiff likelihood of winning	5.0%
Total liability per case	**$ 50**

(74) If the case proceeds to trial, the plaintiff will have a 5% chance of winning the case. In that case, he will receive $600K ($1,000*(1–0.35)–$50K=$600K). A 5% chance of winning in this situation means that the plaintiff's outcome of proceeding to trial is $30K. The Defendant will pay $250K if the case goes to trial and will lose another $1,000K, with a 5%

chance. Therefore, the defendant's expected payment of going to trial is $300K ($250K+0.05*$1000K=$300K).

(75) Suppose that the defendant offers to the plaintiff the expected liability amount of $50K to settle and not take the case to trial. In this instance, the plaintiff takes 65% of $50K, or $32.5K, equivalent to taking the case to trial and winning once every 20 cases. In this situation, the plaintiff is better off by the amount of the expected costs of trial, $2.5K (=$50K*0.05). However, the defendant pays $50K and saves $250K in trial costs; the defendant saves $200K by *not* going to trial, much more than the benefit to the plaintiff of calling off the trial.

(76) Clearly, the plaintiff can benefit by holding out for a larger settlement—he has less to lose from foregoing the $50K settlement offer than the defendant stands to gain. This is a standard bargaining situation in which both parties would be better off with a settlement instead of going to trial. This classic situation is expected to arrive at a bargaining outcome in which the benefits to the litigating parties of settling are shared equally. As long as both parties are represented by experienced, competent counsel, this equal splitting of the net gains to settlement would be the likely outcome of their bargain.

(77) In this circumstance, then, the most likely outcome is a settlement of $200K, more than 4 times the defendant's actual liability. To illustrate this, consider the following: at this settlement amount, the defendant saves $250K on the cost of trial and an average liability payment of $50K in liability, saving on average $100K = ($250K+$50K–$200K) by not having to defend the case at trial. The plaintiff stands to gain slightly more than $30K if the case proceeds to trial but will be able to keep $130K of the $200K settlement after his attorney's fee. The gain to both parties to the litigation is $100K when they settle the case for $200K.

Exhibit 13: Plaintiff and defendant expected outcome from settlement and trial

Equal bargaining power outcome			
	Trial	Settle	Gain to each of settlement
Plaintiff gain	$30	$130	$100
Defendant loss	$(300)	$(200)	$100

(78) Unless the is some way for the defendant to stop such cases from being filed, it can repeatedly be forced to pay significantly more than its actual liability, even on cases where it has no liability, so long as the defendant is convinced that the plaintiff will try the case if the defendant does not settle. In the example above, if the likelihood of the plaintiff winning is zero so long as the defendant will prepare a competent trial defense, then the settlement amount is $150K, even on cases in which there is zero liability.

(79) More generally, it is not the cost of a trial that determines the size of the settlement when the likelihood of the plaintiff winning is zero. Rather, it is the costs that can be avoided going forward by settling the case at that point in time in the litigation. For example, if after some initial discovery the litigation parties believe the defendant can get the case dismissed with an additional $50K in lawyer and other costs, then the expected settlement of the case is $30K.[26] Alternatively, if the defendant believes that there is only a 50% chance that the plaintiff will take the case to trial if the defendant does not settle, then the expected settlement is slightly more than $75K. However, no competent plaintiff's attorney will ever let a defendant believe that he will not take a case to trial if the defendant does not pay a settlement, unless it is obvious to both parties that the defendant will win with little extra expense, say, after a summary judgment motion in which it is obvious to both parties from their briefs that the defendant will prevail when the Court rules.

Exhibit 14: Example of liability calculation and corresponding settlement outcome

Award if plaintiff wins	$ 1,000
Contingency rate	35%
Plaintiff costs avoided by settlement	$ 50
Defense costs avoided by settlement	$ 250
Plaintiff likelihood of winning	5%
Total liability per case	**$ 50**
Settlement	**$ 200**
Plaintiff recovery	**$ 130**
Liability multiple defendant pays	**400%**
Liability multiple plaintiff receives	**260%**

[26] The defendants saves $20K, paying $30K to settle instead of $50K in fees to have the case dismissed, whereas the plaintiff gets $20K = 65% of $30K instead of nothing. Both gain $20K from a $30K settlement.

IV.3. Plaintiffs' emotional cost of participating in a trial reduces settlements but has no effect on a defendant's liability

(80) According to what I have heard said by several plaintiff attorneys, a factor that affects the plaintiff's decision to proceed to trial is the emotional cost of trial to the plaintiff. This factor affects settlements in the opposite direction from the legal fee asymmetry discussed in the section above, effectively reducing the settlement. Just like the legal fee asymmetry, plaintiffs' emotional costs do not affect liability in the case; they only affect the size of the expected settlement paid by the defendant.

(81) Though not directly observable, a proxy for the plaintiff's emotional cost of a trial can be estimated in a similar manner to how a judge or jury may evaluate the non-economic damages for a plaintiff's pain and suffering from an injury. For example, assume that the plaintiff spends 250 hours preparing and participating in a trial. Assume further that an appropriate wage for the plaintiff if he were to have a job is $20 per hour. In this situation, the plaintiff's economic damages from participating in the trial are $5,000, the amount he could have earned doing something else. Finally, assume a pain-and-suffering-multiple of 4, a common non-economic damage multiplier for mesothelioma cases. On this basis, the value of the plaintiff's emotional cost is $20K (250hrs*$20/hr*4=$20K).

(82) In the example above, where the plaintiff had a 5% chance of winning at trial, accounting for the plaintiff's emotional cost reduces the settlement from $200K to $188K. For the no-liability example above, the expected settlement drops from $150K to $140K, so long as the defendant is convinced that the plaintiff will proceed to trial if the defendant does not settle.

Exhibit 15: Effect of plaintiff's emotional cost on expected settlement

Award if plaintiff wins	$ 1,000
Contingency rate	35%
Plaintiff costs avoided by settlement	$ 50
Plaintiff emotional cost of trial	$ 20
Defense costs avoided by settlement	$ 250
Plaintiff likelihood of winning	5.0%
Total liability per case	**$ 50**
Settlement	**$ 188**
Plaintiff recovery	**$ 122**
Liability multiple defendant pays	**376%**
Liability multiple plaintiff receives	**244%**

(83) The role of emotional costs on settlements will vary from case to case, causing some inherent uncertainty between the sizes of settlements relative to liability, particularly when the likelihood of the plaintiff winning is low. Some plaintiffs simply want their day in court. In such cases, emotional costs are negative, and the defendant will have to pay more in settlement if it wants to avoid the costs of trial. Alternatively, other plaintiffs just want to be done with the litigation without a trial. In those cases, the defendants may pay nothing at all if the defendant knows this piece of information. However, I would expect neither of these extreme situations to typically occur with professional competent plaintiffs' counsel working on contingent fee arrangements. These counsels will have advised their clients as to the risks and costs of litigation well before any settlement is contemplated. Moreover, plaintiff law firms are businesses—they are unlikely to take on many cases that will not be profitable. For this reason, it is unlikely that plaintiffs' emotional costs are a large factor in determining the outcome of most cases.

(84) Another situation that diminishes the role of the plaintiff's emotional costs on settlements, and also diminishes the role of the plaintiff's costs generally, is the presence of multiple defendants in the case. A factor that impacts the settlement dynamic is the cost saved by both the plaintiff and the defendant of reaching a settlement. If the plaintiff settles with a defendant before all other codefendants have settled, then the plaintiff has effectively no cost savings—the plaintiff has not avoided any of his trial costs, monetary or emotional, as the plaintiff must still prepare for trial against the remaining codefendants. Only costs that can be avoided by settlement in turn affect settlements. The defendant that wants out of a case before the other codefendants settle will avoid more of his own litigation costs but will be negotiating to settle with a plaintiff who avoids little, if any, costs by settling, so long as other defendants remain in the case. For purposes of my examples below, I will consider the plaintiff's emotional costs as a factor affecting settlements.

IV.4. Financially viable codefendants affect both a defendant's liability and its settlements

(85) A second factor that affects both settlements and liability is the availability of viable codefendants. How settlements and liability are affected is determined by the liability sharing laws of each state. The liability sharing laws are variants of two basic types: several liability, otherwise called proportional liability, where each defendant can be held responsible for only their jury assigned share of liability; and joint and several liability, where each defendant is jointly liable for the entire amount of any jury award. In joint and several jurisdictions, liable defendants who pay more than their share of a verdict may seek contribution from other responsible parties to recoup that party's share of the verdict award and receive credit for other defendants' contributions to the award.

(86) Therefore, as long as all liable parties have the resources to pay their liability share, and all of the relevant information is known by all of the parties in the matter, the liability of a defendant is the same under either legal system. What is different, however, is who bears the cost of collecting the codefendant liability. In a several liability system, the plaintiff must pursue a codefendant for its liability share. In joint and several systems, the plaintiff can collect the full jury award from a single defendant at trial, which must then pursue any codefendants for their allocated shares, to the extent they did not receive credit for the codefendants' shares. In either system, a defendant must ensure that any viable codefendant is identified and their liability share assigned or face the risk of being required to pay more than their actual liability share, had all relevant facts been known.

(87) To illustrate the potential impact of a codefendant on a defendant's liability and settlement, consider again the example case of a plaintiff with a 5% chance of winning $1,000K, but adding a second financially viable defendant who is equally liable for the plaintiff's injuries and has equal expected trial costs to the first defendant. This reduces the liability of each defendant by half, to $25K. Now suppose that the case is litigated in a state where a settling defendant's liability share is subtracted from any verdict in arriving at the amount that a defendant has to pay if it loses at trial. This would occur either in a proportional liability state or a joint and several state that assigns a payment credit based on the settling defendant's liability share, rather than on the amount of its settlement. In such jurisdictions, the expected settlement (after also taking account of the plaintiff's emotional cost of $20K)

drops by only $25K, or less than 15%, from $188K to $163K. Whereas the aggregate liability is the same, $50K (0.05*$1,000K=$50K), the total payment by the defendants is increased from the $188K (paid by the one defendant in the first example) to $326K ($163K+$163K=$326K) (paid by the two defendants in this example). This total settlement is more than 6 times the expected liability of the defendants. The reason that each defendant's settlement decreases by a much smaller percentage than each defendant's expected liability is that each faces the full cost of a trial if the other defendant settles. In other words, the impact of the asymmetric costs discussed above increase when we switch from a case with one plaintiff and one single defendant to a case with one plaintiff and multiple defendants.

Exhibit 16: Effect of availability of financially viable codefendants on liability and expected settlement in a jurisdiction with liability share contribution

Award if plaintiff wins	$ 1,000
Contingency rate	35%
Plaintiff costs avoided by settlement	$ 50
Plaintiff emotional cost of trial	$ 20
Prior tort settlements	$ 163
Liable tort defendants if plaintiff wins	2
Defense costs avoided by settlement	$ 250
Plaintiff likelihood of winning	5.0%
Settlement per defendant	**$ 163**
Liability per defendant	**$ 25**
Total liability per case	**$ 50**
Total settlements	**$ 326**
Plaintiff recovery	**$ 212**
Liability multiple defendant pays	**652%**
Liability multiple plaintiff receives	**423%**

(88) Suppose instead that the case is litigated in a joint and several liability state, where the verdict is only reduced by the amount of a settling defendant's settlement amount, not by its liability share. As before, the total liability and the liability share of each defendant does not change. However, in such jurisdictions, the defendant that loses at trial must pursue the settling defendant for contribution, its share of the judgment minus the amount it already paid in settlement. This is not costless, as it may need to litigate to get the additional amount. Moreover, if it does litigate, to collect it may need to use a liability theory that is contrary to its defense posture in other such cases, undermining its future defenses when such a case

arises again. Assuming they cannot cost-effectively pursue contribution, the defendants' expected settlement is higher, by $16K, than in the states with proportional liability apportionment. This difference is a risk premium that defendants pay to plaintiffs for the additional risk they face by having to seek contribution if they lose instead of simply getting credit for the full amount of the codefendants' liability share.

Exhibit 17: Effect of availability of financially viable codefendants on liability and expected settlement in a jurisdiction with settlement set-offs

Award if plaintiff wins	$ 1,000
Contingency rate	35%
Plaintiff costs avoided by settlement	$ 50
Plaintiff emotional cost of trial	$ 20
Prior tort settlements	$ 179
Liable tort defendants if plaintiff wins	2
Defense costs avoided by settlement	$ 250
Plaintiff likelihood of winning	5.0%
Settlement per defendant	**$ 179**
Liability per defendant	**$ 25**
Total liability per case	**$ 50**
Total settlements	**$ 358**
Plaintiff recovery	**$ 233**
Liability multiple defendant pays	**716%**
Liability multiple plaintiff receives	**465%**

(89) The amount that a plaintiff can collect above the defendants' expected liability, in circumstances with this type of cost asymmetries, becomes even larger as the number of codefendants grows. Suppose in this example that there are four equally liable codefendants instead of just two. All face the prospect of a trial, with the other three codefendants settled out of the case, facing the full costs of a trial and the risk of having to seek contribution from all three if the plaintiff wins. In this circumstance, each will have an expected settlement of $163K, assuming that the litigation costs to recover contribution are prohibitively expensive. This results in each defendant paying more than 10 times its liability.

Exhibit 18: Multiple defendants raise the premium plaintiffs receive above liability in joint and several liability jurisdictions

Award if plaintiff wins	$ 1,000
Contingency rate	35%
Plaintiff costs avoided by settlement	$ 50
Plaintiff emotional cost of trial	$ 20
Prior tort settlements	$ 490
Liable tort defendants if plaintiff wins	4
Defense costs avoided by settlement	$ 250
Plaintiff likelihood of winning	5.0%
Settlement per defendant	**$ 163**
Liability for tort defendant	**$ 12.5**
Total liability per case	**$ 50**
Total settlements	**$ 653**
Plaintiff recovery	**$ 425**
Liability multiple defendant pays	**1307%**
Liability multiple plaintiff receives	**850%**

(90) Some states, notably California and New York, have a hybrid legal liability system that is joint and several for economic damages but several for non-economic damages. In these jurisdictions, only a portion of prior settlements are set off against a verdict should the plaintiff win at trial. Moreover, the court's method of apportionment of the prior settlement affects settlements and the risk premium embodied in those settlements, but not the defendants' liability. For example, in California, the prior settlement is apportioned into the part attributable to economic and non-economic liability of the second defendant on a pro rata basis according to the portion of each in total jury award should the plaintiff win at trial. Only the portion attributed to the economic portion is used as a set-off against any jury verdict. This, of course, results in expected settlements in between the expected settlement in a joint and several liability apportionment state and the settlement in a several only apportionment state; where the settlement falls in that range is determined by the portion of the potential jury award that is economic damages (apportioned as joint and several) and non-economic (apportioned as several only). Assuming that $200K of the jury award is for economic damages, the expected settlement in the two-defendant example above is $166K.

Exhibit 19: Effect of economic loss on settlements

Award if plaintiff wins	$ 1,000
Contingency rate	35%
Plaintiff costs avoided by settlement	$ 50
Plaintiff emotional cost of trial	$ 20
Plaintiff economic loss	$ 200
Prior tort settlements	$ 166
Liable tort defendants if plaintiff wins	2
Defense costs avoided by settlement	$ 250
Plaintiff likelihood of winning	5.0%
Settlement per defendant	$ 166
Liability for tort defendant	$ 25
Total liability per case	$ 50
Total settlements	$ 332
Plaintiff recovery	$ 216
Liability multiple defendant pays	665%
Liability multiple plaintiff receives	432%

IV.5. A codefendant paying claims through a 524(g) trust affects both the settlements and liability of tort defendants in joint & several tort jurisdictions

(91) If a defendant cannot cover its share of an adverse verdict should a case actually be tried, this raises the risk to the other defendants, increases their expected settlements, and allows the plaintiff to obtain a risk premium for settlement. This would be the situation if a codefendant has gone through bankruptcy reorganization and resolves personal injury claims against it through a settlement trust that pays its share of expected liability to each claimant but cannot pay more.

(92) In the two-defendant example above, suppose the second defendant has gone through bankruptcy reorganization and now resolves personal injury claims against it through a settlement trust that pays $25K for each such personal injury claim; recall that this amount represents that defendant's expected liability share for that claim. In a several jurisdiction, neither the liability of $25K nor the expected settlement of $163K for the first defendant changes with the change in the financial viability of the second defendant. In fact, nothing would change for the first defendant regardless of what the first defendant does or does not pay. Even if the second defendant could pay nothing, as long as all of the same evidence on the joint liability of the second defendant was presented to the jury in the same manner as

when the second defendant was financially viable, the change in that defendant's financial viability does not impact the other defendant.

(93) In joint and several jurisdictions, the average liability of the first defendant in this example does not change either, as long as the second defendant covers its liability share. However, the expected settlement of the first defendant now increases to $187K, as the payment from the settlement trust only serves as an offset to the verdict amount should the plaintiff win, not as an offset of the liability share of the reorganized codefendant. The increase in the expected settlement of $24K is a risk premium paid by the first defendant, who now bears the risk of an adverse verdict without the full benefit of the offset of the liability share of the second defendant. When contribution is cost prohibitive in joint and several states, the increase is only $8K in this example, an increase in the risk premium associated with such jurisdictions.

(94) In a trial with a financially viable codefendant, the first defendant faces a verdict risk of $500K=$1,000K–$500K, i.e., the expected award minus the share assigned to the second defendant, either by direction of the judge or through a contribution claim by the first defendant against the second defendant. In a trial with the reorganized codefendant, the first defendant faces a verdict risk of $975K=$1,000K–$25K, i.e., the award minus the amount recovered by the plaintiff from the liability trust of the second defendant. In this circumstance, the liability of the first defendant remains $25K=(0.05*$1,000K)–$25K; however, the trial risk of the first defendant becomes $48K=0.05*$975K. The difference is the $24K risk premium that can be extracted from the first defendant by a competent plaintiff's attorney who knows the risks that a defendant faces in a joint and several liability state.

Exhibit 20: Effect of a reorganizing codefendant on the viable defendant's settlement

Award if plaintiff wins	$ 1,000
Contingency rate	35%
Plaintiff costs avoided by settlement	$ 50
Plaintiff emotional cost of trial	$ 20
Prior tort settlements	$ -
Liable tort defendants if plaintiff wins	-
Trust payments	$ 25
Liable trust parties if plaintiff wins	1
Defense costs avoided by settlement	$ 250
Plaintiff likelihood of winning	5.0%
Settlement per defendant	**$ 187**
Liability per defendant	**$ 25**
Total liability per case	**$ 50**
Total settlements	**$ 212**
Plaintiff recovery	**$ 138**
Liability multiple defendant pays	**424%**
Liability multiple plaintiff receives	**276%**

(95) If the payment from the liability trust of the second defendant is less than its share of expected liability, then the liability of the first defendant increases. For example, suppose the liability trust of the second defendant pays only $10K, less than its expected liability share of $25K. In this circumstance, the liability of the first defendant increases to $40K=(0.05*$1,000K)–$10K, and the trial risk of the first defendant increases to $49.5K=0.05*$990K=($1,000K–$10K). The verdict risk premium reduces to $9.5K, the remaining increase due to a joint and several liability transfer to the first defendant from the second defendant that can no longer cover its liability share. (In this case, the settlement also increased, but by less than is observable with numbers rounded to the thousands, as the difference is only $800, from $186.6K to $187.4K).

Exhibit 21: Effect of a reorganizing codefendant on the viable defendant's liability when the codefendant does not cover its portion of liability

Award if plaintiff wins	$ 1,000
Contingency rate	35%
Plaintiff costs avoided by settlement	$ 50
Plaintiff emotional cost of trial	$ 20
Prior tort settlements	$ -
Liable tort defendants if plaintiff wins	-
Trust payments	$ 10
Liable trust parties if plaintiff wins	1
Defense costs avoided by settlement	$ 250
Plaintiff likelihood of winning	5.0%
Settlement per defendant	**$ 187**
Liability for tort defendant	**$ 40**
Total liability per case	**$ 50**
Total settlements	**$ 197**
Plaintiff recovery	**$ 128**
Liability multiple defendant pays	**394%**
Liability multiple plaintiff receives	**256%**

(96) The examples above assume that all of the same evidence on the joint liability of the second defendant was presented to the jury in the same manner as when the second defendant was financially viable. This may not be an appropriate assumption, depending on the circumstances of the litigation and the source of the liability information. As discussed in the background section above, one of the problems faced by current asbestos tort defendants is that the information regarding the liability of reorganized codefendants is not as readily available as it was when those entities were defendants in the tort system. This problem is particularly acute if the relevant information is most readily available from the plaintiff and is most convincing when also presented by the plaintiff. Specifically, defendant X's assertion at trial, in its defense that it was really the products of Company Y that caused the plaintiff's injury, is more convincing if the plaintiff establishes, "I was exposed to the products of X and Y," than it is if the plaintiff says, "I was exposed to the products of X, and I do not know the name of any other product to which I was exposed."[27]

(97) The financial incentive for plaintiffs to strategically withhold liability information regarding a trust defendant is strong if the rules of the trust do not require the plaintiff to identify all of

[27] Baron & Budd, P.C., *Preparing for Your Deposition* (Dallas: Baron & Budd, P.C., 1997);

his sources of liability in his tort case. This impact is compounded if the plaintiff is allowed to delay filing a trust claim until after his tort claim is resolved.[28] This is because the withholding of relevant liability information increases the likelihood that the plaintiff prevails at trial and raises the litigation cost to the remaining tort defendant as it attempts to substitute what would have been a plaintiff's admission with alternative testimony that may be expensive to develop without the plaintiff's cooperation. To illustrate, consider again the example above of a several liability jurisdiction with a single tort defendant and a single trust defendant that leads to a tort settlement of $163K. Suppose initially that the plaintiff withholds the relevant liability information about the trust defendant that raises the tort defendant's chances of losing at trial from 5% to 30% and that the trust defendant is not assigned liability if the plaintiff wins. Two changes result from the increase in the trial risk. First, the apparent liability is increased from the omission of the information. Whereas the actual liability of the defendant has not changed from $25K, the chance of the tort defendant losing at trial has quadrupled, and the liable trust party is omitted from being assigned its proper share, raising the apparent liability 12-fold to $300K. The increase in apparent liability of $175K is attributable to the lack of factual information, not an increase in liability. Second, the settlement more than doubles from $163K to $430K, as the tort defendant recognizes the higher trial risk from the omission of the relevant liability information.

(98) Now suppose that the tort defendants react to the omission of the liability information by attempting to substitute with alternative testimony what would have been a plaintiff's liability information if the trust defendant were still viable. Suppose that this raises the trial costs of the tort defendant to $500K, but lowers its trial risk to 10%. The substitute information improves its chances at trial, but not by as much as it would if it had been presented by the plaintiff. In this circumstance, the apparent liability is reduced to $100K, and the settlement amount would decrease to $388K.

(99) As this example demonstrates, the financial incentive for a plaintiff to strategically withhold valuable codefendant liability information can be substantial. So long as it materially affects

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[28] "If in my judgment it would benefit the litigation case to delay the filing of a claim, and it was lawful to delay the filing of a claim, we would do that" (Video deposition of Peter A. Kraus, Jan. 14, 2013, at chap. 11, pp. 41–42).

the likelihood of winning against a tort defendant, materially affects the defendant's defense costs, or both, it has a significant effect on settlements. It also raises the apparent liability of a tort defendant but does not raise the actual liability so long as the trust defendants can cover their actual liability.

Exhibit 22: Effect of information withholding by the claimant on apparent liability and settlement for the viable defendant

Award if plaintiff wins	$ 1,000
Contingency rate	35%
Plaintiff costs avoided by settlement	$ 50
Plaintiff emotional cost of trial	$ 20
Prior tort settlements	$ -
Liable tort defendants if plaintiff wins	-
Trust payments	deferred
Liable trust parties if plaintiff wins	missing
Defense costs avoided by settlement	$ 500
Plaintiff likelihood of winning	10%
Settlement per defendant	**$ 388**
Liability for tort defendant	**$ 25**
Apparent liability for defendant	**$ 100**
Total settlements	**$ 413**
Plaintiff recovery	**$ 268**
Liability multiple defendant pays	**826%**
Liability multiple plaintiff receives	**537%**

(100) The above examples demonstrate that settlements are not a reliable measure of a defendant's liability when the costs of the litigation are large and asymmetric, and the likelihood of a liability determination against a defendant is small. Financially responsible defendants will pay settlements much above their liability when the marginal costs of defending are high relative to the plaintiff's marginal prosecution costs, even if there is little or no liability. This situation can be repeated, case after case after case, so long as each case has its own facts and circumstances and the defendant has to go to the expense of preparing each trial for a new jury to hear the liability and damages claims of the plaintiff. Suppose, for example, that there are 5,000 lawsuits filed over many years, with attributes similar to the example with 4 codefendants sued in a joint and several jurisdictions. Each of the defendants would have liability of $62.5 million but would pay settlements of more than $816 million. Had one of the defendants decided to fight each case to verdict instead of settle, it would have paid more than $1.3 billion, or more than 20 times its liability. Clearly in such circumstances a

company that can well afford to pay its liability can be driven into bankruptcy by the high cost of defending thousands of lawsuits.

(101) This is the situation that Garlock has faced for many years. In the 1990s and early 2000s, it faced hundreds of thousands of meritless manufactured, non-malignant claims; in the early 2000s and subsequently, it was forced to defend against thousands of mesothelioma cases from which it faced little likelihood of any actual liability finding. However, the costs to Garlock of establishing that it had no liability, particularly in light of the increasing costs and difficulty to establish an accurate picture of claimants' historical asbestos exposures, were far higher than the settlement payments necessary to resolve the majority of the mesothelioma claims asserted against it.

(102) Financially, Garlock did not have a liability problem. Garlock had a defense cost problem. I will show this in Section V, as part of my estimate of Garlock's Asbestos Liabilities.

V. Estimation of Garlock's mesothelioma liability

V.1. Steps to estimate Garlock's liability and expected future settlements of mesothelioma claims

(103) The economic model of damage recovery lawsuits described in the previous section provides the economic foundation to estimate Garlock's Asbestos Liabilities associated with its currently pending and projected future, currently unknown, mesothelioma claims. This section describes the estimates of all of the required components of the model, as well as the analyses performed and the data used in these estimates.

(104) The estimate is constructed in 12 steps, which I summarize here. Following that, I will provide the details of each step after a brief summary of the current mesothelioma litigation environment.

(105) Step 1: Estimate the potential plaintiff verdict amount of a claim in which Garlock is a defendant. This is the amount that the plaintiff would be awarded if he won his case against Garlock and other defendants. This will be estimated by using publicly available data on mesothelioma verdicts that I have compiled over the years.

