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United States Bankruptcy Court, E.D. Louisiana.

IN RE: THE BABCOCK & WILCOX COMPANY, DEBTOR.
THE BABCOCK & WILCOX COMPANY, PLAINTIFF,
v.
PHILADELPHIA ENERGY SOLUTIONS REFINING AND MARKETING LLC, PES LIQUIDATING TRUST, WESTPORT INSURANCE COMPANY, XL INSURANCE AMERICA, INC., ALLIANZ GLOBAL RISKS US INSURANCE COMPANY, HDI GLOBAL INSURANCE COMPANY, AND CERTAIN UNDERWRITERS AT LLOYD'S LONDON-SYNDICATE 1221 (NAVIGATORS), ZURICH AMERICAN INSURANCE COMPANY, CERTAIN UNDERWRITERS AT LLOYD'S SUBSCRIBING TO ENNMG1800181, CERTAIN UNDERWRITERS AT LLOYD'S SUBSCRIBING TO ENNMG1800281, CERTAIN UNDERWRITERS AT LLOYD'S SUBSCRIBING TO ENNMG1800282, CERTAIN UNDERWRITERS AT LLOYD'S SUBSCRIBING TO EN100070-18, DEFENDANTS. [1]

CASE NO: 00-10992
|
ADV. NO. 21-1014
|
Filed 06/13/2026

CHAPTER 11

SECTION A

MEMORANDUM OPINION AND ORDER

MEREDITH S. GRABILL UNITED STATES BANKRUPTCY JUDGE

***1** The sole count in the above-captioned adversary proceeding filed by The Babcock & Wilcox Company (pre-confirmation, "B&W" and, post-confirmation, the "Reorganized B&W") seeks (i) a declaration that the confirmed joint plan of reorganization in B&W's 2000 bankruptcy case discharged the claims now asserted against the Reorganized B&W and affiliates in a Pennsylvania state court by two of the above-named Defendants, Philadelphia Energy Solutions Refining & Marketing, LLC ("PESRM"), and PES Liquidating Trust (together, with PESRM, the "PES Entities") and (ii) enforcement of the confirmed joint plan's discharge injunction. Through the Pennsylvania state court action, the PES Entities assert products-liability claims against the Reorganized B&W entities stemming from a 2019 explosion at a refinery formerly operated by PESRM (the "Girard Point Refinery") allegedly caused by the failure of an elbow joint manufactured by B&W and installed in the hydrofluoric-acid alkylation unit in the refinery in the early 1970s.

After denying cross-motions for summary judgment as well as a second motion for summary judgment filed by the Reorganized B&W, [ECF Docs. 199 & 236], this Court held a four-day trial on the merits of the sole count alleged in the adversary proceeding. The Court heard testimony and admitted exhibits identified in its Order dated April 17, 2025. [ECF Doc. 258]; *see also* [ECF Doc. 268]. The Court accepted post-trial briefs from the parties, [ECF Docs. 269, 270, 274 & 275], and took the matter under advisement, [ECF Doc. 284].

Pursuant to Bankruptcy Rule 7052, the Court issues the following findings of fact and conclusions of law. Based on the evidence and applicable law, the Court finds that the PES Entities have met their burden to show that their products-liability claims are not prepetition bankruptcy claims discharged by the confirmed joint plan in B&W's bankruptcy case; therefore, they are excepted from the consequences of that confirmed plan. The Court thus DENIES the sole count in the Reorganized B&W's declaratory action. [2]

JURISDICTION

This Court has jurisdiction to grant the relief provided for herein pursuant to 28 U.S.C. § 1334 and the matter presently before the Court constitutes a core proceeding that this Court may hear and determine on a final basis under 28 U.S.C. § 157(b). *See U.S. Brass Corp. v. Travelers Ins. Grp., Inc. (In re U.S. Brass Corp.)*, 301 F.3d 296, 303–06 (5th Cir. 2002). Further, the confirmed joint plan of reorganization in this case reserves the jurisdiction of this Court "[t]o hear and determine all controversies, suits, and disputes that may relate to, impact upon, or arise in connection with this Plan or any

other Plan Documents or their interpretation, implementation, enforcement, or consummation" and "[t]o hear and determine any other matters related hereto, including matters related to the implementation and enforcement of all orders entered by the Court in [B&W's] Chapter 11 Cases," which includes the Order confirming the joint plan of reorganization. [No. 00-10992, ECF Doc. 7059, §§ 9.5.3 & 9.5.9]; *see also* [No. 00-10992, ECF Doc. 7053].

PART I: FINDINGS OF FACT [3]

Specific Witness Credibility Determinations

***2 Anthony Rutkowski**, a corrosion engineer, spent his 37-year career at the Girard Point Refinery, starting in 1969. *See* Trial Tr. 46:2–6 (Apr. 7, 2025), [ECF Doc. 262]. He served as a refinery-piping inspector and supervisor in the hydrofluoric-acid alkylation unit between 1994 and 2001 and holds several certifications from the American Petroleum Institute specific to refinery and piping inspection. *See* Trial Tr. 46:7–49:14 (Apr. 7, 2025). The Court finds Mr. Rutkowski's testimony to be credible and useful to the Court regarding the use of thickness-measurement locations to measure corrosion rates in the refinery's piping system and the results of thickness-measurement location reports in the hydrofluoric-acid alkylation unit from the late 1990s to early 2000s.

Gary Kemeny, a chemical engineer, was employed by Gulf Oil in 1978 at the Girard Point Refinery and worked in the hydrofluoric-acid alkylation unit of the refinery in various capacities between 1982 and 1987, 1992 to 1997, and 2005 to 2019. *See* Trial Tr. 102:22–105:1, 106:12–111:16 (Apr. 8, 2025), [ECF Doc. 263]. His roles primarily involved operations and supervision of operators and inspectors in Unit 433; he served as the lead process engineer for a major modification of the hydrofluoric-acid alkylation unit in 2010 and as the alkylation engineering advisor for the refinery through 2019. *See id*. He has served on nationwide ad hoc committees of hydrofluoric-acid alkylation unit operators and has contributed to the American Petroleum Institute's recommended practices for the safe operation of hydrofluoric-acid alkylation units. *See* Trial Tr. 105:2–20 (Apr. 8, 2025). Mr. Kemeny oriented the Court as to the process flow in the Girard Point Refinery's hydrofluoric-acid alkylation unit, *see* Trial Tr. 113:18–145:7 (Apr. 8, 2025), and provided results from the PES Entities' internal investigation after the June 2019 incident at the refinery, having played an integral part on the investigation team, *see* Trial Tr. 105:21–106:11; 162:20–167:14; 194:17–195:25 (Apr. 8, 2025). The Court finds Mr. Kemeny to be a credible fact witness and gives much weight to his testimony, particularly as it relates to recommended inspection protocols for hydrofluoric-acid alkylation unit piping systems over the years and the inspection protocols that were implemented in the Girard Point Refinery.

Glen Stevick, Ph.D., a mechanical engineer and the principal and founder of Berkeley Engineering and Research, Inc., provided expert testimony on behalf