(106) Step 2: Estimate the economic loss of mesothelioma plaintiffs. This provides the basis for parsing liability in states which have different liability sharing rules for economic and non-economic damages. Dr. Jeffery Brown, an economist on my staff, created a computer model of economic damages as would be used in trials of individual mesothelioma cases to provide expert testimony on lost earnings, medical costs, and the other components of economic damages routinely used in such cases. The model accounts for the age, occupation, and years of life lost in computing economic damages.

(107) Step 3: Estimate the recoveries of plaintiffs from other tort defendants and asbestos liability trusts. These are potential setoffs to a plaintiff award depending on the liability sharing and setoff rules of each jurisdiction. I have supplemented trust recoveries from the court-ordered claim sample with estimates of additional amounts that plaintiffs will receive from trusts in which they have filed claims and not been paid or from trusts in bankruptcy proceedings in which they voted. In addition, I have used standard regression techniques to estimate the tort and trust recoveries of claimants based on the court-ordered sample of recoveries and the relevant claim characteristics that affect the size of plaintiff recoveries.

(108) Step 4: Estimate defendants' and plaintiffs' litigation costs of taking cases to trial. For this purpose, I have been provided with available Garlock data on its costs to try cases in the past, and I have relied on testimony of plaintiff attorneys and public disclosures regarding their costs and business practices.

(109) Step 5: Estimate the likelihood that the plaintiff would win a judgment in a case against Garlock. I derive estimates of this from Garlock's historical trial record of 83 mesothelioma lawsuits. This is likely too high, as the vast majority of Garlock's cases were resolved at amounts that indicate virtually no likelihood of Garlock losing and little likelihood that the plaintiffs would take the cases to trial if Garlock refused to settle—these are pure defense cost avoidance settlements. Also, the cases that went to trial were cases in which the plaintiffs' counsels were demanding hundreds of thousands of dollars or more to settle, much more than the cost to settle all but a few cases against Garlock. Clearly, plaintiffs' counsels' actions indicate that they thought they had a better chance of winning these cases than the ones they settled for less money.

(110) Step 6: Estimate the number of liable codefendants and trusts of typical Garlock claimants. I will use this estimate to apportion awards based on the liability sharing rules of each jurisdiction, assuming that each liable party has an equal liability share. This is likely too high for Garlock and other current tort defendants relative to the exposure level of current tort defendants' products *vis-a-vis* the much higher asbestos exposure from the insulation products of the trusts, but it is consistent with the plaintiff's liability theory that exposure from low dose products above background level are substantial contributing factors to asbestos-related disease,[29] the liability theory that would have to prevail if Garlock were to lose a case at trial. For this purpose, I used a sample of 350 PIQs and 900 historical claims with deposition and interrogatory responses that provided documentary evidence of their non-Garlock exposures. I also used plaintiff trust claims and voting records in bankruptcy

[29] ACC information brief on page 74. "[O]nce the plaintiff has demonstrated the existence of an asbestos related disease, and exposure to the defendant's asbestos containing product, whether that exposure has been a substantial factor in causing the plaintiffs injury generally is a questions of fact left for the jury." *See also* Response of the Official Committee of Asbestos Personal Injury Claimants to the Debtors' Brief Concerning Scope and Purpose of Estimation of Mesothelioma Claims, Mar. 23, 2012; Expert Report of Laura S. Welch, Feb. 8, 2013.

proceedings as plaintiff admissions of exposure to the asbestos-containing products of each trust.

(111) Step 7: Establish the liability sharing rules of each plaintiff's jurisdiction. Garlock's counsel, Robinson Bradshaw & Hinson, P.A., has provided me with a memo summarizing the liability sharing rules for each of the 50 states and the District of Columbia. I have categorized them into a small number of alternatives that capture their essential features and have programmed these rules into my computer model.

(112) Step 8: Estimate the liability for the pending claims by using the economic model of damage recovery lawsuits and the estimates of the model's parameters from prior steps 1 to 7. In addition, I use the court-ordered PIQ data to identify pending claimants who assert direct or bystander/secondary contact with Garlock gaskets and packing, the claimant's age, life status of the injured party when the claim was filed, and the jurisdiction of the lawsuit. Because of the described statistical biases in the estimates of the economic models parameters, the estimates of the pending claims liability will likely also be above their true values.

(113) Step 9: Estimate the future incidence of occupationally caused mesothelioma. This is the first of two steps in estimating the number of future individuals in each year with Garlock liability. This is done by using the most recent Bates White epidemiological model that provides an estimate of the number, and age, of individuals who will be diagnosed with mesothelioma in the future. This model provides such estimates for each of several thousand occupation and industry groups as defined by the United States Census.

(114) Step 10: Estimate the future incidence of mesothelioma of candidates for potential Garlock liability. These are individuals with occupationally caused mesothelioma who, by reason of their job history, could have worked in occupations and industries that include the individuals that worked around Garlock's asbestos-containing products. These occupations and industries include the individuals with an occupational history similar to the historical plaintiffs who tried cases against Garlock. For this purpose, I have been provided with the analysis by the industrial hygienist John Henshaw of the exposure levels to packing, gaskets, and asbestos-containing, high-temperature insulation for each of the 74 occupational groups and 24 industry groups of the PIQ, which Mr. Henshaw sorted into 5 categories, distinguished by the differences in their potential contact with asbestos gasket and packing products. I mapped the Census occupational and industrial groups into the classifications

used by Mr. Henshaw to obtain the incidence in each future year for each of his gasket/packing contact categories. I did the same for all of the claims in the Garlock database with the requisite occupational information. Finally, I used PIQ and claim file review information of more than 5,300 Garlock claimants regarding their contact with Garlock gasket and packing products to estimate the portion of the incidence of each of the five categories with either direct or indirect (bystander/indirect) contact with Garlock gaskets or packing.

(115) Step 11: Estimate the liability from the future relevant mesothelioma incidence estimated in steps 9 and 10 by using the economic model damage recovery lawsuits and the estimates of the model's parameters from prior steps 1 to 7. I then use estimated long-run future inflation of the Congressional Budget Office to estimate the nominal value of the future liability.

(116) Step 12: Estimate the present value of the results of steps 8 and 11 using the estimated long-run risk-free discount rate of the Congressional Budget Office. I then arrive at the total present value of the Garlock Asbestos Liabilities by adding those results.

V.2. Mesothelioma litigation environment

(117) Before presenting my analysis of Garlock's Asbestos Liabilities, let's take a step back to review the broader context of the litigation environment of current mesothelioma lawsuits against Garlock.

(118) For years, asbestos was widely used in the United States in thousands of applications in industry, as well as widely used in building, transportation, and other products. Because of its prevalence over decades of use, the vast majority of individuals in the United States have been in contact with a variety of asbestos-containing products at some point in their lives, particularly those who worked in industrial settings. Correspondingly, an individual who believes they have been harmed by exposure to asbestos-containing products may have hundreds of parties with potential liability for their injuries under plaintiff-liability theories that every exposure to asbestos above background is a significant contributing factor in

causing a plaintiff's injury.[30] The assertions of liability pertain not only to the companies that actually manufactured the asbestos-containing products, but also include companies involved in all stages of the asbestos-containing products chain of commerce, including design specification, distribution, and use of the asbestos-containing products. In some jurisdictions, plaintiffs also assert liability against companies not involved in the asbestos-containing products chain of commerce based on allegations of conspiracy to hide harmful effects of asbestos or allegations that the exposure occurred on the companies' premises.

(119) Today, an individual with mesothelioma seeking compensation for his losses has two distinct sources of redress. The first is comprised of over 50 current and pending trusts established by bankruptcy reorganization to pay asbestos claimants who were exposed to the asbestos products of the reorganized entities.[31] These reorganized entities made and installed the vast majority of asbestos-containing products used in the United States, and their products were responsible for the vast majority of US asbestos exposure.[32] Historically, their predecessor companies covered a significant majority of the compensation paid to asbestos claimants prior to the bankruptcy wave of 2000–2002.[33]

(120) Today, confirmed trusts hold nearly $19 billion in assets to pay claimants, and an additional $11 billion is expected in trusts for seven other companies currently going through bankruptcy reorganization.[34] Appendix VI.2 lists these trusts, their assets (current or estimated) and the asbestos-containing products of the predecessor companies. A typical Garlock mesothelioma plaintiff will assert claims against at least 20 current and identified future trusts, eventually receiving $500K to $600K in total from them.

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30 EPA record of asbestos products compiled from companies in 1980s, 55 Fed. Reg. 5144 (Feb. 13, 1990).

31 *See* Lloyd S. Dixon, Geoffrey McGovern, and Amy Coombe, *Asbestos Bankruptcy Trusts: An Overview of Trust Structure and Activity with Detailed Reports on the Largest Trusts* (Santa Monica: RAND Corporation, 2010), at 25.

32 William P. Shelley, Jacob C. Cohn, and Joseph A. Arnold, "The Need For Transparency Between the Tort System and Section 524(g) Asbestos Trusts," *Norton Journal of Bankruptcy Law and Practice* 17 (2008): 257–95.

33 Ronald L. Motley and Joseph F. Rice, "The Carlough Settlement—Blueprint for a Sane Resolution to the Asbestos Problem," *Mealey's Litigation Report* (July 1, 1993) at 24.

34 Figures for confirmed trusts are based on information gathered from Section 524(g) trust annual reports, supplemented by bankruptcy reorganization documents. Estimated present value of proposed funding is based on bankruptcy disclosures from W.R. Grace, Pittsburgh Corning, North American Refractories, Flintkote, Quigley, Plant Insulation, and AP Green.

(121) The second source of compensation for individuals with mesothelioma is the thousands of financially viable companies that had some association with asbestos-containing products in the past, either from the products they manufactured, sold, or designed, or from their premises that contained them. The typical Garlock mesothelioma plaintiff sues more than 50 of these companies. Plaintiffs file asbestos lawsuits against Garlock in every state.

(122) Not surprisingly, states with larger populations tend to have more claims. However, two states with the most claims stand out: Illinois and Delaware. Together, they account for one third of all Garlock mesothelioma lawsuits in recent years, but they contain less than 5% of the US population.[35] Specifically, Illinois has just over 4% of the nation's population, but it accounts for 25% of filings. Delaware is even more distorted, accounting for only 0.3% of the nation's population but nearly 8% of recent Garlock asbestos lawsuits. A small number of law firms account for most of these mesothelioma filings. In Illinois, just two firms account for almost 60% of recent Illinois mesothelioma filings: the Simmons Browder Gianaris Angelides & Barnerd LLC (Simmons) and Cooney & Conway. In Delaware, three law firms account for more than 65% of recent mesothelioma filings: Bifferato LLC,[36] Simmons and Baron & Budd.

(123) This over-representation of filings in Illinois and Delaware is not unique to Garlock, but is consistent with the general pattern of all mesothelioma lawsuits across the nation—not surprisingly, as Garlock is named in a large majority of the mesothelioma lawsuits across the country. These two states have joint and several liability laws, juries and courts that have awarded large non-economic damages to mesothelioma plaintiffs, and forum rules that encourage non-resident filings. A 2004 article appearing in the *St. Louis Post-Dispatch* noted that a single asbestos filing could result in more than $10,000 in revenue for Madison County's general fund.[37] At the time, plaintiffs had to pay a $186 fee to the court to file a case and each defendant had to pay a $86 fee to answer. Often 50 to 100 defendants, or more, were named on each complaint. That same article went on to note that in 2003, fees on civil litigation in Madison County, with its population of less than 300,000, amounted to

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35 US Census Bureau, Department of Commerce, "State & County Quickfacts," accessed Jan. 21, 2013, http://quickfacts.census.gov/qfd/index.html.

36 I understand that Bifferato LLC is sometimes identified as co-counsel in Delaware with Simmons.

37 Paul Hampel, "Madison County: Where asbestos rules," *St. Louis Post-Dispatch,* Sept. 18, 2004.

nearly $4.2 million, far surpassing the approximately $3.2 million in civil litigation filing fees for nearby St. Louis County, with its population of more than a million.[38]

(124) Across the country, these features of a state's litigation environment are strongly associated with where mesothelioma lawsuits are filed. A disproportionate share of the lawsuits relative to their population go to a small number of states with juries and courts that will award large non-economic damages and have joint and several liability law. In particular, the six states with both joint and several liability laws and a recent history of at least one mesothelioma verdict for more than $7 million since 2000 contain approximately 10% of the US population but almost 40% of the mesothelioma lawsuits.

(125) In contrast, 41 other states and the District of Columbia that have proportional share liability rules or no history of large non-economic damages awards for mesothelioma claims house 70% of the nation's population but have only 40% of the mesothelioma lawsuits. The remaining four states, with about 20% of both the US population and mesothelioma claims, have joint and several liability for economic damages, several liability for non-economic damages, and a history of very large non-economic damage awards (California and New York), or are purely joint and several but have no history of large non-economic damage awards (Connecticut and Washington).

V.3. Estimation steps detail

V.3.1. Step 1: Estimation of potential plaintiff verdicts for Garlock mesothelioma claims

(126) The economic damages recovery model relies on the quantification of potential jury verdicts as a building block to estimating Garlock's Asbestos Liabilities. Plaintiff compensatory verdict awards are directly observed in only a small number of cases each year. To estimate the potential plaintiff verdict compensatory amount for all mesothelioma claims, we draw on a database of all mesothelioma verdicts that we have uncovered over the last decade that

[38] *Id.*

were published in Mealey's asbestos publications, Westlaw, and other public press. This database provides a sample of 631 mesothelioma trial results from 32 states. To supplement this information for the remaining states, I have also compiled a database of a random sample of compensatory awards of 1,250 non-asbestos wrongful death trials as reported in Westlaw. This provides a benchmark for estimating the relative size of potential verdicts in the states without observed mesothelioma verdicts.

(127) I use mesothelioma verdicts from the Bates White database to estimate a standard regression model to predict likely potential compensatory jury awards had each case been tried to verdict and the plaintiff had won. This will serve as a proxy for the amount that the plaintiff and the defendant use in handicapping their risk when deciding whether to settle each case, and as a proxy of their evaluation of the amount of potential liability the defendant faces if the plaintiff takes the case to trial.

(128) In estimating the potential damages awards of each plaintiff, I account for two relevant characteristics of the injured party that affect the size of awards: age of the injured party at diagnosis and the life status of the injured party at the time the lawsuit was filed. Age is important, as it directly affects the size of the plaintiff's estimated damages; older injured parties have actuarially fewer years of lost life. Life status of the claimant at the time a complaint is filed is a characteristic that also significantly affects the size of the average plaintiff award. It serves as a proxy for other unobservable factors that affect damages. In summary, the average mesothelioma plaintiff verdict is 4% lower per year of age of the plaintiff and is about 50% higher if the injured party is still alive at the time the complaint is filed as compared with if he is not.

(129) After statistically controlling for differences in the age and life status of plaintiffs, there remain systematic differences between the sizes of compensatory verdicts that juries in different states have historically awarded plaintiffs when they establish liability. For analytical and expository purposes, I divided the states into three groups by using publicly available data on the mesothelioma jury awards based on the largest compensatory jury award of the 2000s: those with a maximum award of more than $15 million ("High"), those with a maximum award of between $7 million and $15 million ("Medium"), and those with a maximum award of below $7 million ("Low"). This criterion, the maximum compensatory award in the state of the last decade, reveals the potential of each state's tort system to award large non-economic damages to plaintiffs. This component of compensatory damages is the

largest and least objectively quantifiable component of a compensatory award. It is left to a jury or judge to determine its size, though some states provide rules or guidelines to limit non-economic damages.[39] By segmenting the states into these three groups, I have a basis to differentiate the potential size of plaintiff potential awards attributable to how the various states' tort systems differentially treat non-economic damages.

(130) I categorized states without a reported mesothelioma verdict into one of the three groups based on the relative size of their average plaintiff compensatory award from the sample of non-asbestos wrongful death verdicts. I first calculated the average plaintiff verdict for all 51 jurisdictions in the sample. I then calculated the average wrongful death verdict for each of the three groups of states with mesothelioma verdicts. Finally, I put each of the states without mesothelioma group classification into one of the three groups with the closest average wrongful death compensatory award. Exhibit 23 shows the classifications.

Exhibit 23: States by verdict size classification

Group	Mesothelioma plaintiff trials	Non-mesothelioma wrongful death trials
Low	CT, IN, KY, MO, SC, UT, WA, and WI	AK, AR, CO, DC, HI, ID, KS, ME, MS, MT, ND, NE, NH, NV, OK, SD, VT, and WY
Medium	DE, GA, LA, MI, MN, NC, OH, TN, VA, and WV	AZ, IA, OR, RI
High	CA, FL, IL, MD, NJ, NY, PA, and TX	AL, MA, NM

(131) Though the very large compensation awards that I used to segment the states are rare and are routinely reduced by appellate courts or settled at significant discounts from the amount awarded, the differences in the potential jury awards for these state groups shows up in the differences between their typical expected plaintiff awards as well and are much lower.

[39] American Academy of Family Physicians, "Liability and Limits on Damage Awards," Oct. 2005, at 1–5; American Medical Association, "Caps on Damages" (Chicago: American Medical Association, 2011) at 1–8.

Exhibit 24: Average plaintiff verdict awarded by state segment

State segment	Plaintiff awards	% in state group	Average plaintiff verdict
Low	11	4%	$3,351,472
Medium	40	14%	$4,751,089
High	237	82%	$7,260,017
Total	**288**	**100.00%**	**$6,762,270**

(132) The sample of 288 plaintiff verdicts from 465 mesothelioma trials after 2000 are a statistically biased sample and must be adjusted to obtain a reliable estimate of expected jury awards for typical Garlock claimants. In particular, the publicly available records of jury results tend to over represent results from higher than average plaintiff victories of younger than typical mesothelioma plaintiffs.

(133) With the benefit of Garlock's record of asbestos trials, we also know that publicly reported cases are more likely to show a higher ratio of plaintiff verdicts than all those that occurred. The Garlock record shows 83 mesothelioma trials over 20 years of which Garlock won 63, about 75%. The public record only reports outcomes of 30 of these trials, of which Garlock won 18 or 60%.

Exhibit 25: Summary of publicly available information on results of mesothelioma trials since 2000

State Group	Defense	Plaintiff	Both
No mesothelioma plaintiff verdicts	6	0	6
Low	20	11	31
Medium	19	40	59
High	132	237	369
% of verdicts			
No mesothelioma plaintiff verdicts	100%	0%	0%
Low	65%	35%	100%
Medium	32%	68%	100%
High	36%	64%	100%
Average of compensatory award			
No mesothelioma plaintiff verdicts	$0	$0	$0
Low	$0	$3,351,472	$1,189,232
Medium	$0	$4,751,089	$3,221,077
High	$0	$7,260,017	$4,662,938
Average of economic			
No mesothelioma plaintiff verdicts	$0	$0	
Low	$0	$1,018,770	
Medium	$0	$665,865	
High	$0	$1,003,544	
Average of non-economic			
No mesothelioma plaintiff verdicts	$0	$0	
Low	$0	$2,760,278	
Medium	$0	$3,751,167	
High	$0	$5,132,978	
Average of age			
No mesothelioma plaintiff verdicts	67.5		67.5
Low	63.2	56.0	61.4
Medium	69.2	64.4	66.0
High	68.1	65.9	66.4
Verdicts	177	288	465
% of Verdicts	38%	62%	100%
Average compensatory Award	$0	$6,762,270	$4,188,245
Average economic damages		$959,525	
Average non-economic damages		$4,895,955	
Average age	67.7	65.5	66.1

(134) This statistical bias in favor of reporting higher than average plaintiff verdicts is not surprising given the manner in which the publicly available verdict information is collected. It often comes from lawyers reporting their victories to the publications. Plaintiff law firms

are often eager to report large trial successes for marketing and strategic purposes, but many defendants prefer not to have their attorneys report trial results to keep their name out of the press, causing the reporting bias that I observed.

(135) Another clear statistical bias in the reported cases results from the fact that cases that go to trial tend to involve younger than typical plaintiffs with correspondingly higher economic damages and larger non-economic damages on average. Whereas the typical mesothelioma claimant in recent years is 71 years old, the publicly available sample of jury verdicts from the same period of time is on average five years younger. This difference is meaningful. The average publicly available plaintiff verdict for plaintiffs 65 or younger is about $8.2 million, with a median value of $4.5 million. In these same data, plaintiff verdicts for plaintiffs over 75 years old averaged $2.5 million, with a median value of $1.5 million.

(136) To correct for a portion of the reporting bias, I first estimate the impact that jurisdiction, age, and life status have on jury awards by using a standard regression technique to simultaneously account for all of these influential factors on historical mesothelioma jury awards for the 410 jury verdicts from cases that plaintiffs won that went to trial. I then use these estimates to compute the expected typical potential total compensatory award for each Garlock claimant based on the injured party's age, and life status at filing, as well as the plaintiff's jurisdiction. This provides a jurisdiction-, age-, and life-status–adjusted potential jury award that a claimant against Garlock could receive.

(137) In recent years, the typical Garlock mesothelioma plaintiff who was alive at the time his lawsuit was filed is 70 years old and has an expected total compensatory award of $5.4 million. In contrast, the typical mesothelioma lawsuit on behalf of someone who died prior to the time the lawsuit was filed involves a 74 year old and has an expected compensatory award of $3 million. Each of these amounts would be about 60% higher had the plaintiff been 15 years younger.

(138) After accounting for age and life status at filing, there remain differences in the typical potential plaintiff verdict across the states. These differences, however, are not associated with differences in the liability sharing rules. Those rules are about how the liability is to be shared among the responsible parties, not about how much compensation a plaintiff should receive. As discussed above, the differences that remain reflect the size of non-economic

damages awards in different jurisdictions. I will discuss this further after I have covered the estimation of plaintiffs' economic damages.

V.3.2. Step 2: Estimation of plaintiff economic damages for Garlock mesothelioma claims

(139) The next building block of the economic model of Garlock's mesothelioma liability and settlements is the amount of plaintiffs' economic damages. This provides the basis for parsing liability in states that have different liability sharing rules for economic and non-economic damages. Dr. Jeffrey Brown, an economist on my staff with experience in wrongful death damages calculations, created a computer model of economic damages as would be used in trials of individual mesothelioma cases to provide expert testimony on lost earnings, reimbursement of medical costs, and the other components of economic damages routinely used in such cases.[40] The model accounts for the age, occupation, and years of life lost in computing economic damages.

(140) The model was used to estimate the economic damages for Garlock mesothelioma claimants, based on their age at diagnosis, occupation, industry, state, and gender, all of which are typically considered by experts estimating damages in wrongful death litigation. This included more than 3,400 PIQ claimants with sufficient information to estimate their economic damages. The estimates includes damages from lost employment compensation, which, in addition to wages, include the lost value of employee benefits such as paid time off, overtime, health insurance, and retirement accounts. It also includes the economic value of lost household service, Social Security income, medical costs, and funeral costs.

(141) The average estimated economic loss was $800K, at an average age of 70 years old. The estimated damages amounts differ by age, with the amount for claimants older than 80 years averaging $380K, increasing to over $2 million for a plaintiff under 45 years old, a rare occurrence in a population of people with a rare disease that becomes more likely with age.

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[40] Expert Report of Jeffrey F. Brown, PhD, Feb. 15, 2013.

Exhibit 26: Economic loss estimates by plaintiffs' age

Age at diagnosis	Average economic loss	Claims valued
45 and younger	$2,480,000	251
46-55	$1,730,000	1,200
56-65	$1,135,000	3,880
66-75	$650,000	6,284
76-80	$480,000	2,818
Over 80	$380,000	2,177
Average	$800,000	16,610

(142) To assist in the analysis of potential plaintiff verdicts, I used standard regression techniques to further estimate economic damages for Garlock claimants without all of the information required to use the model of economic damages, on the basis of their age at diagnosis, whenever that information was available to me. As age is a very strong correlate with economic damages in the Garlock claiming population, this provides a reliable estimate of average economic damages by claimant age. This provides a basis to estimate non-economic damages and the multiplier they represent over economic damages.

(143) Returning to the analysis of plaintiff awards, the estimates of economic damages when compared with the estimates of potential plaintiff awards reveal that the difference in typical awards among the states is attributable to differences in the amount of non-economic damages that the state court systems typically award. After accounting for age differences, there is little difference between typical economic damages in different states. However, non-economic damages are typically over six times the economic damages for a plaintiff in the states with the highest verdicts and less than four times in the states with the lowest plaintiff verdicts. For claimants alive at the time their lawsuits are filed, this number is typically over seven in the high verdict states and less than five if the injured party is deceased by the time that the lawsuit is filed.

Exhibit 27: Potential verdict award statistics by state group and life status

Mean statistics by type of state		Deceased before filing	Alive at filing	All Plaintiffs
Low states	Potential award	$ 2,088,355	$ 3,319,473	$ 2,714,407
	Economic damages	$ 798,557	$ 808,983	$ 803,859
	Non-economic multiplier	2.7	4.3	3.5
	Age at diagnosis	70.3	68.5	69.4
Medium states	Potential award	$ 3,212,501	$ 5,264,831	$ 4,291,868
	Economic damages	$ 793,154	$ 844,319	$ 820,063
	Non-economic multiplier	4.3	6.5	5.4
	Age at diagnosis	70.1	67.9	69.0
High states	Potential award	$ 3,636,869	$ 5,892,233	$ 4,961,869
	Economic damages	$ 774,460	$ 804,116	$ 791,882
	Non-economic multiplier	4.9	7.6	6.5
	Age at diagnosis	70.7	68.8	69.6
All states	Potential award	$ 3,381,969	$ 5,564,597	$ 4,622,007
	Economic damages	$ 781,012	$ 811,771	$ 798,488
	Non-economic multiplier	4.5	7.2	6.0
	Age at diagnosis	70.5	68.6	69.4

V.3.3. Step 3: Estimation of the plaintiff's recoveries from other tort defendants and asbestos liability trusts

(144) The third building block of the economic model of Garlock's mesothelioma liability is the amounts plaintiffs receive from codefendants and asbestos trusts. These are potential setoffs to any plaintiff award depending on the liability sharing and setoff rules of each jurisdiction.

(145) The court-ordered sample of claimant recoveries was a random sample of 1,000 Garlock PIQ claims. The plaintiffs who were identified in the sample were to provide, as of the date they responded, their total dollar recoveries separately from tort defendants and trusts, and separately provide the number of tort and trust parties from which they received payments. A total of 845 plaintiffs provided all four quantities, and another three plaintiffs provided some of the amounts. A total of 99 plaintiffs in the sample that were required to provide answers to the questionnaire did not provide any of the required four quantities, 51 from the Baron & Budd law firm. 18 other plaintiffs in the sample that provided none of the information were from 16 other law firms that did not comply for any of their clients.

Other non-responsive plaintiffs were represented by law firms that had other plaintiffs in the sample that did comply or were not unresolved mesothelioma claims. The 16 remaining cases were returned from law firms stating that they do not represent those plaintiffs and no other counsel is known.

(146) The sample of 845 plaintiffs that provided all of the required information represents a broad survey of recoveries of the plaintiffs with unresolved Garlock claims. They come from all the jurisdiction groupings discussed previously: those with higher and lower average non-economic damage awards, and from states that have several, joint and several, or hybrid liability sharing rules. There is no material difference in the percentage of non-compliant claimants in the types of jurisdictions. In summary, there are no biases that I detected that would materially affect the conclusion I reach in using the compliant plaintiffs as representative of the general population of unresolved Garlock claimants.

(147) On average, Garlock claimants have received $70K from each of 8 to 9 other tort defendants, for a total of $550K to $600K. This average is the result of a wide range of different amounts plaintiffs have recovered. The typical Garlock claimant has received about $250K (as measured by the median), with a relatively small number of plaintiffs receiving much larger amounts, skewing the average to a much larger number. At the low end, there are 71 claimants who have not recovered any amounts from tort defendants and have only collected from trusts, and another 40% receiving an average of $74K from four defendants. At the other end of the range, only 12% of claimants received more than $1.3 million, with an average of $2.35 million. The highest amount recovered, 2.5 times higher than the next highest amount, is $12.6 million, for a 60 year old man in Hawaii. At least two of the 102 highest amounts are for plaintiffs that took their case to trial and won.

Exhibit 28: Range of typical tort recoveries

Recovery range	Average recovery	Defendants paying	# plaintiffs	% plaintiffs
$0	$ 0	0.0	71	8%
($0,$200K)	$ 74,190	4.3	307	36%
[$200K,$650K)	$ 388,591	8.6	237	28%
[$650K,$1.3M)	$ 896,517	11.7	129	15%
>$1.3M	$ 2,349,725	18.1	104	12%
Total	$ 557,904	7.9	848	100%
Excluding trust only claimants	$ 608,949	8.6	776	92%

(148) The number of defendants paying is an important factor in determining the total amount that plaintiffs recover from their lawsuits. There is some difference in the number of defendants named in their lawsuits, averaging 55 for the sample of plaintiff recoveries, with those that recover more naming 65 defendants on average. However, there are large differences in the number of paying defendants. Those with the largest recoveries receive settlements from nearly a third of the defendants they sued, but those at the lower end of the recovery range only received payments from less than 10% of the defendants they sued.

(149) The factors that affect verdict amounts discussed above have a much attenuated impact on recoveries relative to their effect on verdict size. For example, age of the injured party makes much less difference on the size of plaintiffs' recoveries, with average total recovery declining about 1% per year of age instead of 4% per year of age as observed in verdict amount for plaintiffs. Most of the differences in plaintiffs' recoveries are due to the number of paying defendants, with only a small change attributable to a change in the amount paid by each paying defendant.

Exhibit 29: Effect of life status on defendants' recoveries—excluding trust only claims

Life status at filing	Defendants paying	Amount per paying defendant	Average total recovery	# plaintiffs
Deceased	6.9	$ 58,287	$ 405,094	370
Alive	10.1	$ 72,677	$ 734,039	370
Total	8.5	$ 66,772	$ 569,566	740

(150) The attenuation of the important verdict-size factors is a result of the prominent role that litigation costs play in determining settlements, as shown in the section above outlining the economic relationship between settlements and liability. Liability, as directly derivative of verdict size, is affected by the same factors and in the same proportion as are verdicts. Settlements are primarily determined by the avoidance of litigation costs when the likelihood of liability is small. As liability becomes a more significant concern for the defendant when considering settlement, verdict-size factors will have a larger effect on the size the settlement the defendant pays. Thus, the effect of verdict-size factors on a plaintiff's total recovery is determined by the amount of the plaintiff's recovery paid by defendants with liability concerns in contrast to the amount paid by defendants to simply avoid the cost or further litigation.

(151) Based on my years of working with asbestos personal injury lawsuit settlement data, I would expect that the recovery data provided in the sample of plaintiffs would be nearly complete. In my experience, most settlements are made within a few years of the lawsuit filing. For Garlock in recent years, 85% of settlement amounts were paid within 3 years of filing and 95% were paid within 5 years of filing. The plaintiffs' recovery data was received more than 2 years after the last Garlock claim was filed. Exhibit 30 shows the average total recovery amount for each filing year of the sample plaintiffs.

Exhibit 30: Average tort recoveries for Garlock claims by filing year—excluding trust-only claims

Filing year	Average total recovery	Average defendants paying	Number of plaintiffs
2005 and before	$ 414,000	7.7	147
2006	$ 530,000	11.7	45
2007	$ 585,000	7.8	64
2008	$ 500,000	7.6	138
2009	$ 773,000	9.7	244
2010	$ 668,000	8.2	137
Total	$ 608,000	8.6	775
Total post 2005	$ 654,000	8.9	628

(152) If the recovery amounts were incomplete, I would expect to see a downward trend in the total amount for more recent filings. I find no such trend. The recovery amounts prior to 2006 are much lower, consistent with my expectations that such old claims represent less

valuable claims not only against Garlock, historically having little chance of ever receiving a payment from Garlock because of their age, but also less valuable against other defendants. Limiting the sample to the 628 compliant sample tort plaintiffs with claims filed after 2005 raises the average total recovery to $654K, recovered from an average of 9 defendants with an average settlement of $74K. For those claims in which the injured party was alive at time of filing, the total recovery average is $775K, recovered from an average of 10 defendants with an average settlement of $76K. For those claims in which the injured party was deceased at time of filing, the total recovery average is $434K, recovered from an average of 7 defendants with an average settlement of $60K.

(153) In one respect, the plaintiff's recoveries in the sample may be incomplete in that they were still unresolved against Garlock at the time of its bankruptcy filing for reorganization. Clearly, some are complete, as those claims were filed years ago and never pursued against Garlock. Such claims have zero settlement value against Garlock. About 19% of the sample was for claims filed before 2006, most of which would never have received a settlement payment from Garlock. Also included in the sample are 260 claims that assert no contact with Garlock's asbestos-containing products, 203 of which were filed since 2006, representing more than 30% of the claimants in the sample. These are claimants who filed a PIQ but asserted neither direct nor indirect contact with a Garlock product. These are also claimants that historically would not have been paid by Garlock and for which it has no liability. Note that historically, Garlock dismissed about 40% of claims without payment, many because they failed to identify a Garlock product. Those that asserted direct contact with a Garlock asbestos-containing product have received on average $270K more from other defendants than those that assert only indirect, i.e., bystander or secondary, contact with Garlock's products.

Exhibit 31: Average tort recoveries by contact with Garlock products for claims in PIQ payments sample filed after 2005—excluding trust only claims

Garlock contact	Deceased at filing	Alive at filing	Total
Direct	$535,000	$829,000	$696,000
#	85	103	188
Indirect	$313,000	$663,000	$498,000
#	154	172	326
Total	$392,000	$725,000	$570,000
#	239	275	514

(154) I use the total tort recoveries sample to predict the total recoveries of Garlock claimants not in the sample, for claimants with the requisite claimant information, by using standard regression techniques. This provides the estimated total tort recovery amounts for use in the economic model of liability and settlements outlined above.

(155) The court-ordered sample of plaintiffs' recoveries also provides the amounts collected from trusts and the number of paying trusts. Total trust recoveries are much less varied than tort recoveries. Aside from a few claimants who received much higher amounts, most trust claimants have received on average about $300K from 9 trusts by the time they submitted their recovery amounts. The highest trust recoveries would be either Individually Reviewed or Extraordinary trust claims, being individually valued based on their special claim characteristics. They could also be from plaintiffs who have recovered from the small number of trusts that pay much more than the other trusts on average, *albeit* to a smaller number of qualifying claimants.

Exhibit 32: Range of Trust recoveries

Recovery range	Average recovery	Trusts paying	# plaintiffs	% plaintiffs
$0	$ 0	0.0	50	6%
($0,$200K)	$ 99,312	4.5	318	38%
[$200K,$650K)	$ 356,257	11.5	421	50%
[$650K,$1.3M]	$ 798,437	16.2	56	7%
>$1.3M	$ 2,116,542	15.0	3	0.35%
Total	$ 274,325	8.5	848	100%
Total excluding $0s	$ 291,513	9.1	798	94%

(156) There is little difference in the average total recoveries for claimants with differing verdict-size factors other than the life status of the injured party at the time the lawsuit is filed. That difference is attributable to the difference in the number of paying trusts, with alive claimants receiving payment from two additional trusts on average, as compared to claims filed on behalf of the estate of an injured party deceased when the lawsuit was filed.

Exhibit 33: Range of Trust recoveries—excluding tort only claims

Age at diagnosis	Statistic	Deceased at filing	Alive at filing	Total
65 or less	Recovery	$ 250,064	$ 350,746	$ 307,891
	# trusts	7.1	9.1	8.3
	$ per trust	$ 35,072	$ 38,417	$ 37,185
	plaintiffs	83	112	195
66 to 75	Recovery	$ 241,723	$ 316,537	$ 282,310
	# trusts	7.3	10.2	8.9
	$ per trust	$ 33,068	$ 31,125	$ 31,863
	plaintiffs	113	134	247
76 and more	Recovery	$ 253,609	$ 336,727	$ 287,756
	# trusts	9.1	11.0	9.9
	$ per trust	$ 27,930	$ 30,751	$ 29,214
	plaintiffs	185	129	314
All claimants	Recovery	$ 249,311	$ 333,699	$ 291,171
	# trusts	8.1	10.1	9.1
	$ per trust	$ 30,666	$ 32,942	$ 31,927
	plaintiffs	381	375	756

(157) Current Garlock claimants have, on average, filed claims with 17 trusts, voted in an additional 4 bankruptcy cases, and, as shown above, received payment from 9 trusts. The typical Garlock plaintiff has qualified or will qualify for payments from 21 trusts. Though many of the trusts are currently paying claims, others are in the process and have not yet begun operations. Eventually, the Garlock claimants will receive between $570K to $650K, on average, in total for their trust claims, depending on when their claims were filed and paid by the trusts. Different claimants will receive different average amounts from the trusts; the trust payment amounts change over time as differing numbers of claimants file claims with the trusts each year. On average, Garlock's plaintiffs have received about half of the money that they will eventually receive from trusts.

(158) The estimate of current trust payment amounts is based on identifying either plaintiff disclosures of trust claims or allegations of product exposures that explicitly identify a specific bankrupt or reorganized defendant. I treat trust claim disclosures from the trust claim disclosure data, trust claim discovery data, trust claim authorization data, and/or bankruptcy ballot data as the equivalent to a plaintiff's allegation of exposure to the asbestos-containing products manufactured, distributed, or installed by the reorganized defendant. In addition to trust claims, I considered any allegations of exposure in the exposure data that specifically identifies a defendant that is currently pending bankruptcy or has already established a post-bankruptcy trust as equivalent to future trust claims. Further details on the valuation of trust claims are provide in the appendix to this report.

(159) In total, Garlock plaintiffs will eventually have recovered, on average, more than $1.2 million for their asbestos claim—$560K from tort defendants and about the same amount from trusts. Those alive at filing will receive more, averaging about $1.3 million—about $730K from their tort lawsuit and more than $620K from trusts. Those claims in which the injured party was deceased at the time his lawsuit was filed will eventually receive about $980K—about $400K from their tort lawsuit and another $590K from trusts.

Exhibit 34: Range of total recoveries

Age at diagnosis	Statistic	Deceased at filing	Alive at filing	Total
65 or less	Total Recovery	$1.0 million	$1.6 million	$1.4 million
	Trust Recovery	$600,000	$680,000	$650,000
	Tort Recovery	$440,000	$910,000	$720,000
66 to 75	Total Recovery	$950,000	$1.3 million	$1.1 million
	Trust Recovery	$600,000	$610,000	$600,000
	Tort Recovery	$350,000	$690,000	$540,000
76 and more	Total Recovery	$980,000	$1.2 million	$1.1 million
	Trust Recovery	$570,000	$580,000	$570,000
	Tort Recovery	$410,000	$620,000	$490,000
All claimants	Total Recovery	$980,000	$1.3 million	$1.2 million
	Trust Recovery	$580,000	$620,000	$600,000
	Tort Recovery	$400,000	$730,000	$560,000

V.3.4. Step 4: Estimate defendants' and plaintiffs' litigation costs of taking cases to trial

(160) Though the parties' costs of litigation do not affect a defendant's liability, they play a crucial role in influencing the size of settlements—in fact, the determinant role for the vast majority of Garlock's asbestos cases. As I will use the economic damages recovery model to test the verdict history-derived likelihood of plaintiff success, I need to incorporate these data into that model. Settlements are not used to prove or disprove the validity or amount of any claims.

(161) Importantly, it is not the costs that have already been incurred prior to a case being settled that affect the size of settlements. Rather, it is the future costs that can be avoided that matter. This distinction is crucial. Costs of defendants are structured differently than plaintiffs' costs. Notably, defendants pay costs as they progress through litigation; plaintiffs pay costs at the end of litigation, either at final resolution if taken to trial or at the time of settlement. A defendant pays by the hour for its lawyers, saving all of its future costs if it settles. The plaintiff pays its lawyers a percentage of what he recovers, regardless of whether the case is tried or settled. Specifically, a defendant that pays $250K to settle a case that would cost $500K to try will save $250K, plus the amount of its expected loss at trial. A plaintiff pays the same amount to his lawyers if he settles a case for $250K as he does if he is awarded $250K for a case taken to trial. He pays, for example, 30% ($75K here) to his lawyers either way. The plaintiff only saves costs directly associated with the trial, not the costs of his lawyers. As demonstrated above, this asymmetry in costs means plaintiffs can receive a settlement premium above the trial value of a case, so long as the defendant believes the plaintiff may take the case to trial if it does not settle.

(162) To better understand the costs that can be avoided by settlement, I asked Garlock to provide me with some available bills for cases that had (1) gone to trial and (2) been settled at different stages of litigation. They include the costs they incurred in cases resolved before the plaintiff's deposition was taken, after deposition but before extensive discovery, the costs for cases dismissed, and the costs of cases after some or all of a trial. Exhibit 35 summarizes the bills I reviewed.

Exhibit 35: Defense costs for example cases

Case	Costs	Date	State	Resolution
Moeller	$564,364	Feb-2009	KY	Defense verdict on appeal after verdict
Homa	$527,472	May-2009	NY	Settled for $250K in trial, before verdict
Simpson	$385,000	Aug-2009	NY	Verdict: Garlock found 2% liable - $160K
Higley	$334,718	May-2010	PA	Settled for $25K after Phase 1 trial
Balthazar	$307,380	Jun-2007	MA	Defense verdict
Duncan	$83,206	Jun-2008	SC	Dismissed on eve of trial
Plooy	$80,721	Feb-2008	CA	Dismissed at trial without defense
Smith	$48,043	Mar-2009	CA	Dismissed at trial without defense
Silveria	$100,000	Jan-1998	CA	Verdict: Garlock found 2% liable - $174K
Jones	$3,616	Mar-2010	PA	Settled for $250K after plaintiffs' depositions
Haaz	$1,007	Aug-2009	PA	Settled for $20K after plaintiffs' depositions
Moran	$365	Apr-2009	PA	Settled for $5K prior to any discovery
Kosinski	$247	Oct-2008	PA	Settled for $5K prior to any discovery

(163) Clearly, there are three distinct case profiles from a cost perspective. Cases that are trial candidates have the prospect of costing hundreds of thousands of dollars to resolve if a settlement is not reached. In a second category of cases, it is clear to both parties that Garlock will prevail, but it costs Garlock tens of thousands of dollars to have the cases dismissed. Finally, there are cases where it is obvious to both sides early in the litigation how the case will turn out. Such cases are resolved without significant lawyer costs by Garlock.

(164) The costs avoided by settlement depend on the quality of the case. For cases where the plaintiff can produce enough evidence so that Garlock faces the realistic possibility of an actual trial, the costs that Garlock avoids by settlement are expected trial and appeal costs. For such cases the plaintiff can avoid the costs of experts and other direct trial costs, about $50K, and his emotional costs of trial,[41] by settling instead of taking Garlock to trial. The defendant has expected costs of trials and appeals, likely $500K or more for Garlock, as its scientific defense is expensive, involving several experts and a lot of lawyer time. Moreover, after the bankruptcy wave of 2000–2002, Garlock would have to present the evidence of the

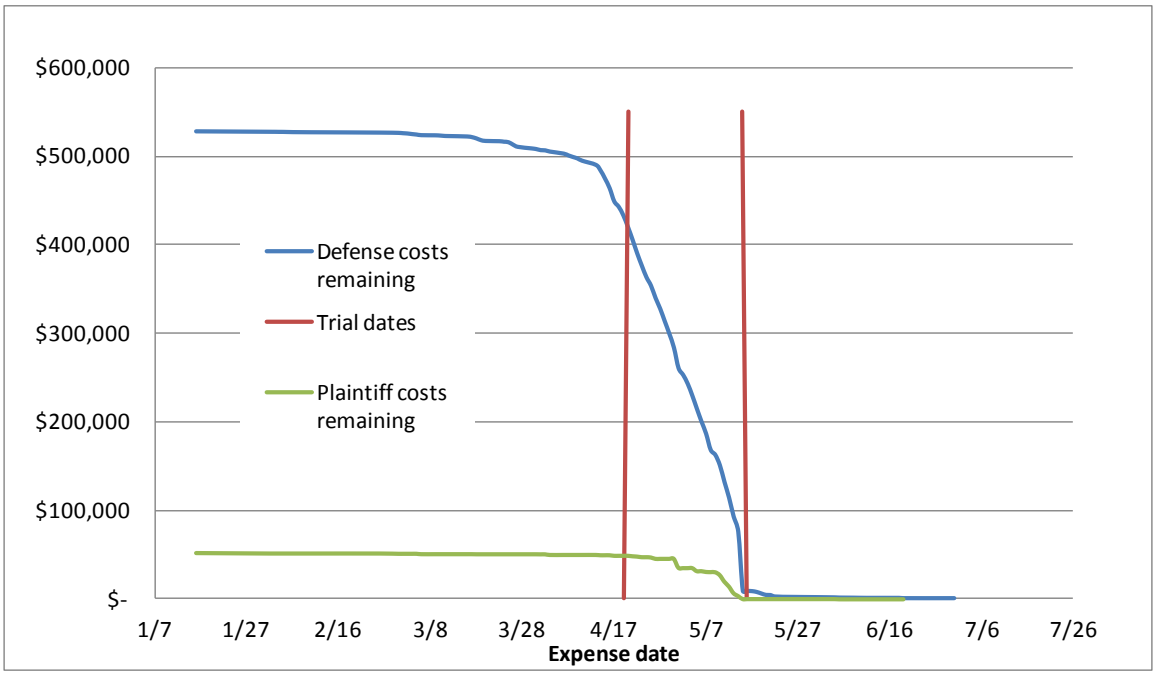
[41] These costs are estimated by using the same method to estimate non-economic damages of personal injury jury awards: economic costs of trial time times a non-economic damages multiplier appropriate for the jurisdiction of the lawsuit—ranging from under 3 to over 7 depending on life status of injured party at filing, age at diagnosis, and jurisdiction.

full range and scope of the plaintiff's asbestos exposures as the plaintiff will focus his case on Garlock as the target of the trial; plaintiffs usually take only one or two defendants to trial, which focuses their case on those defendants. The economic model of liability and settlements shows that when the cost differences to the litigation parties are this asymmetric, settlements as high as $250K are likely on cases where the defendant has no liability, i.e., cases for which the plaintiff has no chance of winning through trial to final judgment after appeals, so long as the defendant presents a competent defense.

(165) The asymmetry of litigation costs for defendants and plaintiffs can be clearly revealed by using the costs for one of the example trial cases from the table above. Included with bills for the Homa case was the daily detail of the expenses, including a separation between lawyer and expert fees. Assume both sides to the litigation have non-lawyer costs as in the Homa case, about $50K. Plaintiff law firm testimony and marketing materials confirm this is the right order of magnitude of the plaintiff's direct trial costs. By adding to the plaintiff's trial costs an estimate of the plaintiff's emotional cost of trial of approximately $20K, this provides a basis to compare the costs that can be avoided for each side at each stage in the litigation by settlement instead of continuing to litigate.

(166) The following chart illustrates the costs remaining to each party on each day leading up to and through the trial, assuming that the case resolves 24 days after the trial starts in mid-April, as it did in the Homa case. The blue line illustrates the costs that remain for each day until the case resolves for Garlock, whereas the green line illustrates the remaining costs to case resolution for the plaintiff. The red vertical lines bracket the dates of the trial.

Exhibit 36: Potential costs avoided by settlement



(167) On January 1, the defendant faces the prospect of a trial in mid-April, over $500K in expenses over the next few months and uncertainty regarding the outcome of a trial if it cannot settle the case. The plaintiff faces the prospect of $50K in expenses for trial costs and sitting through a trial if he does not settle. If the parties could agree on their prospects at trial, they could avoid nearly $600K in prospective costs between them, over 90% of its defense costs. Even with little likelihood of the plaintiff winning, a settlement of more than $250K would have left both parties better off than going through trial.[42]

(168) By mid-April, at the eve of trial, Garlock will have spent nearly $100K, leaving $430K remaining to be spent if the trial commences. By this time the plaintiff has only spent $6K of its costs that were avoidable back in January. His lawyer has invested a lot of his time,

[42] The Homa case eventually settled for $250K at the conclusion of the hearing, prior to the jury reaching a verdict. In order for it to be worth it to proceed to trial instead of accepting a $250K settlement, the plaintiff attorneys acted as though they believed they had a 40% to 50% chance of winning at trial. Accepting the $250K settlement after the evidence was presented suggests they then believed their chances of winning were half that. *Homa v. Garlock Sealing Technologies, LLC*, No. 106152/2008 (N.Y. S.C. Apr. 2009).

but the plaintiff's lawyer time is not a factor in how much the plaintiff pays as the plaintiff's lawyer is paid a percentage of recoveries regardless of his time required. The plaintiff still has more than $65K of avoidable costs at the beginning of the trial comprised of the costs for his experts to appear and his emotional costs for sitting through the trial. Combined avoidable costs were still $500K, over 85% from the defense side; still a lot of room for both parties to benefit instead of continuing to litigate, as was the case by mid-May. By then, Garlock will have spent half of the costs that were avoidable back in January, with $260K in costs remaining to the end of the trial. The plaintiff still has $44K in avoidable costs, leaving a combined total of avoidable costs over $300K, of which over 85% is from the defense side.

(169) For cases with liability, settlements would be above $250K, unless avoided trial costs are substantially lower, as they typically were in the 1990s when Garlock's trial defenses were less costly. During the 1990s, the plaintiff was more likely to have revealed a fuller description of his exposures to high temperature insulation and other asbestos products of the 1990s prominent defendants that were removed from the tort system post-2000 by bankruptcy reorganization. The Silveria case from 1998 illustrates the difference. According to David Glaspy,[43] Garlock's attorney who defended this case, total costs to take the case through trial were about $100K, including lawyer time and experts. Mr. Glaspy had all the exposure information presented by the plaintiff regarding the plaintiff's exposures to high temperature, amphibole asbestos insulation products. His case was straightforward. It was easy to demonstrate the true source of the plaintiff's disease. He did not need experts to try to prove Mr. Silveria's asbestos exposure without him identifying his main sources of asbestos exposure. He did not have to put on a complicated case regarding relative product exposures; the plaintiff provided the proof of the high exposures and dangers of working with high temperature asbestos insulation. The plaintiff made the defense case for Garlock. All that Mr. Glaspy needed was an expert to testify to the small amount of exposure associated with gasket work. The plaintiff otherwise made his case. During this time period in the 1990s, cases without liability settled for $60K or less. Those with liability settled above this amount, far below the threshold for the settlement of cases with liability in the

[43] Interview with David Glaspy, Feb. 1, 2013.

2000s, the difference being the cost of defense between the two decades. Less than 2% of mesothelioma cases settled for more than $60K in the 1990s. Those that did were resolved for an average payment of $135K. The remaining 98% to 99% of mesothelioma cases were resolved for an average of $4,000 each; with no indication of any likelihood that the plaintiffs would prevail if they had taken Garlock to trial.

(170) Post-2000, particularly in the last half of the decade when Garlock began defending more vigorously,[44] the cost of defending a case through trial was at least 4 to 5 times as costly for Garlock as it had been in the 1990s. This vastly drove up settlements. Garlock's mesothelioma settlements indicate that still only 2% of cases represented cases in which the parties to the litigation acted as though Garlock had any liability risk. Such cases were resolved for an average payment of 380K.

(171) Most cases have little prospect of actually going to trial against Garlock. For cases that the plaintiff will not try against Garlock, the costs Garlock avoids by settlement are much lower. This would become apparent to Garlock and the plaintiff at some stage during pre-trial discovery. In such cases, the plaintiff, who still has other defendants to pursue, avoids very little if any of its expected costs if it settles with Garlock. However, if Garlock does not settle it has the prospect of at least tens of thousands of dollars, or much more for some cases, depending on where in the litigation its case is resolved and how much of the trial preparation costs can be avoided by then. As Garlock has no choice but to continue in the litigation until either the plaintiff gives up, accepts a settlement offer, or the case is decided, the plaintiff can extract a substantial settlement of several tens of thousands of dollars from Garlock or any other similarly situated defendant by simply delaying releasing Garlock up to the eve of trial. 37% of Garlock's post-2000 cases resolved for $25K or less at an average resolution value of $10.5K, indicating they were settled to avoid defense costs averaging $15K to $20K. Another 37% were dismissed without payment. This bottom 75% of cases was resolved for the same average amount as Garlock resolved mesothelioma cases in the 1990s. However, as the number of mesothelioma cases brought against Garlock doubled through the bankruptcy wave, Garlock adjusted its defense strategy, paying more on early case discovery so that it could discriminate between cases that were obviously valueless and

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[44] Interview with Rick Magee, Feb. 1, 2013.

those that would take more effort to resolve. In particular, plaintiffs who could not identify a Garlock asbestos product were not paid, whereas those that could were offered settlements averaging $10.5K. In total, the average amount paid to resolve the bottom 75% of cases remained $5K: half of the claimants received nothing and the other half were paid $10.5K for a Garlock release.

(172) An additional 13% of Garlock mesothelioma cases were paid settlements to avoid substantial pretrial costs, but neither party acted as though Garlock had liability on these cases nor that believed the plaintiff would take the case to trial if Garlock did not settle. These are cases that settled for between $25K and $70K, saving Garlock on average $80K in defense costs to get the cases dismissed. The remaining 11% of Garlock mesothelioma cases were resolved by settling between $70K and $250K. These are cases where Garlock saved substantial litigation costs by settling, with the cases at the upper end indicating Garlock believed it would have to defend at trial if it did not settle. Avoided costs for settlements for this group of plaintiffs ranged from $125K to over $400K. On average, Garlock paid such mesothelioma plaintiffs $145K to avoid future defense costs averaging $250K.

(173) Finally, there is another type of case: one where Garlock pays nothing to settle, has potential liability if the plaintiff had pursued it, but the plaintiff does not for his own strategic purposes. Garlock may not even have been named on the complaint on such cases, depending on when the plaintiff decided how to target his case. This occurs because it is in the strategic interest of the plaintiff to focus his case on a small number of parties. Having multiple defendants at trial complicates the plaintiff's case. First, it would be confusing to a jury as it is trying to ascertain which defendants are responsible, each pointing to the others as the actual potential cause of the plaintiff's disease, with each additional defendant in the courtroom lowering the risk to the others of being found liable.

(174) Second, particularly in jurisdictions with at least a several-only component to damage allocation or in jurisdictions that are several only unless the percentage of fault the jury assigns to a defendant is above a legally prescribed threshold (as in 34 of 50 states), it is in the economic interest of the plaintiff to focus his litigation on a small number of potentially

liable parties.[45] This raises the likely liability share a defendant will face if it loses at trial and maximizes the plaintiff's recovery from settlements. This is because a single defendant that believes it will be taken to trial as the sole defendant without the benefit of the plaintiff's own admission of alternative exposures will pay much more to settle the case than the plaintiff can collect in settlements from multiple defendants. With multiple defendants, not only is the defense of each defendant strengthened by a fuller description of the plaintiff's exposure sources, it lowers the potential liability share of each, further decreasing the settlement each is willing to offer.

(175) This issue is particularly acute for current plaintiffs whose cases are pursued under an exposure theory that each asbestos exposure above background is a significant contributing factor to causing the injured parties illness.[46] Modern low exposure defendants present a scientific case demonstrating that their products are safe and that the actual source of the injured party's disease was his exposure to high temperature insulation or other source of significant friable asbestos. The defeat of this defense requires the jury to believe the plaintiff's exposure theory that each asbestos fiber is a significant contributing factor to mesothelioma. The problem for the plaintiff is that if this is believed, then if one such low dose defendant is liable, then so are all companies whose low dose asbestos products the plaintiff encountered throughout his life, which is likely hundreds of products from industrial, commercial, and home settings. Unless the plaintiff focuses his case on one or two defendants, he lowers his odds of winning a finding of liability and lowers the share of liability the jury will assign to a particular defendant should he win.

(176) The recovery data from the sample of Garlock plaintiffs reveals the importance of these strategic considerations in the resolution of mesothelioma cases. The typical mesothelioma plaintiff sues over 50 defendants and recovers settlements from less than 10. Mesothelioma cases that go to trial typically have one or two defendants at verdict.

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[45] *See, e.g.,* Brian D. Chase and Scott D. Raphael, "Multiplying Your Tort Recovery by Eliminating Settlement Off-Sets Under Proposition 51," accessed February 15, 2013, http://www.bestattorney.com/article3.html.

[46] Bishop, Bruce T. and David C. Bowen, The Emerging Trend of Low Dose Exposure Cases, Mealey's Litigation Report: Asbestos, March 17, 2004.

(177) The asymmetry in litigation costs means that defendants will routinely pay more than their liability on large numbers of cases when the cost to defend is high and the likelihood of losing at trial is low. Plaintiff strategic concerns mean that plaintiffs will selectively let some defendants out of their case without settlement to raise the risk to others, thereby increasing their total recovery. Clearly historical settlements are not a precedent of a defendant's liability. Instead, a principled way to identify potentially liable codefendants, consistent with the estimate of liability likelihood, is needed to estimate a defendant's liability. These two components of my liability estimate are the subjects of the next two sections.

V.3.5. Step 5: Estimate the likelihood that the plaintiff would win a liability case against Garlock

(178) I derive estimates of Garlock's liability likelihood from Garlock's historical trial record of 83 mesothelioma lawsuits. These all involve individuals who worked directly with Garlock asbestos containing products or in close proximity to those that did, all in occupational settings. Over a 20-year period Garlock won 63 of its 83 mesothelioma trials. Most trials that Garlock lost were in the 5 years from 2001 to 2005, after the bankruptcy filings of its prominent asbestos products codefendants. During this period, Garlock was adjusting its defense and settlement practices to cope with the new environment where many of its historically prominent codefendants were no longer part of the tort system. In the remaining 15+ years that Garlock tried cases, first in the decade prior to 2001, then again in the 5+ years since 2005, Garlock won 90% of its mesothelioma trials.

Exhibit 37: Garlock mesothelioma trials

Trial years	Defense	Plaintiff	Total	% Plaintiff
1990 to 2000	33	3	36	8%
2001 to 2005	17	15	32	47%
2006 to 2010	13	2	15	13%
All years	63	20	83	24%

(179) The most important change from the 1990s to the early 2000s was the disappearance of the information in at least some mesothelioma cases regarding plaintiffs' actual exposures. As

summarized in its February 8, 2013, memorandum,[47] the law firm of Robinson, Bradshaw & Hinson, P.A. details 10 cases of blatant misrepresentation of plaintiffs' actual asbestos exposures that it uncovered during discovery in these bankruptcy proceedings. In all of these cases, the plaintiffs denied or failed to identify exposures to numerous amosite asbestos products of many of the reorganized former asbestos tort defendants. This clearly was information that similarly situated mesothelioma plaintiffs would have willingly provided just a few years before. The value of the withheld information is also clear. The memorandum documents three additional cases where plaintiffs withheld the information regarding their exposures to the asbestos products of the reorganized entities. However, in these three cases, over the objections of the plaintiffs, the judges in each trial allowed Garlock discovery on the trust claim filings of the plaintiffs. When that information obtained from the trusts revealed that the plaintiffs had filed claims with them claiming exposure to their asbestos products, Garlock received a defense verdict in each case. In two cases of the 10 referenced above that went to verdict, Garlock lost and the plaintiffs were awarded $10 million. The other 8 it settled for nearly $4 million. In the 1990s, when the information regarding plaintiffs' exposures to the high temperature asbestos insulation products was routinely provided in pre-trial discovery, Garlock paid more than $250K on an average of 1 case a year. In the 2000s, when that information was strategically omitted from many cases, Garlock paid more than $250K on average to 30 cases a year.

(180) Garlock's counsel David Glaspy first noticed the change in the pattern of plaintiff's testimony towards withholding some evidence of high temperature insulation beginning in 1999 after Owens Corning, the manufacturer of Kaylo asbestos insulation products, established its National Settlement Program ("NSP") at the end of 1998. Prior to that time, Owens Corning actively litigated cases brought against it, defending itself in dozens of trials each year. At the same time, it aggressively pursued codefendants, creating a book of asbestos product brands that it sent to plaintiffs to help them identify the products of other companies in an attempt to reduce its liability share. With its NSP, it offered to settle all asbestos claims brought against it without litigation. Less than two years and more than $1

[47] Partial Summary of Cases Where Exposure Information Used to Support Trust Claims or Bankruptcy Filings Was Not Disclosed, Robinson, Bradshaw & Hinson, P.A., Feb. 8, 2013.

billion later, OC filed for bankruptcy reorganization.[48] According to David Glaspy, some plaintiffs began downplaying their insulation exposures soon after OC's NSP was announced as plaintiffs no longer targeted OC as they shifted the focus of their trial strategy.

(181) The change after 2005 was two-fold. First, the litigation environment was changing in response to the strategic disappearance of plaintiff exposure information. Some states changed their liability sharing rules from joint-and-several to several only as long as a defendant was not the principal cause of a plaintiff's disease. Other states changed their discovery procedures to require plaintiffs to disclose their trust filings to defendants before trial.[49] These changes began to make it harder for plaintiffs to withhold information regarding their trust filings in some states, requiring plaintiffs to assert exposure to the asbestos products of the reorganized asbestos products companies. Secondly, Garlock changed its settlement practices after 2005 which included paying settlements of over $250,000 to about 15–20 more cases a year. These were the additional cases Garlock determined were risky in the litigation environment without the presence of its former asbestos products codefendants in the courtroom or prominently revealed and discussed in detail by plaintiffs in their depositions and their discovery interrogatories. As a result of these changes, by 2006, Garlock began once again winning nearly 90% of cases that plaintiffs took to trial.

(182) For purposes of my liability estimate, I will use Garlock's mesothelioma trial record as a basis for estimating its liability. This record suggests one of four values for an estimate of the likelihood that Garlock would be found liable if each of its mesothelioma cases were litigated to final resolution. The first is provided by the overall trial record of 20 years. On average, plaintiffs won 24% of the time. I believe this gives an inflated estimate of average likelihood of a liability finding against Garlock if for no other reason than that it includes the record of trials in the 2001–2005 period when the problem regarding the omission of

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48 Owens Corning, Annual Report (Form 10-K) (Mar. 15, 1999), at 27.

49 Ohio Rev. Code § 2307.95. Ohio Gov. John R. Kasich, on Dec. 20, 2012, signed legislation requiring plaintiffs to provide a sworn statement outlining information for claims against asbestos bankruptcy trusts and to produce all related materials; Illinois, California, New York, Pennsylvania, West Virginia and Texas all require pretrial disclosure of trust claims that have been filed; Lloyd S. Dixon and Geoffrey McGovern, *Asbestos Bankruptcy Trusts and Tort Compensation* (Santa Monica: RAND Corporation, 2011), 17–18.

factual information in testimony regarding plaintiffs' exposures to the asbestos products of the reorganizing companies was most acute.

(183) The second liability likelihood candidate is provided by the trial record of the most recent time period, 2006–2010, a period in which plaintiffs won 13% of trials. This period has the virtue of being the most recent record, but trials during this period still may not include full information regarding the plaintiffs' exposures to the asbestos products of the reorganizing companies. By 2006, Garlock had developed trial methods to explain the plaintiffs' alternative asbestos exposures to juries, *albeit* such methods were an imperfect substitute for the plaintiffs admissions of those exposures as were common in the 1990s. This would suggest Garlock's typical liability likelihood should be less than its trial record during this 5-year period. On the other hand, as indicted previously, during this period Garlock paid larger settlements to 15–20 more cases per year than it did in prior years, in recognition of the limits in its ability to provide an accurate picture of the full range of a plaintiff's asbestos exposures when the plaintiff refused to do so himself. This would suggest that the trial record for this period may be too low for at least some of Garlock's cases.

(184) The third would be to use the trial record prior to 2001 as that is the time period when plaintiffs were routinely describing their exposures to many alternative asbestos products of the reorganizing companies that were used in proximity to Garlock's asbestos-containing products. Garlock won 92% of trials before the bankruptcy wave, indicating a plaintiff liability likelihood of 8%. This period has the virtue of representing the trial results of a time period when a more accurate record of the plaintiffs' range of asbestos exposures was presented at trial.

(185) The fourth choice is to use the full 20-year period excluding the period from 2001 to 2005, indicating a plaintiff liability likelihood of 10%. This gives a longer history to draw on eliminating the period of time when the problem regarding the omission of factual information in testimony regarding plaintiffs' exposures to the asbestos products of the reorganizing companies was most acute. Three of these make a relatively small difference in the estimate as compared with the fourth, with the three all giving a liability likelihood of about 10% plus or minus a few percentage points. The fourth gives an amount more than twice as high.

(186) In general, verdict outcomes are not necessarily indicative of typical cases. They are cases where the parties have a more substantial disagreement about likelihood of success or the value of the damages than in cases that settle.[50] Here it is clear that they are not a random sample of cases scientifically designed to provide an unbiased estimate of the liability of Garlock. They are the less than one half of one percent of cases where Garlock and the plaintiffs could not agree on terms to settle. Absent additional information, it would not be obvious simply by the trial record if the over 16,000 cases that Garlock settled had an equal, greater, or lesser likelihood of the plaintiff winning than the cases tried to verdict. To assist in that determination, I have constructed a test using the economic relationship between settlements, liability, and litigation costs and the historical settlement data of Garlock. As the model developed in the previous section of this report illustrates, though settlements are not a direct measure of liability, liability likelihood, in conjunction with other factors, does affect the size of settlements.

(187) My test relies on a comparison between the size of settlements that the economic model predicts would prevail between plaintiffs of different ages within the same legal environment, with the same life status, the same litigation costs, and the same liability likelihood, with comparable actual Garlock settlements. That is, using the estimates I have derived above for potential plaintiff's awards, plaintiff's recoveries, and the litigation costs of the parties, I used the economic model of damage recovery lawsuits to calculate the size of predicted settlements for different aged claimants within the same legal environment for specified liability likelihoods. As the size of potential plaintiffs' awards and recoveries differ by age, so will the settlements, so long as the liability likelihood is not zero. When it is zero, there will be no difference in the size of the settlements, as then the settlements are solely determined by the litigation costs that do not vary by age of plaintiff. The amount of the difference in the size of settlements for plaintiffs of different ages is determined by the liability likelihood. If the liability likelihood was 100%, i.e., if plaintiffs always won if a case went all the way to trial, the difference would be the greatest between plaintiffs of different ages. If instead, the liability likelihood was 1%, then there would be very little difference between settlements of plaintiff of different ages. Liability likelihoods in between would

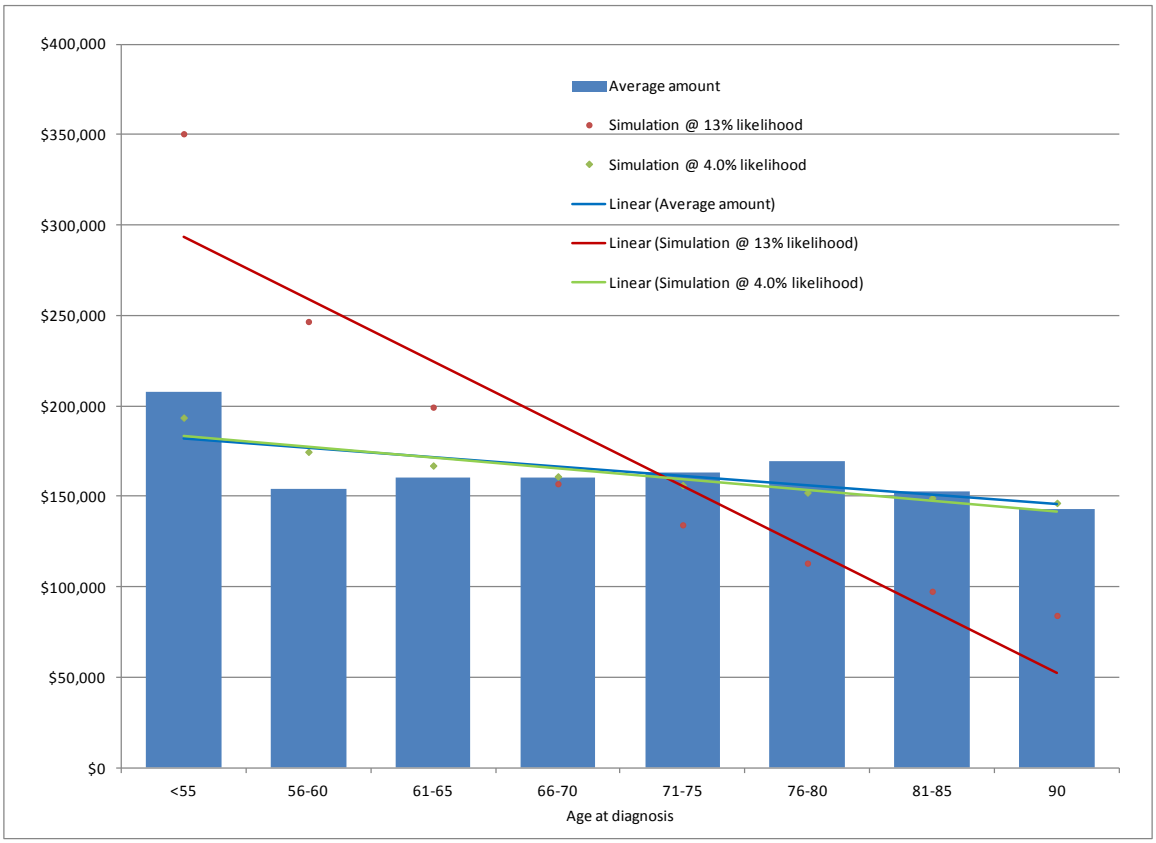
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[50] George L. Priest and Benjamin Klein, "The Selection of Disputes for Litigation," *Journal of Legal Studies* 13, no. 1 (1984): 1–55.

produce various degrees of steepness in the change in settlement amounts across the various plaintiff ages. The test was to compare how much the actual settlement changed between claimants of different ages as compared with the predicted change associated with each of the trial-based liability likelihood candidates discussed above. Of course, there are differences in the actual cases that were settled that affect their potential trial outcomes that are not captured in the data we have available. This is not an unusual circumstance when dealing with data about actual economic events. For this reason, the test is not performed on a case-by-case basis, but rather requires using an average from a large enough group of cases so that the unobserved plaintiff characteristics will mitigate each other to produce a reliable, stable result.

(188) The sizes of Garlock's settlements indicate that even the lowest of the trial-based liability likelihood estimates are too high for the vast majority of Garlock's cases. For cases resolved at a cost consistent with payments made by Garlock to avoid pre-trial discovery—say, cases settled for less than $50K—there is little statistical evidence of any liability likelihood affecting such settlements. For cases resolved for an amount consistent with a Garlock payment to avoid substantial litigation and potential trial costs, cases resolved between $50K and $250K, the settlement average decreases at a rate consistent with a liability likelihood of 4%. Exhibit 38 illustrates the test comparison.

Exhibit 38: Likelihood of plaintiff winning related to settlements between $50K and $250K



(189) The blue bars on the chart show the average settlement for Garlock cases filed and resolved between 2006 and 2010 in the two states with the greatest number of cases resolved in this range, California and New York. Both have a hybrid fault apportionment legal system and both are among the states with the highest potential jury awards. All of the plaintiffs in this sample were alive at the time their case was filed. The slope of the blue trend line illustrates the average difference in the amount received by plaintiffs of different ages, declining on average about $1,000 per year of age.

(190) The red dots provide the predicted average settlement amounts that would occur for typical plaintiffs situated similarly for each age category, assuming the liability likelihood was known to be 13%. The red trend line illustrates the expected average difference in the amount to be received by plaintiffs of different ages consistent with this liability likelihood. As the line shows, if the liability likelihood was 13%, the average settlement for these claimants should decline on average just over $5,000 for every increased year of age. This shows that the

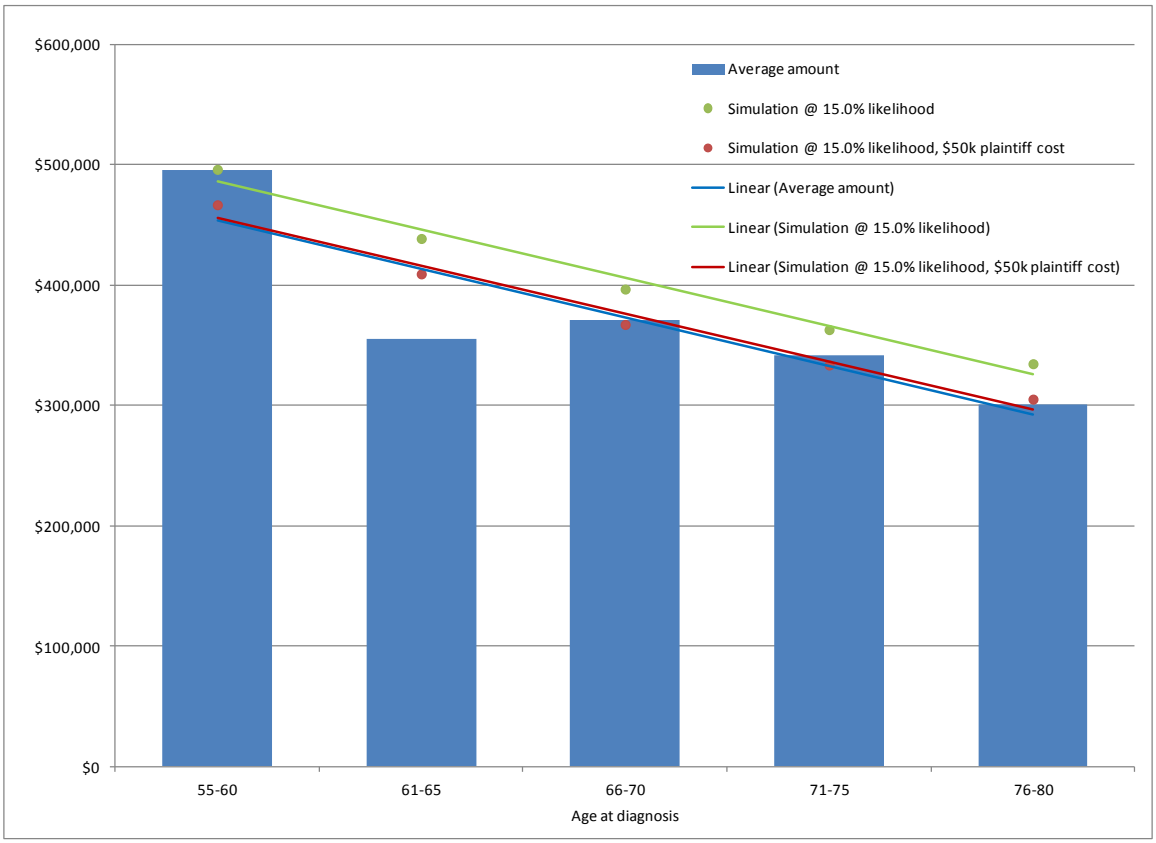
actual liability likelihood must be below that percentage, because the actual settlements vary less by age than what would occur at that liability likelihood.

(191) The green dots provide the predicted average settlement amounts that would occur for these same plaintiffs, assuming instead the liability likelihood was known to be 4%. The green line is the trend line associated with those amounts and lies right on top of the blue trend line of the actual settlement averages. This coincidence reveals that the actual settlements were negotiated between the plaintiffs and Garlock with a common understanding that on average the plaintiffs only had a 4% chance of winning these cases. In summary, the settlements on the 98.5% of Garlock cases resolved since 2000 (those that settled for less than $250K) indicated a liability likelihood average of no more than 4%.

(192) For the remaining 1.5% of cases that were settled for more than $250K, the situation is different. For these cases, Garlock's settlement history indicates that for some of these cases the trial record liability likelihood estimate is too low. Using the same test as described above, the indicated average likelihood of the plaintiffs winning on the 221 cases that were settled for more than $250K is approximately 15%. Exhibit 39 illustrates the comparison between the predicted and actual settlement averages for plaintiffs of different age groups. For this test I have used fewer age groups than in the previous test as there are far fewer settlements on which to base the average settlements for purposes of comparison.

(193) As in the previous test, the height of the blue bars signifies the average settlement for each of the 5 plaintiff age groups. The blue trend line illustrates the declining average settlement amount of approximately $8,100 for every year of age. The green dots signify the predicted average settlement assuming the plaintiffs have an average likelihood of winning at trial of 15% and that Garlock avoided approximately $420K in trial cost by settling each case. Notice that the green trend line of the predicted settlement average decreases at the same rate as the blue trend line of the actual settlement average, but is shifted above the blue trend line, parallel to it. This shift reveals that not only did Garlock avoid its trial costs of $420K, but that the plaintiffs avoided approximately $50K in costs by settling, in some combination of direct costs and implicit emotional costs; the difference is not distinguishable by the settlement data, just the size of these plaintiffs costs combined.

Exhibit 39: Likelihood of plaintiff winning related to settlements higher than $250K



(194) In summary, the comparison between the California and New York settlements, two states with both a higher-than-average plaintiff win ratio and with the largest number of the high value settlements, reveal that the trial record from the 1990s provides the best estimate of the liability likelihood of Garlock. The average likelihood for the test settlements indicates plaintiffs Garlock and the plaintiffs of the 2000s settled cases with a common understanding that Garlock would win more than 95%[51] of the cases it settled, even with the difficulties Garlock had in establishing the actual exposure history of some plaintiffs.

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[51] The cases resolved for more than $250K represented 3.25% of paid cases. At an average liability likelihood of 15% for these cases and a less than 4% average liability likelihood for the other 96.75% of paid cases, the combined average liability likelihood is for the test settlements is less than 15% × 3.25% + 4% × 96.75% = 4.36%.

(195) To estimate Garlock's Asbestos Liabilities, we need to estimate the number of claims which, if tried to conclusion, would have average liability likelihood compatible with the liability likelihood observed in Garlock's trial record. Most importantly, consistent with the trial record, they should be individuals who worked in occupational settings with Garlock asbestos containing products or in proximity to those locations. As discussed more below, each of the unresolved historical plaintiffs asserting a claim against Garlock in the bankruptcy proceeding filed a PIQ detailing their assertions of asbestos contact with Garlock's asbestos containing products. Those who asserted either direct or indirect contact with Garlock's asbestos products in occupational settings will meet the minimum requirement of a candidate for Garlock liability and I will estimate the liability for those claims. Garlock has no liability to the remaining unresolved historical plaintiffs—though individuals may have received a litigation-cost-avoidance payment from Garlock to save it the expense of finding out that Garlock had no liability to such a plaintiff. Beginning in 2004, Garlock stopped paying many of those claims as well, raising its dismissal rate from 3% of mesothelioma claims prior to 2000 to 45% of mesothelioma claim after 2004.

(196) To estimate Garlock's liability for future, unknown mesothelioma claims we will rely on the opinions of the industrial hygiene expert John Henshaw to provide us with a comprehensive list of the occupations that would have used Garlock asbestos products or worked in proximity to those who did in the industries where they were employed. As discussed in more detail below, I have overseen at Bates White the construction of a state-of-the-art epidemiological computer model that provides me with estimates of the incidence of mesothelioma for each of the occupations and industries specified by Mr. Henshaw. This will provide a comprehensive estimate of the future incidence of mesothelioma that may have direct or indirect contact with Garlock asbestos products, whether they ever file a lawsuit or not. I use this method instead of the relying on Garlock's historical claims history to extrapolate into the future based on historical claim flows as it is clear from that record that Garlock has no liability for a large portion claims it received. As discussed above, it is also possible that there are claims for which Garlock had liability, but that were not filed or pursued against Garlock for plaintiffs' strategic reason to enhance recoveries. Reliance on the epidemiological model solves both problems, providing me with an upper bound of the number of mesothelioma cases that may have direct or indirect contact with Garlock

asbestos products; upper bound because it includes individuals that may have direct or indirect contact with all asbestos gasket and packing products, not just Garlock's.

V.3.6. Step 6: Estimate the number of liable codefendants and trusts of typical Garlock claimants

(197) The next step in building to the estimate of Garlock's liability requires estimating the number of other liable parties for each plaintiff's claim against Garlock. As discussed above, this could be hundreds of potential companies, as asbestos was widely used in a variety of settings, particularly high temperature settings where Garlock's asbestos products were used. Below is a sample of the types of asbestos products handled by the individuals in the four occupational groups with the largest number of Garlock claimants who filed a PIQ asserting direct contact with Garlock gaskets or packing, and a sample of asbestos products handled in do-it-yourself home and auto repair work, a common occurrence for many blue collar workers. The list was compiled for me by John Henshaw. Many of these product types have multiple manufacturers, and during a typical career, a practitioner of an occupation will encounter many of those alternative products. Clearly the asbestos exposure of typical Garlock plaintiffs will come from many producers of asbestos products.

Exhibit 40: Garlock occupational groups

Occupational codes	Summary of asbestos-containing materials handled
O-41 Pipefitter	Amosite blankets, block insulation, blue gaskets, cement, Chemtite acid pipe, cloth, drywall, gaskets, gloves, grinding wheels, half-moon insulation, insulation, mud pad insulation, pipe insulation, rope packing, sheets, tile, Transite pipe
O-36 Machinist / machine operator	Automotive gaskets, Bakelite, block insulation, brakes, cement, cloth, electrical materials, firebrick, fireproofing, gaskets, grinding wheels, half-round insulation, insulation, Micarta, mixed insulation, mud, packing, phenolic compound, pipe (Bondstrand), pipe insulation, plastic,Transite board, mixed insulation
O-34 Laborer	Acoustical material, arc shields, Bakelite, blankets, block insulation, brakes, cement, drywall, electrical materials, felt, firebrick, floor tile, gaskets, gloves, gunite, insulation, jacket, joint compound, lagging, mixed insulation, mud, packing, paper, pipe insulation, refractory bricks, refractory furnace spray, roofing, rope packing, sheetrock, siding, tape, tile, Transite pipe
N-12 Machinist's mate	Blankets, cement, firebrick, fireboxes, gaskets, gloves, gray-blue insulation, half-moon insulation, insulation, insulation pads, mixed insulation, packing, pipe insulation, pipe wrapping
O-01 Non-occupational / residential / do-it-yourself (DIY)	Automotive gaskets, brakes, caulk, cement, clutches, dryer felt, drywall, electrical materials, gaskets, glue, grinding wheels, insulation, joint compound, mud insulation, packings, plaster, plasterboard, rags, roofing, spackle, sheetrock, shingles, siding, spark plugs, stucco, tape, taping compound, tile, wallboard

(198) Plaintiffs, however, rarely know all of the hundreds of asbestos products with which they came into contact, much less the names of all the companies that manufactured or installed these products. As a practical matter, juries assign liability to the types of asbestos products that are identifiable as containing asbestos (as when a jury would assign a liability share to "unknown asbestos insulation"), and usually requires the products be identified by manufacturer. For this reason, I will estimate the number of companies whose asbestos products are identifiable as a source of the plaintiff's asbestos exposure by a typical plaintiff who asserts contact with Garlock's asbestos products. These are the codefendants that have the same exposure basis as Garlock if the case were tried to conclusion and Garlock lost, i.e., the plaintiff identifies them as a source of direct or indirect asbestos contact.

(199) Identifying the alternative sources of exposure and corresponding liability shares of codefendants is a two step process. The first step assesses the number of potentially liable codefendants in the tort system, while the second step assesses the number of potential liable asbestos bankruptcy trusts and the corresponding claim payments from them. The ultimate impact these alternative liability shares have on estimates of Garlock's trial risk is determined by the liability sharing laws of each state and the financial viability of each co-defendant or trust.

(200) As explained in detail in the appendix, the process of estimating the number of identifiable asbestos exposures of tort codefendants and trusts uses a variety of data sources, including plaintiffs' PIQs, depositions, interrogatories, and trust claim disclosures. In summary, I estimate that the plaintiffs typically can identify direct and indirect asbestos exposures from 13 to 14 codefendants and 22 trusts comparable for liability assessment purposes to their allegations of exposure to Garlock's asbestos products.

V.3.7. Step 7: Establish the liability sharing rules of each plaintiff's jurisdiction.

(201) Debtors' counsel Robinson, Bradshaw & Hinson, P.A. has provided me a memo summarizing the liability sharing rules and precedents for each of the 50 states and the District of Columbia. The memo describes the laws and precedents for apportioning damages in asbestos cases, with the principal effective difference between the states being that in some states the plaintiff is responsible for bringing all responsible parties into the

litigation and collecting from each its liability share (state with several only liability, otherwise known as proportional liability jurisdictions), whereas other states make that the responsibility of the defendants (joint and several liability jurisdictions.) In the former, the plaintiff assumes the loss of his claim of liability against a bankrupt defendant to the extent it cannot cover its liability, whereas the remaining tort defendants, not the plaintiff, bear that liability in joint and several liability jurisdictions.

(202) Many states have adopted a combination of these two basic legal regimes for apportioning damages. The most common form adopts joint-and-several liability apportionment above a specified fault threshold, usually about 50%, but adopts proportional liability apportionment below that threshold. Notably, California and New York have a hybrid variant, with joint-and-several liability apportionment applied to economic damages, but proportional liability apportionment applied to non-economic damages.

(203) The states have varied rules defining how settlements are offset against verdicts, and whether or not a responsible party needs to be part of the litigation to be assigned a liability share. There are numerous variants of how the states treat these issues. Finally, in joint and several states, liable defendants are entitled to contribution from other responsible parties.

(204) The table below summarizes the current liability apportionment laws of the states and the District of Columbia.

Exhibit 41: Summary of states' codefendant liability sharing laws

State*	Legal	J&S threshold	Fault allocation	Application of Settlement credit	Contribution
AK	Several	100%	all responsible parties	None	No
AL	J&S	none	all responsible parties	All	No
AR	Several	**	lawsuit parties only	None	No
AZ	Several	100%	all responsible parties	None	No
CA	Hybrid	none on economic	all responsible parties	pro rata on economic damages	Partial
CO	Several	100%	lawsuit parties only	None	No
CT	J&S	none	all responsible parties	All	Yes
DC	J&S	none	all responsible parties	All	Yes
DE	J&S	none	all responsible parties	settlements of liable parties	Yes
FL	Several	100%	all responsible parties	None	No
GA	Several	100%	all responsible parties	None	No
HI	J&S	none	all responsible parties	All	Yes
IA	Several	50%	lawsuit and settled parties	None if several	Not if Several
ID	Several	100%	all responsible parties	None	No
IL	J&S	none	all responsible parties	All	Yes
IN	Several	100%	all responsible parties	None	No
KY	Several	100%	lawsuit and settled parties	None	No
LA	Several	100%	lawsuit and settled parties	none	No
MA	J&S	none	all responsible parties	All	Yes
MD	J&S	none	all responsible parties	settlements of liable parties	Yes
ME	J&S	none	all responsible parties	All	Yes
MI	Several	100%	all responsible parties	None	No
MN	J&S	<15% caps allocated share	all responsible parties	Liability share not settlement amount	Yes
MO	Several	51%	all responsible parties	None if several	Not if Several
MS	Several	100%	all responsible parties	None	No
MT	Several	50%	lawsuit parties only	None	Not if Several
NC	J&S	none	all responsible parties	All	Yes
ND	Several	100%	all responsible parties	None	No
NE	Hybrid	None for economic	Ds at verdict only	Liability share not settlement amount	Partial
NH	Several	50%	all responsible parties	None	Not if Several
NJ	Several	60%	P named parties only	None if several	Not if Several
NM	Several	100%	all responsible parties	None	No
NV	J&S	none	all responsible parties	All	Yes

State*	Legal	J&S threshold	Fault allocation	Application of Settlement credit	Contribution
NY	Hybrid	50% on non-economic	all responsible parties	Greater of allocated share and settlements	Partial
OH	Several	50% on economic	all responsible parties	All settlements of liable parties if J&S liable	Not if Several
OK	Several	100%	all responsible parties	None	No
OR	Several	25%	lawsuit parties only	None if several	Not if Several
PA	Several	60%	lawsuit and settled parties	none post 2011 diagnosis	Not if Several
RI	J&S	none	all responsible parties	All	Yes
SC	Several	50%	all responsible parties	Non-settling D pays min(share*verdict,Verdict-settlements)	Not if Several
SD	J&S	none	all responsible parties	All	Yes
TN	Several	100%	all responsible parties	None	No
TX	Several	50%	all responsible parties	Non-settling D pays min(share*verdict,Verdict-settlements)	Not if Several
UT	Several	100%	all responsible parties	None	No
VA	J&S	none	all responsible parties	All	Yes
VT	Several	100%	Lawsuit parties only	None	No
WA	J&S	none	all responsible parties	All	Yes
WI	Several	51%	all responsible parties	None	Not if Several
WV	J&S	none	all responsible parties	All	Yes
WY	Several	100%	all responsible parties	None	No

* Plus the District of Columbia
** Minor adjustments for non-paying codefendants

(205) Though there are numerous variants to how different jurisdictions apply the basic liability apportionment laws, they are effectively identical in the resulting liability assigned to a potentially liable defendant if all responsible parties are part of the litigation, the jury has accurate information regarding the exposures of the plaintiff and defendants can cover their liability share should they be assigned one by the jury. Each system would assign all liable parties the same share. The differences emerge in who bears the costs of establishing accurate exposure information and of prosecuting the litigation against potentially liable codefendants. Moreover, as discussed above, they differ if some defendants cannot cover their liability share. These differences matter in determining settlements because of the high cost of litigation and the role costs play in affecting settlements. However, only the financial viability of the codefendants affects their liability, which is independent of the litigation costs. For this reason, there are only three differences in how the state laws affect Garlock's

liability, determined by how asbestos trust recoveries and liabilities are to be treated. The table below summarizes how I have categorized the states into the three alternatives. For the hybrid model, a proportion of the trust payments are used as an offset against the liability associated with economic damages, but they are assigned a pro-rata liability share of non-economic damages.

Exhibit 42: Estimation treatment of states' liability sharing laws

State*	Tort defendants	Trusts	Model
AK	pro rata share	pro rata share	2
AL	pro rata share	$ offset	3
AR	pro rata share	pro rata share	2
AZ	pro rata share	pro rata share	2
CA	pro rata share	Hybrid model	1
CO	pro rata share	pro rata share	2
CT	pro rata share	$ offset	3
DC	pro rata share	$ offset	3
DE	pro rata share	$ offset	3
FL	pro rata share	pro rata share	2
GA	pro rata share	pro rata share	2
HI	pro rata share	$ offset	3
IA	pro rata share	pro rata share	2
ID	pro rata share	pro rata share	2
IL	pro rata share	$ offset	3
IN	pro rata share	pro rata share	2
KY	pro rata share	pro rata share	2
LA	pro rata share	pro rata share	2
MA	pro rata share	$ offset	3
MD	pro rata share	$ offset	3
ME	pro rata share	$ offset	3
MI	pro rata share	pro rata share	2
MN	pro rata share	$ offset	3
MO	pro rata share	pro rata share	2
MS	pro rata share	pro rata share	2
MT	pro rata share	pro rata share	2
NC	pro rata share	$ offset	3
ND	pro rata share	pro rata share	2
NE	pro rata share	Hybrid model	1
NH	pro rata share	pro rata share	2
NJ	pro rata share	pro rata share	2
NM	pro rata share	pro rata share	2
NV	pro rata share	$ offset	3

State*	Tort Defendants	Trusts	Model
NY	pro rata share	Hybrid model	1
OH	pro rata share	pro rata share	2
OK	pro rata share	pro rata share	2
OR	pro rata share	pro rata share	2
PA	pro rata share	pro rata share	2
RI	pro rata share	$ offset	3
SC	pro rata share	pro rata share	2
SD	pro rata share	$ offset	3
TN	pro rata share	pro rata share	2
TX	pro rata share	pro rata share	2
UT	pro rata share	pro rata share	2
VA	pro rata share	$ offset	3
VT	pro rata share	pro rata share	2
WA	pro rata share	$ offset	3
WI	pro rata share	pro rata share	2
WV	pro rata share	$ offset	3
WY	pro rata share	pro rata share	2

* Plus the District of Columbia

(206) The remaining issue in apportioning Garlock's estimated liability is to decide how much of the liability to assign to each potentially liable codefendant should the plaintiff win. Under Garlock's liability theory, its share is zero as exposure from its asbestos products is too low to raise the disease risk even of those who routinely worked with them. The exposure assessment of John Henshaw reported that even including only a portion of other likely asbestos exposures, the relative contribution to total exposure of insulation was from two orders to five orders of magnitude greater than the contribution of gaskets and packing. The relative contribution of insulation, if potency is considered, is reported to be between 5 and 7 orders of magnitude.[52] This would mean the Garlock's liability in proportional liability states would be miniscule compared with its historical settlements. Below are Mr. Henshaw's exposure estimates (average annual f/cc) of gaskets and packing exposure versus asbestos containing insulation ("ACI") from the activities included in the quantitative assessment for the four largest occupations of PIQ claimants asserting direct contact with Garlock asbestos products.

[52] Report of Dr. Weill at 65–69.

Exhibit 43: Summary of Mr. Henshaw's exposure estimates

Occupation	Gasket exposure estimate	Industrial ACI exposure estimate	Relative ACI exposure ratio
O-41 Pipefitter (G&P Group 1, ACI Group 1)	0.02	5.5	270
O-36 Machinist / machine operator (G&P Group 2, ACI Group 1)	0.008	2.6	322
O-34 Laborer (G&P Group 3, ACI Group 1)	0.0009	1.8	1880
N-12 Machinist's mate (G&P Group 1, ACI Group 1)	0.02	16 (naval/shipyard)	788

(207) In joint and several jurisdictions, Garlock would still be liable for a portion of the uncovered liability of the trusts, requiring estimates of the relative exposure levels of the other tort codefendants. Under the plaintiffs' liability theory, all responsible parties are equally liable as every exposure above background is a significant contributing factor in causing the injured parties disease. This is the theory I will adopt for the purpose of apportioning liability assuming the plaintiff wins. After all, that is the theory that the jury must adopt to find Garlock liable. For this reason, I will assign all potentially liable parties the same liability share.

V.3.8. Step 8: Estimate the liability of the unresolved claims using the economic model of damage recovery lawsuits and the estimates of the model's parameters from prior steps 1 to 7

(208) In step 8, I use the parameters developed in the previous steps to estimate Garlock's Asbestos Liabilities with respect to the unresolved mesothelioma claims filed against Garlock before the petition date. This process consists in identifying which Garlock claimants have an unresolved claim against Garlock and then in estimating Garlock's Asbestos Liability Share based on the claimant's characteristics and exposure history. Through the PIQ process, a large number of the mesothelioma claims that appeared as unresolved in the database maintained by Garrison were identified by plaintiff law firms and by the Debtors as not being unresolved mesothelioma claims either because they had been resolved before the petition date or because the injured party was never diagnosed with mesothelioma in the first place. This information was incorporated into the Garlock Analytical Database, where I can

identify the claimants with an unresolved mesothelioma claim filed against Garlock pre-petition and that will enter in the valuation of unresolved claims.

(209) To value the unresolved claims in the aggregate I use of the available claimant-level information collected mainly through the PIQ process. Using these data, I identify which claimants asserted direct or bystander/secondary contact with Garlock gaskets or packing.

(210) I use the claimant-level data to estimate the statistics described in steps 1 through 7 above for each one of the unresolved claimants that alleged direct or bystander/secondary contact with Garlock gaskets or packing. Based on the statistical analyses explained above and the claimant-level information available in the Garlock Analytical Database, I estimate: the potential damage award; the claimant's economic loss; the claimant's expected tort and trust recoveries and the number of tort and trust parties making those payments; and the number of liable Garlock codefendants and trusts. Further, based on the methods described above and on the jurisdiction in which the claimant filed his claim, I estimate the liability sharing rules that would apply if the claimant won at trial. Finally, I use the estimates of the likelihood that the claimant would win a liability case against Garlock as presented in step 5 above.

(211) With all these estimates, I calculate Garlock's expected liability for each of the claimants with unresolved mesothelioma claims with direct or bystander/secondary contact with Garlock gaskets. I estimate Garlock's expected liability for unresolved mesothelioma claims that did not allege direct or bystander/secondary contact with Garlock gaskets and packing to be zero. This is because, if the plaintiff was not able to assert that he had been in contact with Garlock gaskets directly or at least as a bystander or through secondary contact, his claim would have been dismissed and would have not proceeded to trial.

(212) The valuation process described above is applied to all the unresolved mesothelioma claims with some contact with Garlock gaskets and packing and Garlock's estimated liability risks and settlements are summed to create the Garlock's total liability and Garlock's total corresponding settlements for unresolved mesothelioma claims. Because of the identifiable statistical biases in the estimates of the economic models parameters, the estimates of the unresolved claims' Garlock Asbestos Liability Shares will likely be above their true values.

(213) I find that as of June 5, 2010, the nominal value of Garlock's Asbestos Liabilities for current unresolved mesothelioma claims is less than $25 million.

V.3.9. Step 9: Estimate the future incidence of occupationally-caused mesothelioma

(214) This is the first of two steps in estimating the number of future individuals in each year with potential Garlock liability. This is done using the latest Bates White incidence model (IM) which is an epidemiological model that provides an estimate of the number and age of individuals that will be diagnosed with mesothelioma for each year through 2059.[53] The IM predicts both the number of mesothelioma diagnoses associated with occupational exposure to asbestos and the number of mesothelioma diagnoses unrelated to occupational asbestos exposure (background mesothelioma). The number of future mesothelioma diagnoses associated with occupational asbestos exposure is based on the model's predictions for each of several thousand occupation and industry groups as defined by the Census Bureau.[54]

(215) The IM simulates the aggregate yearly incidence for occupational mesothelioma by industry, occupation, age, and year of diagnosis. The mesothelioma estimates are based on established epidemiological risk equations, estimates of the population occupationally exposed to asbestos, estimates of the degree of exposure for the occupationally exposed population, general population data by age, and historical incidence data.

(216) The IM is a modification of the model proposed by Nicholson, Perkel, and Selikoff (1982,[55] hereinafter Nicholson) and the KPMG incidence model I constructed, with other economists in consultation with Dr. Nicholson, while working at KPMG in the context of the estimation of future asbestos expenditures in the National Gypsum bankruptcy proceedings.[56]

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53 After the year 2059, it is unlikely that there will be any significant occupational asbestos exposure-related incidence of mesothelioma given that the vast majority of the occupationally exposed population will be deceased by then. A detailed description of this model is presented in section VI.3.2.

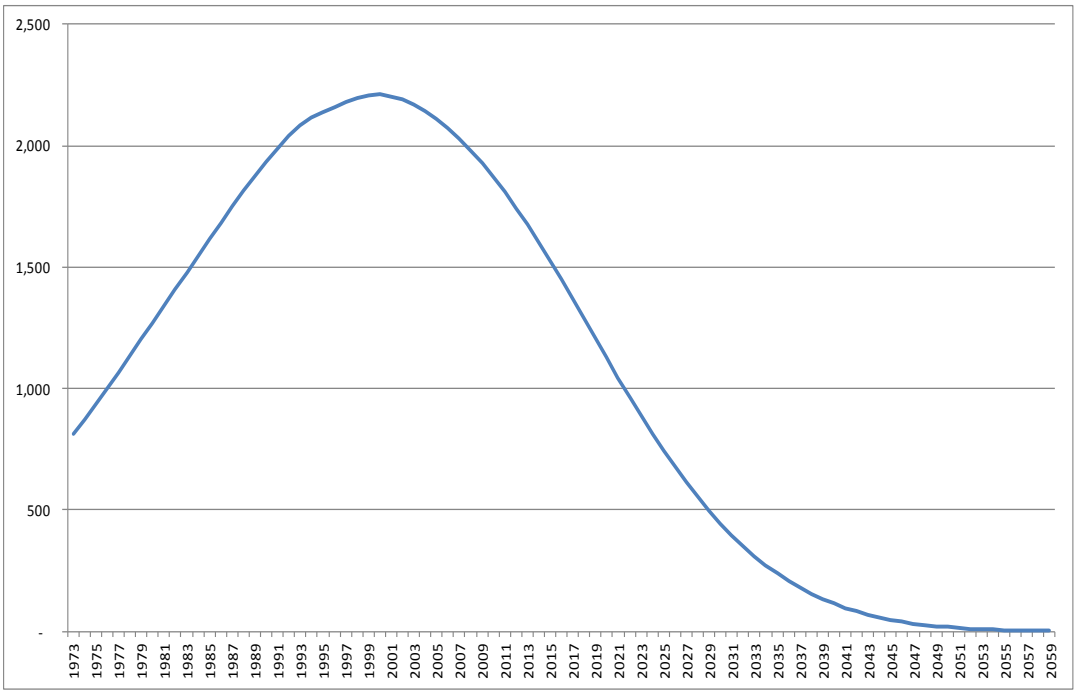
54 The IM uses the 1950 index of occupations and industries defined by the Census. See Census Bureau, US Department of Commerce, "1950 Census of Population Classified Index of Occupations and Industries" (1950).

55 W. J. Nicholson, George Perkel, and Irving J. Selikoff, "Occupational Exposure to Asbestos: Population at Risk and Projected Mortality – 1980-2030," *American Journal of Industrial Medicine* 3 (1982): 259–311.

56 *See* KPMG Peat Marwick Policy Economics Group, *Estimation of Company Liability Personal Injury*, vol. 1. (1992).

(217) The result of the IM provides the incidence of historical as well as future occupationally-exposed mesothelioma by year of diagnosis. Exhibit 44 shows the aggregate occupationally-exposed output of the IM.

Exhibit 44: The occupational incidence of mesothelioma by diagnosis year



(218) As mentioned before, the profile of the occupational exposure mesothelioma incidence is determined by the fact that occupational exposure to asbestos-containing products in the United States effectively stopped in 1972 with the publication of OSHA's exposure limits standards in the workplace regarding asbestos. Therefore, as the population that was occupationally exposed to asbestos ages and dies, the number of mesothelioma diagnoses coming from that population will decline. As Exhibit 44 shows, the IM predicts that by the 2040s decade, there will be a very small number of mesothelioma diagnoses stemming from this population.

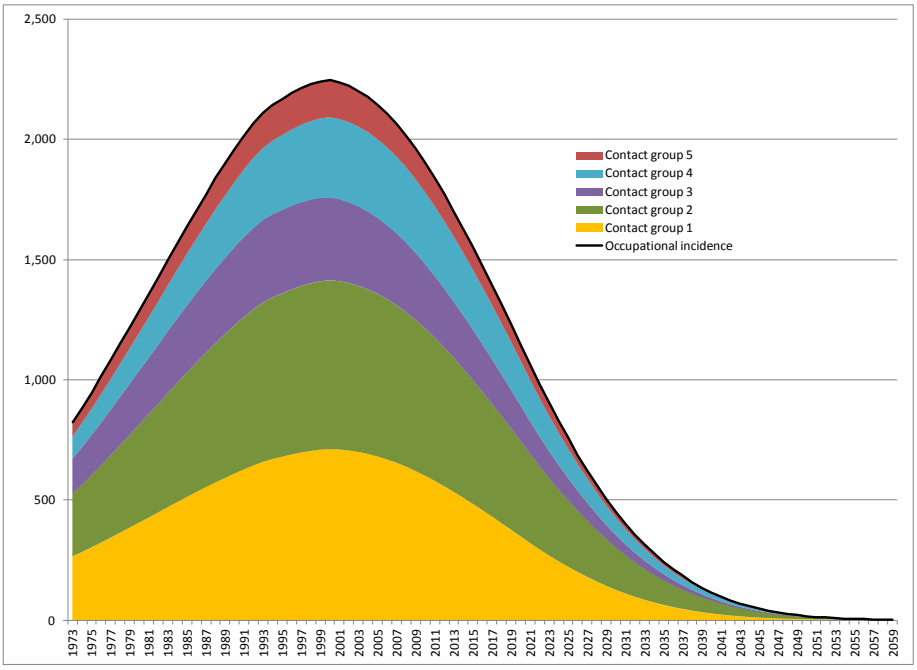
V.3.10. Step 10: Estimate the future incidence of mesothelioma of candidates for potential Garlock liability

(219) This is the second step in estimating the number of future individuals in each year with potential Garlock Asbestos Liabilities. There will be individuals with occupationally-caused mesothelioma who could have worked around Garlock's asbestos-containing products by reason of their job history. These are individuals with an occupational history similar to the historical plaintiffs who tried cases against Garlock.

(220) To estimate the number of future individuals with potential Garlock liability, I use the IM output disaggregated by occupation and industry and Mr. Henshaw's classification of the PIQ occupations and industries into the five contact groups which represent the potential exposure levels to packing, gaskets and asbestos-containing high temperature insulation for each of 74 occupational groups in 24 industry groups.

(221) The first step for this estimate was to map the Census occupational and industrial groups into the classifications used by Mr. Henshaw, to obtain the incidence in each future year for each of the contact groups. This mapping was performed by Bates White staff under my direction and validated by Mr. Henshaw. I use this mapping to parse the total number of future occupationally-exposed mesothelioma diagnoses into each of the five contact groups. Exhibit 45 shows the total occupational exposure incidence estimates and the breakdown of the total estimate into the five contact groups.

Exhibit 45: Incidence of occupational mesothelioma by contact group



(222) The distinction across contact groups is important because, as Exhibit 45 shows, the numbers of mesothelioma diagnoses associated to each of the contact groups in any given year differ significantly, which has a significant effect on the number of candidates for Garlock liability in the future.

(223) In order to estimate the numbers of future potential candidates for having a positive Garlock Asbestos Liability Share in each of the five contact groups, I analyzed the percentages of claimants in the Garlock Analytical Database that alleged some contact with Garlock products for each contact group. Exhibit 46 shows such percentages.

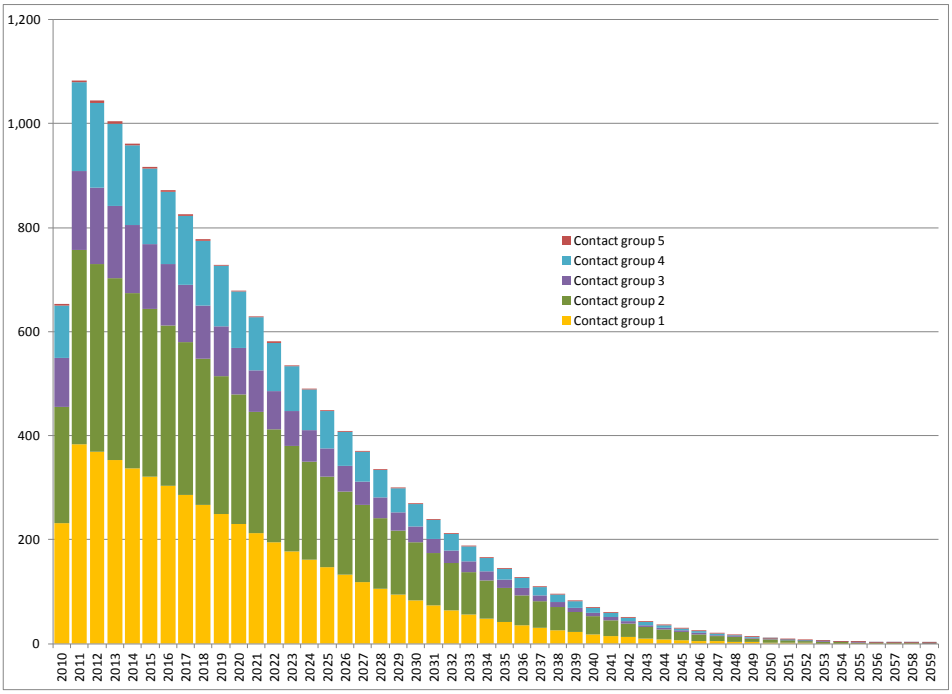
Exhibit 46: Contact group relative use of asbestos-containing gaskets and packing

Contact group	Direct or indirect contact	No contact
Contact group 1	66%	34%
Contact group 2	63%	37%
Contact group 3	59%	41%
Contact group 4	58%	42%
Contact group 5	4%	96%
Total	54%	46%

(224) Therefore, the second step for this estimate was to use the percentages of claimants alleging contact with Garlock products to estimate the fraction of the incidence in each of five

contact groups that could present a history of working directly or indirectly around gaskets and packing. Exhibit 47 shows the number of claimants in each contact group for every year from the second half of 2010 through 2059. These counts of individuals are the numbers of future potential candidates for having a positive Garlock Asbestos Liability Share in each of the five contact groups and represent the number of individuals diagnosed with mesothelioma that are expected to have been in contact with asbestos-containing Garlock gaskets and packing in general. I estimate that there will be about 16,800 potential candidates for Garlock's Asbestos Liabilities from petition date to the year 2059, which is the sum of the number of individuals in each year shown on Exhibit 47.

Exhibit 47: Number of future potential candidates for having a positive Garlock Asbestos Liability Share



(225) Again, because the number of live individuals from the population occupationally exposed to asbestos will continue to decline in future years, the candidates for having Garlock Asbestos Liabilities will sharply decline in the next few years until it approaches zero, once that population dies from asbestos-related diseases or other causes.

V.3.11. Step 11: Estimate the liability from the future relevant mesothelioma incidence estimated in steps 9 and 10 using the economic model damage recovery lawsuits and the estimates of the model's parameters from prior steps 1 to 7

(226) I use the parameters developed in steps 1 through 7 to estimate Garlock's Asbestos Liabilities of future mesothelioma claims that might be brought against Garlock from claimants with the exposure profiles that would make them potential candidates for having some Garlock Asbestos Liability Share. In steps 9 and 10, I identified the number of potential future individuals that could be candidates for having some Garlock Asbestos Liability Share for each year from petition through the year 2059.

(227) To value Garlock's Asbestos Liability among these future candidates, I use the age distributions estimated by the IM for the individuals in each industry and occupation that will be diagnosed with occupational mesothelioma in the future and the historical jurisdiction distribution observed in the Garlock Analytical Database. Using these statistics as inputs, and based on the statistical analyses explained above, I estimate: expected damage awards distributions; expected economic loss distributions; distributions of the expected tort and trust recoveries and the number of tort and trust parties making those payments; and the distribution of the expected number of liable Garlock codefendants and trusts. Further, based on the jurisdiction distribution from the Garlock Analytical Database, I estimate: the expected litigation costs of going to trial and the distribution of liability sharing rules that would apply to future liability candidates if they won at trial. Finally, I use the estimates of the likelihood that the claimant would win a liability case against Garlock as presented in step 5 above.

(228) With all these estimates, I calculate the expected liability for Garlock based on the age and jurisdiction distributions for each year starting from petition date through 2059. To account for the time-value of money, I apply a 2.5% annual inflation rate that compounds each year starting in 2010.

(229) The valuation process described above is applied to all age groups that might exist in the future among the estimated incidence of mesothelioma from which liability candidates might stem. Again, because of the identifiable statistical biases in the estimates of the economic

models parameters, the estimates of the future claims' Garlock Asbestos Liability Shares will likely be above their true values.

(230) I find that as of June 5, 2010, the nominal value of Garlock's Asbestos Liabilities for individuals diagnosed with mesothelioma after the petition date is less than $160 million.

V.3.12. Step 12: Estimate the NPV of Garlock's total liability by adding the results of step 8 to the results of step11

(231) The final step in the estimation of Garlock's Asbestos Liabilities is to calculate the present values of the nominal liability results from steps 8 and 11 above. For this purpose, I used the US Government's long-term forecast of the future risk-free rate of return, as presented in the Congressional Budget Office's ("CBO's") most recent Long-Term Budget Outlook, to discount the future Garlock liabilities back to their present value. Real in this case means net of inflation; the return that can be expected over the long-term on trust fund assets after accounting for the (partially) offsetting impact of inflation on trust fund liabilities or obligations. The CBO's benchmark long-term projected real risk-free rate of return, as reported in its 2012 Long-Term Budget Outlook, is three percent (3.0%).[57] Note that in its 2012 Long-Term Budget Outlook, CBO pairs this three percent real risk-free rate of return with a benchmark inflation rate of 2.5 percent. In combination, these benchmark long-term inflation and risk-free real discount rates imply that the CBO is projecting a nominal long-term risk-free rate of return of approximately 5.5%.

(232) It is worth noting that the CBO believes this is the appropriate rate to use when evaluating the inflation adjusted return on what it considers risk-free securities, primarily the 10-year US Treasury Note. In practice, a trust willing to accept investments in asset classes considered riskier than US Treasury Bills, Notes and Bonds—which effectively means a trust that invests in anything at all besides US Treasuries—should be able to earn a higher real rate of return.

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[57] Congress of the United States Congressional Budget Office, "CBO's 2012 Long-Term Budget Outlook," June, 5, 2012, p. 32. Available online at: http://www.cbo.gov/publication/43288.

(233) The CBO has been using this same three percent real risk-free rate in its forecasts for at least the last four years. CBO also notes that its long-term future projected 3.0% real risk-free rate of return is near the average real rate of return on 10-year US Treasury notes over the last 40-years and that in setting this rate the historical "average interest rate on holdings of the Social Security and Medicare trust funds" was also considered.[58] Correspondingly, this is the same rate that the CBO uses when presenting its long-term forecast of the net-present value of trust assets and liabilities for various government sponsored trust funds, including Medicaid, Medicare, and Social Security. The CBO's 2011 Long-Term Budget Outlook provides a more fulsome explanation of its use of real discounting to calculate a net present value in reference to certain of Medicare fund calculations, saying:

> A present value is a single number that expresses a flow of current and future income or payments in terms of an equivalent lump sum received or paid today. Here, it is calculated over 75 years using a 3 percent real discount rate. That discount rate is equal to the interest rate that trust fund securities are projected to receive in the long term.[59]

(234) I find that as of June 5, 2010, the present value, at a 3.0% real discount rate, of Garlock's Asbestos Liabilities for current Garlock mesothelioma claimants and individuals diagnosed with mesothelioma after the petition date is less than $125 million. Of that total forecast, the Garlock Asbestos Liabilities for current unresolved mesothelioma claims is less than $25 million and the Garlock Asbestos Liabilities for individuals diagnosed with mesothelioma after the petition date is less than $100 million, in present value.

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58 Ibid, p. 32.

59 Congress of the United States Congressional Budget Office, "CBO's 2011 Long-Term Budget Outlook," June, 22, 2011, p. 48. Available online at: http://www.cbo.gov/publication/41486

The CBO's 2012 Long-Term Budget Outlook uses the same three percent (3%) real discount rate figure for this same Medicare related calculation, although it provides slightly less detail regarding the calculations. See page 61 of the 2012 Long-Term Budget Outlook.

V.3.13. The feasibility of the GST Asbestos Trust under the Debtors' Joint Plan of Reorganization

(235) As part of my charge, the Debtors requested that I evaluate the financial feasibility of the GST Asbestos Trust (the "Trust") they proposed for resolving current and future Garlock asbestos-related mesothelioma claims in their Joint Plan of Reorganization.[60] To do so, I analyzed and modeled the Claims Resolution Procedures ("CRP") presented in tab A-2 of the Exhibit Book attached to the Debtors' Joint Plan of Reorganization.[61] In this section, I explain the main features in the CRP and the type of information that is required for estimating settlement offers under such CRP. Then, I present my forecast of the settlements for current and future Garlock mesothelioma claimants.

V.3.13.1. The Claim Resolution Procedures of the GST Asbestos Trust

(236) According to the CRP, a claimant would receive a settlement offer from the Trust if he can provide medical evidence for pleural mesothelioma, the claimant had direct or indirect contact with Garlock's asbestos-containing products, his contact with Garlock's products occurred before January 1, 1978, and the claimant can provide direct product identification.[62]

(237) The CRP contemplate two options for claimants to elect how to resolve their claim: the Settlement Option and the Litigation Option. The Settlement Option also is divided into two review options: Expedited Review and Individual Review. The two Settlement Options would provide settlement offers based on a matrix of allowed amounts and differ in the amount of information the claimant is required to submit to the Trust. The Litigation Option is just that claimants can elect to try their claim in the tort system if they do not accept the Settlement Option offer or do not qualify for such settlement offer under the CRP.

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60 Debtors Joint Plan of Reorganization, *In re Garlock Sealing Technologies LLC*, Nov. 28, 2011.

61 *Id.* at Ex. Tab A-2.

62 *Id.* at 14–17.

V.3.13.1.1. The Expedited Review settlement option

(238) The Expedited Review option provides a settlement offer to the qualifying claimant based on the injured party's demographic and medical characteristics, the occupation and industry in which he alleged contact with Garlock asbestos-containing products, and the duration of time he worked in such occupation and industry. This option has a matrix of maximum allowed settlements for each of the five contact groups defined in the CRP.[63] Exhibit 48 reproduces that matrix.

Exhibit 48: Maximum allowed settlements under Expedited Review

Contact Group	Maximum settlement
Group 1	$200,000
Group 2	$60,000
Group 3	$25,000
Group 4	$12,500
Group 5	$1,000

(239) The claimant applying for Expedited Review would receive an offer of up to the maximum allowed settlement for the primary occupation and industry he identifies. The settlement offer depends on his demographic characteristics and duration at that occupation through a series of factors that multiply the maximum allowed settlement. These characteristics are:

- Whether the injured party has pleural mesothelioma
- The injured party's age at diagnosis or age at death
- Whether the injured party is alive or deceased
- Whether the injured party has a spouse and other dependants
- The economic loss related to the injured party's loss of earnings, pension, social security, home services, medical expenses, and funerary expenses
- The duration in years of the injured party's employment at the occupation and industry provided for contact group classification
- The state in which the claimant filed his claim

63 *Id.* at App. 1, p. I-1.

(240) All of the factors listed above are used to calculate an Injured Party Factors Index (IP Index) that can range from 0% to 100%. This factor is then multiplied by the corresponding maximum allowed settlement to calculate the settlement offer for the claimant under Expedited Review. Therefore, an Expedited Review offer, for a claimant that applied under contact group 1, can range from $0 to $200,000.

V.3.13.1.2. The Individual Review settlement option

(241) The Individual Review requires a significant amount of additional information, though the calculation of an Individual Review settlement offer follows the same principle as that of the Expedited Review. Under this option, qualifying claimants would receive a settlement offer based on the same demographic and medical characteristics as in Expedited Review. However, in addition to that information, the settlement would depend on the injured party's complete job and exposure history, and information regarding the claimant's claim(s) in the tort system. In this case, the maximum allowed settlement offer is $2,500,000. As in the Expedited Review option, the actual offer for the claimant would depend on the product of a series of factors and the maximum allowed settlement offer. In this case, there are three indices that are calculated based on the information provided: the IP Index, the Garlock Contact Index, and the Non-Garlock Contact Index. The IP Index is calculated in the same manner as the IP index in the Expedited Review option with the only distinction that, instead of using only one occupation and industry, all the injured party's occupation and industry spells are used for the calculation.

(242) The Garlock Contact Index is calculated based on the injured party's contact with asbestos-containing Garlock products. This Index has two components: the Contact Group and Length factor, and the Contact Source factor.

(243) The Contact Group and Length factor is based on information regarding each of the injured party's job or contact spells in which he had contact with asbestos-containing Garlock products and the time spent in them, which are classified in one of the five Contact Groups defined by the CRP.[64] Each of the job or exposure spells reported are assigned a Contact

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64 *Id.* at App. 2, p. II-4.

Group factor given in Exhibit 49, which is then multiplied by the duration in that job and then summed across spells.

Exhibit 49: Contact group factors for calculation of the Garlock Contact Index

Contact Group	Contact group factor
Group 1	100.00%
Group 2	30.00%
Group 3	12.50%
Group 4	6.25%
Group 5	0.50%

(244) The Contact Source factor just takes the value of 1.0 if the injured party had direct contact with Garlock products and 0.1 if the injured party had indirect contact with Garlock products. Then, for each spell in which the injured party alleged contact with asbestos-containing Garlock products, a spell-specific Garlock Contact index is calculated by multiplying the Contact Group factor, the spell duration in years, and that spell's Contact Source factor. To calculate the total Garlock Contact index, the contact years with the highest Garlock Contact indices are averaged up to 15 years of spells.

(245) The Non-Garlock Exposure Index is a measure of the risk Garlock faces with respect to other asbestos parties either because of the asbestos exposure the other parties generated or because of the litigation risk the other parties face or faced in the tort system. This Index is calculated as the geometric mean of two indices: the Alternative Exposure Index and the Codefendant and Other Parties' Contribution Index.

(246) The Alternative Exposure Index is calculated based on the injured party's complete job and exposure history, using information about the number and intensity of all sources of asbestos exposure for the injured party. Each exposure spell is classified according to the intensity of exposure to asbestos-containing products the injured party may have received from such activity, and the intensities of the 30 years with the highest exposure intensity are summed. The Alternative Exposure index is then calculated as the inverse of the cumulative intensity.

(247) The Codefendant and Other Parties' Contribution Index is calculated based on the number and financial viability of potentially responsible parties that can contribute to the claimant's compensation. This Index uses information regarding the relevant parties that might have

contributed to the injured party's exposure to asbestos, including the defendants named in the claimant's tort claim, the asbestos trusts to which the claimant has applied or will apply, parties from which the claimant has or will receive compensation but that were not named in the complaint, and asbestos trusts against which the claimant may have a claim according to the injured party's exposure history and identified work sites. Each of the relevant parties identified is assigned some "contribution points" based on the party's asbestos litigation risk and its financial viability.[65] Then, the Codefendant and Other Parties' Contribution Index is calculated as the inverse of the sum of all contributing parties' points (including Garlock's).

(248) Finally, to calculate the claimant's settlement offer under individual review, the Injured Party Index, the Garlock Contact Index, and the Non-Garlock Exposure Index are multiplied by the maximum allowed amount of $2,500,000.

V.3.13.1.3. The feasibility of the GST Asbestos Trust

(249) Based on the rules presented in the CRP, I implemented a computer model to estimate the settlements that current and future mesothelioma claimants would obtain from the Trust. I used the information required by the CRP as available in the Garlock Analytical Database to construct such estimates. In implementing these estimates, I modeled the decision that claimants would face of whether to apply for Expedited Review, Individual Review, or to opt for the Litigation Option. Based on the CRP, the claimant would be able to calculate the settlement amount offer that he would receive from the Trust under Expedited or Individual Review. Also, based on the claimant's and his counsel's expectations about their case against Garlock, they could estimate the expected recovery amount if they tried the case against Garlock. In this way, a claimant can make a decision that would maximize his net recovery from Garlock.

(250) In my calculations I made several simplifying assumptions that on balance overestimate the settlement offers but that were made to facilitate the aggregate estimation of the settlements for all current and future Garlock mesothelioma claimants.

(251) I estimate that the present value of Garlock's asbestos settlements under the Debtors' Joint Plan of Reorganization is less than $220 million, $60 million for current claimants and $160

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[65] *See Id.* at App. 2, p. II-6–II-7 for a detailed explanation of the points allocated to parties in the CRP.

million for future claimants. This amount is inclusive of a premium the Garlock plaintiffs will receive above Garlock's Asbestos Liabilities attributable to the benefit Garlock receives in avoiding additional defense expenses by plaintiffs agreeing to settle with the Trust instead of continuing to litigate their claims. The amount of the premium is sufficient to induce plaintiffs to settle with the Trust. I reach this conclusion based on the precedent of Garlock's historical settlements adjusted to account for the differential exposure information plaintiffs will be required to provide and the differential cost for Garlock to obtain that information.

VI. Appendices

VI.1. Materials considered

(252) Below is a list of materials I considered in reaching my opinions. Should I identify any additional materials that were omitted from this list, I will supplement accordingly.

VI.1.1. Legal: *In re Garlock Sealing Tech. LLC*

VI.1.1.1. Pleadings

- Debtors Joint Plan of Reorganization, Nov. 28, 2011.
- Final Order Authorizing the Retention and Employment of Bates White, LLC As Consultant For The Debtors, July 21, 2010.
- Informational Brief of Garlock Sealing Technologies, June 7, 2010.
- Partial Summary of Cases Where Exposure Information Used to Support Trust Claims or Bankruptcy Filings Was Not Disclosed, Robinson, Bradshaw & Hinson, P.A., Feb. 8, 2013.
- Response of the Official Committee of Asbestos Personal Injury Claimants to the Debtors' Brief Concerning Scope and Purpose of Estimation of Mesothelioma Claims, Mar. 23, 2012.
- Law of Apportioning Damages in Asbestos Cases in Fifty States and District of Columbia, and Under Admiralty Law, Robinson, Bradshaw & Hinson, P.A., Feb. 5, 2013.

VI.1.1.2. Expert reports, depositions, and interviews

- Expert Report of Jorge Gallardo-Garcia, PhD, Feb. 15, 2013.
- Expert Report of David M. Glaspy, Esq., Feb. 6, 2013.
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VI.2. Confirmed and Proposed Asbestos Bankruptcy Trusts

Trust/reorganized defendant	Status	Nominal assets[66]	Asbestos products and/or operations[67]
Armstrong World Industries	Confirmed	$2,279	Sold and/or installed various asbestos-containing products including pipe insulation and coverings, also manufactured spray insulation and pipe covering
DII Industries, LLC	Confirmed	$2,094	Halliburton - Pumps, compressors, and turbines plus construction contracting Harbison-Walker - Firebrick, refractory cement, asbestos cloth
United States Gypsum	Confirmed	$2,008	Thermal spray insulation, block insulation, joint compounds and plaster
Combustion Engineering	Confirmed	$1,025	Design and construction of power-generation facilities, and servicing of large steam boilers and related equipment for electrical power generation
Owens Corning / Fibreboard	Confirmed	$1,637	Pipe covering, block insulation, cement
ASARCO LLC	Confirmed	$992	Fiber Mines/Fiber provider, cement pipe
Manville	Confirmed	$885	Pipe covering, block insulation, cement, roofing shingles, siding, packing, millboard, gaskets
Kaiser Aluminum and Chemical	Confirmed	$844	Insulation block and firebrick as well as building products such as wallboards
Western MacArthur-Western Asbestos	Confirmed	$793	Contracting and distribution of insulation
Federal Mogul[68]	Confirmed	$770	Pipe covering and spray insulation (Limpet), Industrial gaskets, Automotive brake components
G-I Holdings	Confirmed	$746	Construction products, best known for Ruberoid line
Babcock & Wilcox Company	Confirmed	$683	Boilers and industrial power generation systems
Thorpe Insulation Company[69]	Confirmed	$556	Contracting and distribution of insulation

66 2011 annual reports were not available for H.K. Porter, Keene, US Mineral, Rutland Fire, and M.H. Detrick Trusts. In order to estimate the aggregate balances for 2011 we applied the asset and liability flows from 2010 for these specific Trusts;

Includes deferred note payments and insurance settlements that are not included as part of net claimant equity on trust financials but are due in the future. For example, the Federal Mogul U.S. Asbestos Personal Injury Trust, T&N sub-fund has outstanding note payment due totaling $340M that are reported in the notes of the trust annual report financial statements, but are not included in the trust accounting of Net Claimant Equity;

Estimated value of proposed funding based on bankruptcy disclosures from W.R. Grace, Pittsburgh Corning, North American Refractories, Flintkote, Congoleum, Quigley, Plant Insulation, AP Green, and Durabla. There are other pending 524(g) bankruptcy reorganizations currently active but no estimates of proposed trust funding has been disclosed in publically available bankruptcy documents that we were able to find.

67 Bankruptcy reorganization Disclosure Statements and trust web site disclosures.

68 2011 YE balance of $430M, plus the outstanding principle on the Thornwood promissory note totaling $340M as of 12/31/2011 per Note 3 of the 2011 of the trust audited financials.

69 Page 10 of the Court of Appeals opinion by Judge Gould suggests that $600M in insurance had been settled to fund the trust plus an additional $1.75M in funding. To date, the trust has received $198M, so

Trust/reorganized defendant	Status	Nominal assets[66]	Asbestos products and/or operations[67]
Armstrong World Industries	Confirmed	$2,279	Sold and/or installed various asbestos-containing products including pipe insulation and coverings, also manufactured spray insulation and pipe covering
DII Industries, LLC	Confirmed	$2,094	Halliburton - Pumps, compressors, and turbines plus construction contracting Harbison-Walker - Firebrick, refractory cement, asbestos cloth
United States Gypsum	Confirmed	$2,008	Thermal spray insulation, block insulation, joint compounds and plaster
Combustion Engineering	Confirmed	$1,025	Design and construction of power-generation facilities, and servicing of large steam boilers and related equipment for electrical power generation
Owens Corning / Fibreboard	Confirmed	$1,637	Pipe covering, block insulation, cement
ASARCO LLC	Confirmed	$992	Fiber Mines/Fiber provider, cement pipe
Manville	Confirmed	$885	Pipe covering, block insulation, cement, roofing shingles, siding, packing, millboard, gaskets
T H Agriculture & Nutrition, LLC	Confirmed	$524	Fiber distributer
Celotex	Confirmed	$486	Pipe covering, block insulation, cement, millboard
Eagle-Picher Industries	Confirmed	$405	Pipe coverings and insulation cement
National Gypsum	Confirmed	$306	Wallboards, joint compounds, roofing shingles, acoustical products
Congoleum	Confirmed	$275	Flooring
AC&S	Confirmed	$270	Installation and distribution of asbestos-containing thermal and mechanical insulation established in 1958
Burns and Roe	Confirmed	$170	Engineering, construction and related activities for the power generation and other industrial facilities. Approved Trust site list that suggests a non-regional distribution
J.T. Thorpe (California)	Confirmed	$155	Contracting and distribution of insulation
J.T. Thorpe (Texas)	Confirmed	$135	contractor engaged in the sale, installation, maintenance, repair, removal and handling of refractory and acid masonry linings and related products in industrial settings
Motors Liquidation Company (GM)	Confirmed	$120	Automotive brake components
Plibrico	Confirmed	$119	Insulation for industrial use
Leslie Controls, Inc.	Confirmed	$78	Sold valves, regulators, whistles, strainers, and heaters that included internal component parts such as gaskets and packing that contained asbestos
Raytech Corporation	Confirmed	$47	Asbestos cloth, packing, as well as non-industrial automotive brake components manufactured by Raybestos Manhattan
United States Mineral Products	Confirmed	$42	Insulating cement and fireproofing products
H. K. Porter	Confirmed	$40	The pre-1950 locomotive exposures may have been regional to PA, but following acquisitions in the late 1950s of companies like Southern Asbestos and Pacific Asbestos the potential shipyard/ship exposure was not limited to one region
C. E. Thurston & Sons	Confirmed	$37	Insulation sales and contracting operations
ABB Lummus	Confirmed	$30	Feedwater pumps used in industrial settings as well as a design and construction contracting unit, including the design and construction of certain refineries and chemical plants from the 1940's through the 1960's
API, Inc.	Confirmed	$30	Sale, distribution, and installation of insulation construction material

for purposes of this paper we have added the difference of $404M to the 2011 ending balance of $152M to represent the current total of committed trust funding.

Trust/reorganized defendant	Status	Nominal assets[66]	Asbestos products and/or operations[67]
Armstrong World Industries	Confirmed	$2,279	Sold and/or installed various asbestos-containing products including pipe insulation and coverings, also manufactured spray insulation and pipe covering
DII Industries, LLC	Confirmed	$2,094	Halliburton - Pumps, compressors, and turbines plus construction contracting Harbison-Walker - Firebrick, refractory cement, asbestos cloth
United States Gypsum	Confirmed	$2,008	Thermal spray insulation, block insulation, joint compounds and plaster
Combustion Engineering	Confirmed	$1,025	Design and construction of power-generation facilities, and servicing of large steam boilers and related equipment for electrical power generation
Owens Corning / Fibreboard	Confirmed	$1,637	Pipe covering, block insulation, cement
ASARCO LLC	Confirmed	$992	Fiber Mines/Fiber provider, cement pipe
Manville	Confirmed	$885	Pipe covering, block insulation, cement, roofing shingles, siding, packing, millboard, gaskets
ARTRA	Confirmed	$26	Synkoloid product line of wall compounds and sealants in the residential and DIY market
Porter Hayden	Confirmed	$26	Installation contractor
Keene Corporation	Confirmed	$25	Spray insulation and pipe covering (Pyrospray, Monospray)
Swan	Confirmed	$24	Tort claims made by former employees of the Tyler Pipe Foundry in Texas
Durabla Manufacturing Company	Confirmed	$20	Sheet gaskets
Rutland Fire Clay Company	Confirmed	$17	Furnace cements and boiler coverings
UNR	Confirmed	$13	Pipe covering and block insulation (Unibestos product line prior to 1962)
A-Best	Confirmed	$11	Industrial safety clothing containing asbestos
Hercules Chemical Company, Inc.	Confirmed	$8	Furnace cements and putty
Brauer	Confirmed	$6	Distributed pipe covering and tank insulation material
Utex Industries, Inc.	Confirmed	$4	Sheet gaskets
E.J. Bartells	Confirmed	$4	Refractory insulation products and services
M. H. Detrick Company	Confirmed	$3	Insulation
North American Refractories Company	Pending	$6,300	Refractory products
Pittsburgh Corning Corporation	Pending	$3,400	Pipe covering and block insulation (Unibestos product line post-1962)
W.R. Grace & Co.	Pending	$3,000	Spray insulation, cement, plaster (Zonolite and Mono-Kote lines)
Plant Insulation Company	Pending	$500	Contracting and distribution of insulation
Quigley Company, Inc.	Pending	$400	Refractory cement, firebrick felt, and Damit joint sealant
A.P. Green	Pending	$325	Refractory products
Flintkote Company	Pending	$215	Roofing material
Total Nominal Value		**$32,908**	
Total Present Value[70]		**$29,900**	

[70] W.R. Grace, Pittsburgh Corning, and North American Refractories have proposed trust funding that includes deferred cash flows resulting in a nominal value that is significantly higher than an expected present value.

VI.3. Technical appendices

VI.3.1. Asbestos settlement trust and tort shares

VI.3.1.1. Introduction

(253) One of the steps for estimating Garlock's legal liability is to identify alternative sources of exposure and corresponding liability shares that may reduce or otherwise offset Garlock's own liability share. This is a two step process. The first step assesses the liability shares associated with financially viable codefendants in the tort system, while the second step assesses the likely claims against asbestos bankruptcy trusts and the corresponding claim payments. The ultimate impact these alternative liability shares have on estimates of Garlock's trial risk is determined by the liability sharing laws of each state and the financial viability of each co-defendant or trust.

VI.3.1.2. Data used

(254) The data sources relied upon to conduct this analysis include:

1. Exposure data collected from PIQ submissions (including PIQ supplemental case documents), and interrogatories, depositions and other exposure testimony case files reviewed for our resolved case estimation sample.
2. Asbestos bankruptcy trust claim disclosure data collected from PIQ submissions (including PIQ supplemental case documents).
3. Asbestos bankruptcy trust claim data provided by trust claim processing facilities as a result of PIQ trust claim authorizations.
4. Delaware Claim Processing Facility ("DCPF") asbestos bankruptcy trust claim data produced as part of discovery in this case.
5. Asbestos bankruptcy reorganization voting ballot data.
6. Trust payment data submitted by a sample of PIQ claimants as part of a supplemental discovery production. This data provided aggregate counts of trust claims paid and total payments, but did not provide individual trust-level data.

VI.3.1.3. Current tort share estimates

(255) The estimate of current tort shares is based on case specific sources of potential asbestos exposures associated with defendants that are currently litigating cases in the tort system. I identify tort shares based on plaintiff-alleged product exposures that explicitly identify a specific tort defendant in case documents: for example, deposition testimony where the plaintiff recalls occupational exposure to a specific insulation manufacturer.

(256) In order not to double-count exposures for a given claimant, the exposure and product data collected form case documents were linked to a standard set of defendant names, allowing me to eliminate multiple exposure records to the same defendant for a given claimant. For example, if a claimant identified two product exposures in a deposition, one record for alleged product exposure to gaskets manufactured by XYZ Company, and a second record for alleged product exposures to insulation manufactured by XYZ Company, I would only count one Defendant Exposure share for the XYZ Company instead of two.

VI.3.1.4. Current trust share estimates

(257) The estimate of current trust shares is based on identifying either plaintiff disclosures of trust claims or allegations of product exposures that explicitly identify a specific bankrupt or reorganized defendant. I treat trust claim disclosures from the PIQ, DCPF trust claim discovery data, trust claim authorization data, and/or bankruptcy ballot data as the equivalent to a plaintiff's allegation of exposure to the asbestos-containing products manufactured, distributed, or installed by the reorganized defendant. In addition to trust claims, I considered any allegations of exposure in case documents, such as depositions and interrogatories, which specifically identify a defendant that is currently in bankruptcy or has an established trust, as equivalent to future trust claims.

VI.3.1.5. Current trust recovery estimates

(258) Trusts typically provide two processes under which a claim can be qualified and paid. The first process is often referred to as "Expedited Review" and is based on a minimum set of presumptive medical and exposure criteria. Claims that qualify for payment and file under Expedited Review will receive a scheduled amount that is not negotiated. Alternatively, many trusts will offer an "Individual Review" option allowing for claim amounts up to a

published maximum. Factors that determine the actual amount an Individual Review claim receives may include, but are not limited to, age at diagnosis, jurisdiction, and settlement history of the plaintiff's counsel. Typically, the average amount for all claims paid under either Expedited or Individual Review is often represented by a published average, representing the most likely amount for a typical claim ("Average Payment"). Trusts that are unable to pay claimants 100% of the specified claim amount will establish a "Payment Percentage" that uniformly reduces the actual payment by a fixed percentage.

(259) To value trust shares I applied each trust's Average Payment amount for a mesothelioma claim net of any applicable Payment Percentages.[71] For those pending and confirmed trusts that have yet to disclose a net Average Payment I estimated net payment amounts based on the disclosed payment amounts of over forty trusts. I grouped trusts based on assets available to pay claims and then identified the median payment amount from each group. The table below summarizes these groupings. For trusts that do not disclose payment amounts or assets, I applied the lowest median amount from the less than $100M in asset group.

Exhibit 50: Table of average and median payment amounts for trusts by asset size

Asset size	No. of trusts	Average	Median
More than $900M	9	$67,963	$61,600
$500M to $900M	9	$61,294	$26,250
$100M to $500M	10	$22,640	$12,468
Less than $100M	15	$28,415	$5,307
All trusts	**43**	**$42,231**	**$16,650**

VI.3.1.6. Accounting for trust review and valuation options

(260) As stated above, to value trust shares I applied each trust's Average Payment amount for a mesothelioma claim net of any applicable Payment Percentage. However, I also took into account those trust claim disclosures that identified a specific trust review and valuation option (i.e. Expedited Review or Individual Review). For example, the current net Average Payment for the Combustion Engineering trust is $41,800. However, of the 2,890 claims

[71] Trust Average Value or equivalent was used whenever available. If not available, the Scheduled Value or equivalent was used instead.

disclosed, 1,978 (68%) identified a specific review and valuation option. As a result, the 912 Combustion Engineering disclosures that did not specify a review and valuation option were valued at the net Average Payment amount. The 815 cases that elected Expedited Review were valued at $33,000, the published scheduled value for Combustion Engineering net of any applicable Payment Percentage. For the remaining 1,163 cases that elected Individual Review I applied an implied Individual Review average payment of $47,967 based on the election rate of the 1,978 claims that identified a specific review and valuation option.[72]

VI.3.1.7. Accounting for trusts that pay for multiple defendant exposures

(261) While many asbestos bankruptcy trusts compensate claims for a single defendant's obligations, there are a few trusts that compensate claims for exposures to more than one defendant. For example, claims can qualify for payment from the Dresser Industries, Inc ("DII") trust through exposures to Halliburton and/or Harbison-Walker products or operations. The Expedited Review and Average Payments differ, and claimants that can show exposure to both defendants can receive two payments. In some instances, either the PIQ or Exposure Data discloses trust filings or exposure allegations to "Dresser" or "DII" without specifying if the claim is specific to Halliburton, Harbison-Walker, or both. To account for this, I applied the distribution of claims against both defendants from those claimants that made the distinction in either the trust disclosures or alleged exposure data. The following table summarizes the distribution for DII claims.

Exhibit 51: Distribution of DII claims for Halliburton and Harbison-Walker

Disclosure	No. of claims	% of claims
Claims against only Harbison-Walker	603	7.6%
Claims against only Halliburton	1,505	19.0%
Claims against both	5,213	65.7%
Claims against DII	608	7.7%
Total	**7,929**	**100.0%**

(262) For the 608 DII claims that do not specify either one or both Halliburton or Harbison-Walker, I apply an average across the 7,321 claims that did identify one or both Halliburton

[72] Average Individual Review Payment = $\frac{\text{Average Payment} - \text{Expedited Election\%} \times \text{Expedited Payment}}{\text{Individual Election\%}}$.

or Harbison-Walker. In 5,213 of 7,321 cases (71.2%) claimants made two claims or alleged exposures to both Halliburton and Harbison-Walker. The remaining 28.8% of the claims only made one claim or alleged exposures to either Halliburton or Harbison-Walker. As a result, claims against DII yield on average 1.7 Trust Shares. Similarly, the Average Payment is $40,110 for Halliburton, $95,550 for Harbison-Walker, and a combined $135,660 for both. As a result, the Average Payment associated with 1.7 DII claims is $113,000. This situation as described for DII also occasionally occurs for the Owens Corning Fibreboard trust and the Federal Mogul trust.

VI.3.1.8. Trust shares when valuing future claims versus pending claims

(263) In estimating Garlock's future liability, I include in the trust shares estimate all current bankrupt or reorganized defendants with active or proposed trusts. For example, even if a PIQ claimant named and settled with Leslie Controls in the tort system prior to the Leslie Controls filing for bankruptcy reorganization in July 2010, I would still consider this tort settlement as a trust share for purposes of valuing future claims since all future claims against Leslie Controls will be channeled to the bankruptcy trust. On the other hand, when valuing this specific PIQ claim, I would consider this a tort share since the claim against Leslie was resolved in the tort system.

VI.3.1.9. Trust recovery when valuing future claims versus pending claims

(264) When applying trends in the historical data to extrapolate projections of future claims' liability, I value each trust share at the current stated net Average Payment, or current Expedited or Individual Review payment when applicable. When valuing a PIQ claim, I supplement the current valuations with payment information disclosed by the claimants in the supplemental trust recovery data. I received trust recovery data for 845 PIQ claimants. The trust recovery data provided aggregate counts of trust claims paid and total payments, but did not provide individual trust level data. In some instances, the number of paid claims disclosed in the trust recovery data was equal to the number of paid claims disclosed in the PIQ. However, in most cases the number of paid claims disclosed in the trust recovery data and PIQ did not match. The following table summarizes how often the number of paid claims from each data source matched.

Exhibit 52: Comparison of number of paid claims from PIQ and trust recovery data

Comparison	No. of claims
Claims where the total recovery data has more paid claims	568
Claims where the number of paid claims matches	157
Claims where the PIQ has more paid claims	120
Total	**845**

(265) Taking the most frequent scenario for example, assume a PIQ discloses the filing of 15 claims against trusts that are actively processing and paying claims, 10 of which have already been paid. In addition, bankruptcy ballot data discloses potential future claims against 3 trusts pending bankruptcy confirmation.

Exhibit 53: Example summary of trust filing valuations

Trust claims	No. of trusts	Total valuation	Average valuation
Paid active trusts	10	$300,000	$30,000
Unpaid active trusts	5	$125,000	$25,000
Pending inactive trusts	3	$120,000	$40,000
All trusts disclosed	**18**	**$545,000**	**$30,300**

(266) Now assume that the trust recovery data for this particular claimant discloses that a total of 12 trust claims have been paid for a total of $400,000. The trust recovery data provided aggregate counts of trust claims paid and total payments, but did not provide individual trust level data. Because I cannot know for certain which 12 of the 15 active trust filings disclosed in the PIQ have been paid, in order to account for this difference in paid trust claims, I apply the following process:

1. I assume that 12 of the 15 active trusts disclosed in the PIQ were paid the $400,000 from the trust recovery data
2. I assume that the remaining 3 of 5 unpaid active trust claims disclosed in the PIQ will be paid the average valuation estimated across all 5 unpaid active trusts ($25,000)
3. I then add the total valuation for the pending inactive trusts

The table below summarizes the adjustments.

Exhibit 54: Example summary of trust valuations adjusted for trust recovery data

Trust claims	No. of trusts	Total valuation	Average valuation
Paid active trusts	12	$400,000	$33,300
Unpaid active trusts	3	$75,000	$25,000
Pending inactive trusts	3	$120,000	$40,000
All trusts disclosed	**18**	**$595,000**	**$30,300**

VI.3.2. The Bates White Incidence Model

VI.3.2.1. Introduction

(267) The Bates White Incidence Model (IM) forecasts the incidence of mesothelioma broken down into: (1) mesothelioma diagnoses resulting from occupational asbestos exposure, and (2) background mesothelioma, which are the mesothelioma diagnoses that occur in the absence of occupational asbestos exposure. The IM estimates the mesothelioma incidence from 1939 through 2059. The model simulates the aggregate yearly incidence for occupational mesothelioma by industry, occupation, age, and year of diagnosis. The mesothelioma estimates are based on established epidemiological risk equations, estimates of the population occupationally exposed to asbestos, estimates of the degree of exposure for the occupationally exposed population, general population data by age, and historical incidence data.

(268) The IM is a modification of the model proposed by Nicholson, Perkel, and Selikoff (1982, [73] hereinafter Nicholson). In 1991-2, while working at KPMG, I along with other KPMG economists, I implemented several improvements to the Nicholson model in the context of the estimation of future asbestos expenditures in the National Gypsum bankruptcy proceedings.[74] The product of that work came to be known as the KPMG model. Further, while at Bates White, I have led a research team for the last 13 years to explore modifications to the Nicholson and KPMG models that have resulted in substantial improvements on the

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[73] W. J. Nicholson, George Perkel, and Irving J. Selikoff, "Occupational Exposure to Asbestos: Population at Risk and Projected Mortality – 1980-2030," *American Journal of Industrial Medicine* 3 (1982): 259–311.

[74] *See* KPMG Peat Marwick Policy Economics Group, *Estimation of Company Liability Personal Injury*, vol. 1. (1992).

forecast of mesothelioma incidence. These improvements are listed and explained in the following section.

VI.3.2.2. Bates White's improvements to the Nicholson and KPMG models

(269) The improvements I made to the Nicholson and KPMG incidence models, explained in detail below, include:

- Better estimates of the alive occupationally exposed population, the use of better mortality rates data, and the use of person-years for the estimation
- The use of job exposure matrices (JEMs) to model the level of asbestos exposure in more detail
- The incorporation of background mesothelioma in the estimates
- A calibration of the model based both on occupational and background mesothelioma

VI.3.2.2.1. Estimates of the alive occupationally exposed population, the use of better mortality rates data, and the use of person-years

(270) Improvements to the measurement of the alive occupationally exposed population are centered in using the Census of Population and Housing data (Census data) as the primary data source, then supplemented by the BLS Establishment data (BLS data). The Census data provide much larger samples than do the BLS data. The Census data also capture individuals paid "off the books" because it is a survey of individuals and not a duplication of payroll records, as is the BLS data. The change to the Census data allows the use of occupation-specific single-year age distributions. Because the Census data are available at ten-year intervals, the IM uses the BLS data to trend over the decades between the Census data waves.

(271) With respect to mortality rates, the earlier models assumed that mortality is constant across all occupations. The IM takes into account the mortality rate of blue-collar workers, who have a higher tendency of being employed in industries and occupations that are more prone to asbestos exposure.

(272) The fundamental equation used to forecast mortality has been refined since Nicholson's research. The IM uses person-years by recognizing the linearity of the mesothelioma incidence equation. This functional form means that the aggregate incidence of mesothelioma resulting from X individuals being exposed for Y years is the same as the aggregate incidence of 2X individuals being exposed for 0.5Y years. In other words, the aggregate incidence of mesothelioma among the total alive population who has ever been occupationally exposed to asbestos across all years is the same as the aggregate incidence of mesothelioma of all alive person years of occupational exposure. In practical terms, there is no need to include duration of exposure (e.g., duration of employment) in the incidence calculation.

VI.3.2.2.2. The use of job exposure matrices (JEMs)

(273) Another improvement of the IM model over the previous models is a more precise measurement of intensity of exposure by moving from the Nicholson/KPMG industry approach to a Job Exposure Matrix (JEM)-based approach. An industry-based approach frequently omits subgroups of individuals. Nicholson only included 12 occupation/industry groups, which did not include large sectors of the individuals that were occupationally exposed.

(274) In contrast, a JEM categorizes the probability and/or the intensity of exposure in a table where multiple occupation/industry combinations can be considered individually. The JEM approach is now considered an appropriate and standard framework for linking exposure with industry and occupation in the study of epidemiology.[75]

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[75] Pierluigi Cocco, and Mustafa Dosemeci, "Peritoneal Cancer and Occupational Exposure to Asbestos: Results From the Application of a Job-Exposure Matrix," *American Journal of Industrial Medicine* 35 (1999): 9–14;

Carol Rice, and Ellen F. Heineman, "An Asbestos Job Exposure Matrix to Characterize Fiber Type, Length, and Relative Exposure Intensity," *Applied Occupational and Environmental Hygiene* 18 (2003): 506–512;

Alex Burdorf¬ and Paul Swuste, "An Expert System for the Evaluation of Historical Asbestos Exposure as Diagnostic Criterion in Asbestos-related Diseases," *Annals of Occupational Hygiene* 43, no. 1 (1999): 57–66;

Carla Ciconi, et al., "Occupational Asbestos Exposure and Mesothelioma Risk in Los Angeles County: Application of an Occupational Hazard Survey Job-Exposure Matrix," *American Journal of Industrial Medicine* 20 (1991): 371–379.

(275) The Bates White JEM has 40,328 industry-occupation cells. Many of these cells share a common risk level, where risk is a function of the probability of asbestos exposure and the intensity of exposure over time. For some occupation and industry combinations, the risk level is zero.

VI.3.2.2.3. The incorporation of background mesothelioma to the estimates

(276) The IM incorporates the estimation of the portion of total mesothelioma diagnoses that are unrelated to occupational exposure. Background mesothelioma forecasts were not provided in Nicholson or KPMG. The background mesothelioma forecasts are based on a two-stage clonal expansion model.[76] The model specification uses as input the population estimates by age. The implementation of this modeling is explained in more detail below.

VI.3.2.2.4. The calibration of the IM model

(277) Finally, the IM improves over the Nicholson and KPMG models through a better calibration procedures made possible by better data. The IM calibrates the national counts of mesothelioma forecasts by year of diagnosis using the SEER 9 data through 2009, which were not available to Nicholson or KPMG.

VI.3.2.3. The Model

(278) In forecasting the occupational mesothelioma, the IM uses conventional microsimulation techniques. The calculation of the model is the number of workers exposed to asbestos at any point over their career. These workers are the alive occupationally exposed population and their aggregate accumulated total exposure is the number of alive occupationally exposed person years. Each year between 1929 and 1979 defines a worker cohort. A fraction of each cohort works in occupations and industries that cause various levels of asbestos exposure, and a fraction of cohorts in each one of these occupations and industries develops asbestos-related mesothelioma according to epidemiological relationships between exposure and disease. The IM forecasts the background mesothelioma by using a two-stage clonal expansion model that takes as input age-specific general population data.

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[76] Suresh H. Moolgavkar, Rafael Meza, and Jay Turim, "Pleural and Peritoneal Mesotheliomas in SEER: Age Effects and Temporal Trends, 1973–2005," Cancer Causes Control 20 (2009): 935–944.

(279) The IM predicts the annual number of new mesothelioma cases every year. The estimates of the IM peak in the early 2000s at 3,141 cases; about 70% of such cases constitute occupational-related mesothelioma and the rest constitute the background-related mesothelioma. The number of total mesothelioma cases then declines as the decline in the number of occupational incidence is higher than the increase in the number of background incidence.

(280) The next sections describe the main inputs to the IM and how the estimation is performed.

VI.3.2.3.1. Population

(281) The IM calculates the aggregate yearly incidence of excess disease by industry-occupation pair, gender and age. Estimates of all living individuals who have been occupationally exposed to asbestos and epidemiological information on the relationship between exposure and future malignancies are central to the forecasts. Individuals enter the model at age 15 and move in and out of jobs with varying potential for exposure. Over time, the individual accumulates exposure and possibly develops an asbestos-related malignancy.

(282) A cohort consists of all new entrants to the labor force in any given year. The model tracks all cohorts that enter the labor force between 1929 and 1979; these are the years of potential exposure.

(283) The IM uses a population input file that is classified by risk group and cohort. This file is constructed with population data by age and calendar years. The basic data source for this file is the decennial United State Census and Housing from 1920 through 2000.[77] The file contains the number of individuals in the labor force in each 3-digit industry and occupational code for each Census. The 1950 occupation and industry codes are used out of convenience since the Integrated Public Use Microdata Series (IPUMS) data has this classification for all census data used in the model.

(284) The Census data provide the number of individuals in each industry and occupation cell every ten years. The IM uses BLS industry data to trend the intervening years between each

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[77] The individual-level Census data are retrieved from the online Integrated Public Use Microdata Series (IPUMS) and cover 1920 to 2000. In general, the IM uses the 1% percent samples and their associated sample weights.

Census. For each 10-year interval, the annual size of each industry and occupation cell moves with the trends in the industry. The BLS data are organized by Standard Industrial (SIC) code, and the number of possible SIC codes increases steadily over time. For example, the 1920 and 1930 BLS codes had fewer than five possible values, while the 1940 BLS codes had over 10 possible industry values. In order to use the same trend data for all entry cohorts, occupations are combined into seven broad categories and interpolated using the trend of the relevant category.

(285) The population component of the model next disaggregates each year's trended industry-occupation pair into annual age bins. I assume that the age distribution is common across all industries within an occupation and that within each occupation, the true population age distribution is smooth. In order to smooth the age distributions, I first linearly interpolate each age bin across intercensal years. I then smooth each industry-occupation-age cell using a nonparametric local linear regression (LLR). A LLR only uses observations near a particular point. For points within this neighborhood, the LLR assigns more weight to the observations closer to the point. The IM uses a triangular kernel to apply greater weight to the neighboring age bins. The LLR completes the basic apportionment of individuals into single year age bins for each industry/occupational cell for every calendar year.

VI.3.2.3.2. Mortality

(286) The next step in the alive exposed population calculation incorporates mortality. Asbestos-exposed workers can die from an asbestos-related malignancy or from other causes. Both need to be incorporated into the IM. The mortality data used in the IM are from the Human Life-Table database for 1901 through 1999.[78] Because asbestos workers are largely blue collar, the model adjusts the probability of death by year and age to reflect blue-collar mortality. The adjustment factor is the ratio of blue-collar mortality to overall mortality from the Society of Actuaries' RP-2000 Mortality Tables.[79] The IM's forecasts of the probability

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78 The "Human Life-Table Database: United States of America" is sourced from: Felicitie C. Bell and Michael L. Miller, *Life Tables for the United States Social Security Area 1900-2100* (Washington, DC: US Social Security Administration, 2005) and is available from http://www.lifetable.de/cgi-bin/Country.plx?Country=United%20States%20of%20America, accessed Jan. 21, 2013.

79 Society of Actuaries, *The RP-2000 Mortality Tables* (Schaumburg, IL: Society of Actuaries, 2000), *available at* http://www.soa.org/Files/Research/Exp-Study/rp00_mortalitytables.pdf.

of death by age use the preferred method of the Society of Actuaries. The log of age-specific mortality are regressed on time for the period 1929-1999:

$$ln(m_i(y)) = \alpha_i + \beta_i y + \varepsilon_i$$

where $m_i(y)$ is the mortality for age i in year y, α and β are regression parameters and ε is a random variable with an extreme value distribution. To obtain mortalities for the period 2000-2059 for each age, i, the IM uses the inverse logistic transformation:

$$m_i(y) = e^{(\alpha_i + \beta_i y)}$$

(287) Individuals still alive after the first year are aged one year, and the next cohort enters the model. The process is repeated until the last cohort (group of 15 year olds) enters the model in 1979. Between 1929 and 1979, the exposed population will increase with new cohorts and decrease with mortality. The number of new entrants is much larger than the number of deaths. Between 1979 and 2059 no new cohorts enter the model, as no new entrances to the labor force will have been occupationally exposed to asbestos. Over these years, the size of the exposed population is steadily falling as individuals die.

(288) The above calculations produce the alive-exposed population for any industry-occupation pair by age and calendar year. For each year, there are 40,328 pairs in the model. The IM applies epidemiological equations to these pairs by age and by calendar years and calculates the number of new mesothelioma cases.

VI.3.2.3.3. The Job Exposure Matrix

(289) Data on the intensity of asbestos exposure come from a variety of sources in the industrial hygiene literature. Nicholson is best known for a series of studies on insulators and brake repair and maintenance workers. Selikoff examined insulation workers (1965) and shipyard workers (1978). Harries (1968, 1972) also studied shipbuilding and repair workers. Michaels et al (1987) looked at sheet metal workers, and Robins and Green (1988) studied workers in the primary manufacture of building materials.[80]

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[80] Irving J. Selikoff, Jacob Churg, and E. Cuyler Hammond, "The Occurrence of Asbestosis among Insulation Workers in the United States," *Annals of New York Academy of Sciences* 132, no. 1 (1965): 139–55; Irving J. Selikoff and E. Cuyler Hammond, "Asbestos-associated Disease in United States Shipyards," *CA:*

(290) These individual research studies marked the beginning of research on Job Exposure Matrices (JEMs). JEMs are the accepted method for relating workplace exposure levels to occupation and/or industry of employment in modern epidemiology and industrial hygiene studies. A JEM categorizes the probability and the intensity of exposure in a table where the rows and columns list occupation and industry. The IM JEM draws on existing JEMs by Cocco and Dosemeci (1999) and average fiber counts reported in Nicholson. The IM assumes that the probability of exposure in a given industry-occupation pair is constant over time, while the intensity of exposure changes over time (e.g., increased use of asbestos in construction, or the introduction of the first OSHA standards in 1970). Epidemiological equations relate the probability and intensity of asbestos exposure from the JEMs to the mesothelioma incidence.

(291) The IM uses a JEM that gives both a probability and intensity of exposure by occupation and industry under the 1950 census codes. The product of the probability of exposure and the intensity of exposure gives the relative risk of disease incidence. Construction of the JEM requires separately constructing an intensity table and a probability table.

(292) These tables primarily follow Cocco and Dosemeci, who rank asbestos exposure within occupations and industries on a 4-point scale – 0 (none), 1 (low), 2 (medium), 3 (high) – with separate rankings for probability of exposure and exposure intensity. Furthermore, exposures are classified as being either (1) only occupation dependent, or (2) both occupation and industry dependent. The IM, however, modifies the intensity table to be able to use the fiber counts instead of the intensity ranking, which the Nicholson model uses in forecasting the mesothelioma incidence.

A Cancer Journal for Clinicians 28, no. 2 (1978): 87–99; P. G. Harries, "Asbestos Hazards in Naval Dockyards," *Annals of Occupational Hygiene* 11, no. 2 (1968): 135–45; P. G. Harries, et al., "Radiological Survey of Men Exposed to Asbestos in Naval Dockyards," *British Journal of Industrial Medicine* 29, no. 3 (1972): 274–79; David Michaels, et al., "Asbestos Disease in Sheet Metal Workers: II. Radiologic Signs of Asbestosis among Active Workers," *American Journal of Industrial Medicine* 12, no. 5 (1987): 595–603; Thomas G. Robins and Margaret A. Green, "Respiratory Morbidity in Workers Exposed to Asbestos in the Primary Manufacture of Building Materials," *American Journal of Industrial Medicine* 14, no. 4 (1988): 433–48.

Intensity tables

(293) In Cocco and Dosemeci, intensity ranking tables consist of cardinal values that are assigned for each industry and occupation. The modifications that are applied to those tables aim at replacing those cardinal values with average concentrations (i.e., fiber counts per milliliter) of asbestos. The average concentration of asbestos for an industry or occupation quantifies the degree of asbestos exposure intensity for a typical person that is employed in that industry or occupation.

(294) Nicholson is used as the only source in assigning the average concentration values to industries and occupations. Nicholson provides a minimum and a maximum value of concentration levels for an industry (occupation). In the updated intensity table, the mean of minimum and maximum concentration values is assigned to the respective industry (occupation).

(295) For some industries and occupations, Nicholson provides more than one average concentration values. For a given industry, Nicholson may report average concentration values on a sub-industry level, i.e., four-digit SIC code level. For construction industry, for example, two average concentration values are provided, one for residential general contractors, and another for special trade contractors. For a given occupation, Nicholson may provide different average concentration values for different work environments that a person can be employed in that occupation. For example, the average concentration value for asbestos and insulation workers working at sites for light and heavy construction is different than the one for those workers working at sites for marine work. For such an industry or occupation, the mean value of those multiple average concentration values is assigned in the updated intensity table.

(296) Nicholson reports average concentration values only for a subset of the industries and occupations that are listed in the JEM. For an industry or occupation that is not listed in Nicholson, the updated intensity table uses a value that is calculated via interpolation of average concentration values of industries or occupations that are reported in Nicholson. The interpolation exercise uses the relationship between industries' (occupations') average concentration values and their cardinal values listed in Nicholson's intensity ranking table (see Nicholson (1982) Table XVII). The table assigns one of the eight distinct cardinal values to each one of the listed industries and occupations. The number of industries and

occupations listed in Nicholson's intensity ranking table is higher than the number of those for which Nicholson provides average concentration values. So, there are some industries and occupations that are assigned the same cardinal value. For such a cardinal value, the mean of the average concentration values of industries (occupations) is used in interpolation.

(297) After assigning average concentration values via interpolation, there still remain in the JEM a number of industries and occupations without average concentration values. Those are the industries and occupations that are listed in the JEM but not in Nicholson. For such an industry (occupation), an average concentration value is assigned by using the average concentration values of similar industries (occupations). Similar industries (occupations) are determined based on Cocco and Dosemeci's intensity rankings. Industries (occupations) that are assigned the same intensity ranking in Cocco and Dosemeci are assumed to be similar industries (occupations). The calculation of the average concentration value of similar industries requires mapping the intensity cardinal values in Nicholson Table XVII to the intensity rankings in Cocco and Dosemeci. The top two cardinal values are assumed to be the high intensity and the bottom two to be the low intensity industries (occupations); the remaining cardinal values are assumed to constitute the medium intensity industries (occupations). Average concentration values that are assigned to industries (occupations) not listed in Nicholson, are calculated by taking the mean of average concentration values of the respective cardinal values.

(298) After constructing the industry-specific and occupation-specific updated intensity tables, the next and last step in updating the intensity tables is the assignment of concentration values to each industry and occupation pair in the JEM. The intensity level for an industry-occupation pair is calculated by taking the average of the industry and occupation average concentration values. However, the intensity level for an industry-occupation pair is considered as zero if either one of the industry or occupation intensity value is zero. For asbestos workers, I assume that such workers are exposed to the same level of average asbestos fiber counts across industries. Exhibit 54 tabulates a sample of fiber count assignments that are applicable to year 1950.

Exhibit 54: Assignment of fiber counts for select industry-occupation pairs

Occupation	Occupation specific fiber per cc	Industry	Industry specific fiber per cc	Industry-occupation specific fiber per cc
Asbestos and insulation workers	16.43	Blast furnaces steel works and rolling mills	8.86	16.43
Painters construction and maintenance	5.45	Ship and boat building and repairing	8.86	7.16
Carpenters	3.40	Construction	3.65	3.53
Mechanics and repairmen automobile	0.39	Auto repair services and garages	0.39	0.39

Probability tables

(299) The probability of being exposed to asbestos for an industry-occupation pair depends on the type of the occupation, as Cocco and Dosemeci suggest. In particular, if the occupation is type A (i.e., only the occupation values are relevant) the occupation specific probability is assigned to the industry-occupation pair's probability. On the other hand, for B type occupations, the probability for an industry-occupation pair is calculated as the average of the industry specific and occupation specific probabilities.

(300) I assign the highest probability of exposure among occupations that are listed in the JEM to asbestos workers. Similarly, I assign the highest probability of exposure among industries that are listed in the JEM to the shipyard industry. The exposure probability of each industry-occupation pair in the shipyard industry is the average of the shipyard industry specific and occupation specific probabilities regardless of the type of the occupation.

Relative risk over time

(301) Because the intensity of exposure changes over time for each industry, the fiber counts for each industry should also vary over time. More specifically, the IM uses six eras of asbestos exposure and assigns relative intensity values for each industry and era. Exhibit 55 displays the relative measures of exposure across time periods.

Exhibit 55: The relative levels of exposure over time for the three industrial groups[81]

Years	Relative level by industrial group		
	Primary and secondary manufacturing, shipyards, and utilities*	Chemical, automotive, and railroad	Construction
Pre-1940	0.78	0.6	0.78
1940-1945	1.3	1.0	1.3
1946-1957	1.0	1.0	1.0
1958-1959	1.0	1.0	1.67
1960-1971	0.5	1.0	1.67
Post-1971	0.1	0.4	0.33
* This category is the default for industries not specifically categorized.			

VI.3.2.3.4. Competing risk calculations

(302) Having determined the number of alive exposed population, the probability of exposure and the intensity of exposure for each industry-occupation pair in the JEM, I calculate the occupational mesothelioma incidence in each industry-occupation pair by using a risk equation. I calculate the incidence of mesothelioma, IM, by:[82]

$$I_M(t,d,f) = K_M f[(t-10)^3 - (t-10-d)^3] \text{ for } t > 10+d \text{ years,}$$

$$= K_M f[(t-10)^3] \text{ for } 10 < t < 10+d \text{ years,}$$

$$= 0 \text{ for } t < 10 \text{ years.}$$

where K_M is the carcinogenicity of asbestos with respect to mesothelioma, f is the instantaneous fiber concentration, t is the time since onset of exposure, and d is the duration of exposure.

(303) I substitute f with the average intensity for an industry-occupation pair by multiplying the exposure probability of the pair by the number of fiber counts assigned to the pair. I use

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81 The relative levels of exposure by industry through time are the results of direct consultation with Dr Nicholson.

82 *See* W.J. Nicholson, *Airborne Asbestos Health Assessment Update*. (Research Triangle Park, NC: US Environmental Protection Agency, 1986), at 85.

1.17E-08 for K_M in the risk equation. This factor is calculated as the weighted average of carcinogenic factors for fibers with respect to the share of fibers imported into the United States.[83]

(304) The specific functional form of the risk equation allows me to use person-years (i.e., the number of people times the number of years they were exposed to asbestos) instead of individual persons across time. The aggregate incidence of mesothelioma among the total alive population who has ever been exposed to asbestos across all years is the same as the aggregate incidence of mesothelioma of all alive person years of exposure. In practical terms, there is no need to include duration of exposure (e.g., duration of employment) in the incidence calculation. This fact simplifies the incidence computations because it becomes unnecessary to track individuals over time. It is sufficient to calculate incidence in a single year and then start over with the next year. In this sense, the IM is a conceptually dynamic tracking of individuals over time but operationally a static mapping of intensity-weighted person years to disease.

VI.3.2.3.5. Background incidence of mesothelioma

(305) The IM incorporates estimates of background mesothelioma by utilizing a two-stage clonal expansion (TSCE) model that is studied in Moolgavkar (2009). The model uses input age specific population and basically estimates age specific rate of getting mesothelioma. The model does so by estimating the rate of malignant conversion of cells that have gone through a clonal expansion. This rate is represented in the following form:

$$h(t) = pqr\frac{e^{-qt} - e^{-pt}}{qe^{-pt} - pe^{-qt}}$$

where *t* indicates age, and I estimate the parameters of *p*, *q,* and *r*.

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[83] *See, e.g.,* W. J. Nicholson, "The Carcinogenicity of Chrysotile Asbestos–A Review," *Industrial Health* 39 (2001): 57–64; Leslie T. Stayner, David A. Dankovic, and Richard A. Lemen, "Occupational Exposure to Chrysotile Asbestos and Cancer Risk: A Review of the Amphibole Hypothesis," *American Journal of Public Health* 86, no. 2 (1996): 179–86.

Robert L. Virta, *Worldwide Asbestos Supply and Consumption Trends from 1900 through 2003* (Reston, VA: US Geological Survey, 2006).

(306) I calculate the resulting rate for each age and multiply them with the respective population counts to estimate the background mesothelioma incidence. I also predict the background incidence for the years 2010 through 2059 by using the age specific population projections that are reported by the Census.[84]

VI.3.2.3.6. Calibration

(307) I calibrate the model's estimates of the total mesothelioma incidence for the period 1973 through 2009 by using the Surveillance, Epidemiology, and End Results (SEER) data from the National Cancer Institute (NCI). SEER is a program of the NCI that maintains a population registry and produces data on mesothelioma incidence, among other cancer cases.[85] SEER was started in January 1973 as a result of the National Cancer Act of 1971. SEER data track cancer incidences among certain geographic areas of the United States, with areas selected based on their ability to accurately collect and report cancer statistics and to be representative of the overall U.S. population with respect to select demographic and epidemiological factors.

(308) The SEER regional data are extrapolated to national incidence using the SEER-provided base populations. I compare the SEER national incidence of mesothelioma to the total mesothelioma incidence predicted by the IM. In doing so, I minimize the sum of squared difference between the IM output and the SEER data by varying the industry specific and occupation specific exposure probabilities, background parameters, and a parameter measuring the level of underdiagnosis in years prior to 1990.

(309) I add the underdiagnosis parameter in the model to correct for the bias that resulted from the underdiagnosis of mesothelioma prior to year 1990.[86] My analysis of the SEER data indicates that prior to 1990 the level of mesotheliomas identified was lower than the actual

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84 Census Bureau, US Department of Commerce, "National Population Projections," accessed Jan. 21, 2013, http://www.census.gov/population/projections/data/national.

85 For general information about SEER data, *See* National Cancer Institute, "About the SEER Program," accessed Jan. 21, 2013, http://seer.cancer.gov/about/. All data were downloaded from this site.

86 *See*, e.g., Bertram Price, "Analysis of Current Trends in United States Mesothelioma Incidence," *American Journal of Epidemiology* 145, no. 3 (1997): 211–218;

Robert Connelly, et al., "Demographic Patterns for Mesothelioma in the United States," *Journal of the National Cancer Institute* 78, no. 6 (1987): 1053–1060.

number of mesotheliomas that existed in the SEER sample. After 1990, the efforts of EPA in the 1980s increased the awareness of mesothelioma disease, decreasing the level of underdiagnosis. After 1990 there was no significant development in the diagnosis technologies.[87]

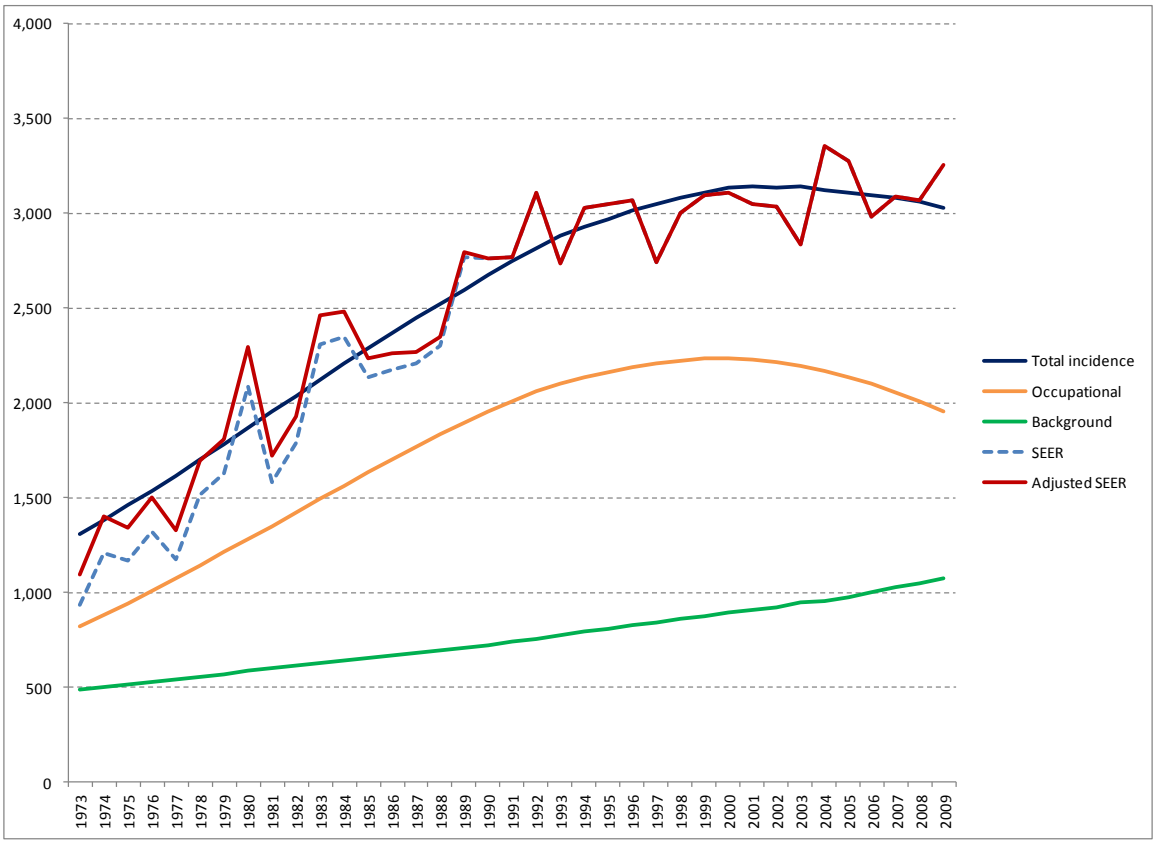
VI.3.2.4. Resulting mesothelioma estimates

(310) I use standard optimization techniques to estimate the parameters in the IM, based on its fit to the extrapolated SEER data through 2009. This is an iterative process in which I start the optimization by minimizing the sum of squared differences between the IM output and the SEER data for the female population. This provides with initial conditions for estimating the background parameters for the entire population. Specifically, I estimate the occupational exposure probabilities by imposing the background parameters that I obtain in the first stage on the entire population. With these occupational exposure probabilities, I use the female population to reestimate the background parameters. I follow this optimization routine until the resulting background parameters and occupational exposure probabilities converge and the sum of the squared differences between the IM output and the SEER data for the entire population does not decrease with further iterations. I then tested the robustness of my parameter estimates by trying multiple sets of initial values in the optimization routine; these sets included values that were, higher or lower than the estimates, and also included extreme values to test convergence. For every set of initial parameters I imposed, after the iterative optimization routine, I reached the same estimates. Exhibit 56 shows the IM estimates of the annual occupational incidence and background incidence for the period 1973 through 2009.

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87 H. Weill, J. M. Hughes, and A. M. Churg, "Changing Trends in US Mesothelioma Incidence," *Occupational & Environmental Medicine* 61 (2004): 438–441.

Exhibit 56: The IM estimates and the SEER mesothelioma incidence



VI.4. Curriculum Vitae of Dr. Charles E. Bates

Summary of experience

Charles E. Bates has extensive experience in statistics, econometric modeling, and economic analysis. He specializes in the application of statistics and computer modeling to economic and financial issues. Dr. Bates has more than 20 years of experience and provides clients with a wide range of litigation and commercial consulting services, including expert testimony and guidance on economic and statistical issues.

Dr. Bates is a recognized expert in asbestos-related matters. He speaks in national and international forums on the asbestos litigation environment and estimation issues. Dr. Bates is frequently retained to serve as an expert on such matters in large litigations and has testified before the United States Senate Judiciary Committee and Federal Bankruptcy Court.

Areas of expertise

- Asbestos liability estimation
- Economic Analysis
- Econometrics
- Statistical Analysis
- Microsimulation Modeling
- Data Decision Tools and Database Design/Applications

Selected asbestos and product liability experience

- Served as an asbestos estimation methodology expert on behalf of the Debtors in Specialty Products Holding Corp. and Bondex International, Inc.
- Retained as an asbestos liability valuation expert on behalf of the Official Committee of Unsecured Creditors of Motors Liquidation Company (f/k/a General Motors Corporation) in its bankruptcy proceedings.

- Authored expert report and provided deposition testimony regarding the value of diacetyl claims on behalf of the Official Committee of Equity Security Holders in the Chemtura Corporation bankruptcy proceedings.
- Testified in deposition on behalf of the ASARCO Unsecured Creditors Committee in the ASARCO bankruptcy proceedings regarding the valuation of past and future asbestos-related personal injury claims.
- Authored expert report and provided deposition testimony on behalf of the policyholder in the matter of *Imo Industries, Inc. v. Transamerica Corp.*
- Currently retained as an expert by Fortune 500 companies to produce asbestos expenditure estimates for annual and quarterly financial statements. Estimations aid clients with Sarbanes-Oxley compliance.
- Currently retained as an expert in asbestos estimation and insurance valuation, for numerous asbestos litigation matters, on behalf of insurance companies, corporations, and financial creditors' committees of federal bankruptcy proceedings.
- Testified before the Senate Judiciary Committee on the economic viability of the Trust Fund proposed under S.852, the Fairness in Asbestos Injury Resolution (FAIR) Act of 2005. Testimony clarified Bates White's independent analysis on the estimate of potential entitlements created by the administrative no-fault trust fund that uses medical criteria for claims-filing eligibility.
- Testified in deposition on behalf of Liberty Mutual Insurance Company in the Plibrico bankruptcy proceedings regarding the valuation of past and future asbestos personal injury claims and exposure criteria in plan proponents proposed trust distribution procedures.
- Testified at deposition on behalf of the joint insurers defense committee to address the fraction of expenditures associated with the company's asbestos installation operations in *Owens Corning v. Birmingham Fire Insurance Company of Pennsylvania.*
- Testified in the Babcock & Wilcox bankruptcy confirmation hearing on behalf of the Insurers Joint Defense Group to address asbestos liability. Developed claims criteria evaluation framework to assess asbestos liability forecasts and trust distribution procedures.

- Testified at deposition on behalf of Sealed Air in the fraudulent conveyance matter regarding the 1998 acquisition of Cryovac from W.R. Grace. Directed estimation of foreseeable asbestos liability for fraudulent conveyance matter to advise the debtor in the recent bankruptcy of a defendant with over $200 million in annual asbestos payments. Developed asbestos liability forecasting model and software. Directed industry research and interviewed industry experts.
- Testified at deposition on behalf of Hartford Financial Services Group to address the asbestos liability of MacArthur Company and Western MacArthur Company. Estimated asbestos liability in the context of bankruptcy proceedings.
- Testified at deposition on behalf of the Center for Claims Resolution in arbitration proceedings of *GAF v. Center for Claims Resolution*.
- Served as testifying expert on behalf of CSX Transportation on the suitability of asbestos claim settlements for arbitration proceedings of *CSX Transportation, Inc. v. Lloyd's, London*.
- Developed an econometric model of property damage lawsuits for estimating the future liability of a former asbestos manufacturer arising from the presence of its asbestos products in buildings.

Selected litigation and consulting experience

- Testified in United States Tax Court on behalf of the taxpayers on the statistical basis and accuracy of shrinkage accruals in Kroger v. Commissioner.
- Served as consulting expert and performed statistical and quantitative analyses to assess the merits of a class action alleging payment of fees to mortgage brokers for referral of federally related mortgage loans.
- Testified in United States Tax Court on behalf of the taxpayer analyzing the statistical prediction of bond ratings using company financial data in Nestlé Holdings Inc. v. Commissioner.
- Submitted written expert testimony on the statistical and financial analysis of option transactions and an analysis of alternative stock option hedges in McMahon, Brafman, and Morgan v. Commissioner.

- Testified in United States Tax Court on behalf of the taxpayers of IRS experts on the statistical basis and accuracy of shrinkage accruals in Wal-Mart v. Commissioner.
- Served as consulting expert and analyzed the racial composition for a large manufacturing corporation using EEO data and employed sophisticated statistical analysis and modeling to determine the validity and strength of an employment discrimination claim.
- Testified on behalf of VNC in the arbitration hearing of VNC v. MedPartners.
- Provided expert testimony in California Superior Court on the validity of economic comparability adjustments for pipeline easement rents in Southern Pacific Transportation Corp. v. Santa Fe Pacific Corp.
- Served as statistical expert and developed detailed statistical analysis of customs trade data for use in criminal transfer-pricing litigation.
- Submitted written testimony in United States Tax Court on the beneficial life of company credit card in a tax matter for a large retailer drawing on the company's point-of-sale data, credit card data, and customer demographic information.
- Developed state-of-the-art models to account for default correlation for underwriting credit insurance; models became the standard tools for the country's largest credit insurance firm.
- Led a team of economists that provided litigation-consulting services in one of the largest U.S. price-fixing cases. Case involved the development of state-of-the-art economic models, damages' analyses, client presentations, pretrial discovery, industry research, preparation of evidence and testimony, depositions, and a critique of opposing expert analyses and reports.
- For a start-up global telecommunications enterprise, provided consulting services and developed a comprehensive computer model to evaluate the firm's financial plan. Model incorporated marketing, pricing, and communications traffic in a single modeling framework to facilitate sensitivity analysis by creditors and to evaluate the risk associated with the strategic business plan.
- Served as senior economic advisor on issues of analytical methodology for numerous pharmacoeconometric and health outcomes research projects. Provided expertise in the

development of decision tools and the creative use of modeling applications for pharmacoeconomics and outcomes research.

Professional experience

Prior to founding Bates White, Dr. Bates served as a Vice President of A.T. Kearney. Previously, he was the Partner in Charge of the Economic Analysis group at KPMG.

Dr. Bates began his career on the faculty of Johns Hopkins University's Department of Economics, where he taught courses in advanced statistical economic analysis and trade theory.

Education

- Harvard School of Public Health, Advanced Seminar in Pharmacoeconomics
- PhD, Economics, University of Rochester
- MA, Economics, University of Rochester
- BA, Economics and Mathematics (High Honors), University of California, San Diego

Publications

- Bates, Charles E., Charles H. Mullin, and Marc C. Scarcella. "The Claiming Game." Mealey's Litigation Report: Asbestos 25, no. 1 (February 3, 2010).
- Bates, Charles E., Charles H. Mullin, and A. Rachel Marquardt. "The Naming Game." Mealey's Litigation Report: Asbestos 24, no. 15 (September 2, 2009).
- Bates, Charles E., and Charles H. Mullin. "Show Me The Money." Mealey's Litigation Report: Asbestos 22, no. 21 (December 3, 2007).
- Bates, Charles E., and Charles H. Mullin. "The Bankruptcy Wave Of 2000—Companies Sunk By An Ocean Of Recruited Asbestos Claims." Mealey's Litigation Report: Asbestos 21, no. 24 (January 24, 2007).
- Bates, Charles E., and Charles H. Mullin. "Having Your Tort and Eating It Too?" Mealey's Asbestos Bankruptcy Report 6, no. 4 (November 2006).

- Bates, Charles E., and Halbert White. "Determination of Estimator with Minimum Asymptotic Covariance Matrices." Econometric Theory 9 (1993).
- Bates, Charles E., and Halbert White. "Efficient Instrumental Variables Estimation of Systems of Implicit Heterogeneous Nonlinear Dynamic Models with Nonspherical Errors." In International Symposia in Economic Theory and Econometrics, vol. 3, edited by W.A. Barnett, E.R. Berndt and H. White. New York: Cambridge University Press, 1988.
- Bates, Charles E. "Instrumental Variables." In The New Palgrave: A Dictionary of Economics, edited by John Eatwell, Murray Milgate, and Peter Newman. London: Macmillan, 1987.
- Bates, Charles E., and Halbert White. "An Asymptotic Theory of Consistent Estimation for Parametric Models." Econometric Theory 1 (1985).

Selected speaking engagements

- "Concussion Suits Against the NFL, NCAA and Uniform Equipment Manufacturers." Perrin Conferences' Perrin's Legal Webinar Series, May 24, 2012.
- "An Update on U.S. Mass Tort Claims." Perrin Conferences' Emerging Risks on Dual Frontiers: Perspectives on Potential Liabilities in the New Decade, April 12-13, 2012, London, United Kingdom.
- "The Next Chapter of Asbestos Bankruptcy: New Filings, Confirmations & Estimations." Perrin Conferences' Asbestos Litigation Conference: A National Overview & Outlook, September 13–15, 2010, San Francisco, CA.
- "Trust Online: The Impact of Asbestos Bankruptcies on the Tort System." Perrin Conferences' Asbestos Bankruptcy Conference: Featuring a Judicial Roundtable on Asbestos Compensation, June 21, 2010, Chicago, IL.
- "Current Litigation Trends that are Impacting Asbestos Plaintiffs, Defendants, & Insurers." Perrin Conferences Asbestos Litigation Mega Conference, September 14–16, 2009, San Francisco, CA.

- "Verdicts, Settlements and the Future of Values: Where Are We Heading? A Roundtable Discussion." HB Litigation Conferences' Emerging Trends in Asbestos Litigation, March 9–11, 2009, Los Angeles, CA.
- "Role of Bankruptcy Trusts in Civil Asbestos." Mealey's Emerging Trends in Asbestos Litigation Conference, March 3–5, 2008, Los Angeles, CA.
- "The Intersection between Traditional Litigation & the New Bankruptcy Trusts." Mealey's Asbestos Bankruptcy Conference June, June 7–8, 2007, Chicago, IL.
- ABA's Insurance Coverage Litigation Committee conference, March 1–4, 2007, Tucson, AZ.
- Mealey's Asbestos Conference: The New Face of Asbestos Litigation, February 8–9, 2007, Washington, DC.
- Mealey's Asbestos Bankruptcy Conference, December 4–5, 2006, Philadelphia, PA.
- "Seeking Solutions to European Asbestos Claiming: Will it be FAIR?" Keynote address, Mealey's International Asbestos Conference, November 1–2, 2006, London, United Kingdom.
- Mealey's Asbestos Bankruptcy Conference, June 9, 2006, Chicago, IL.
- Harris Martin Publishing Asbestos Litigation Conference, March 2, 2006, Washington DC.
- Mealey's Wall Street Forum: Asbestos Conference, February 8, 2006, New York, NY.
- Mealey's Asbestos Legislation Teleconference, February 7, 2006.

Professional associations

- National Association of Business Economists
- American Economic Association
- Econometric Society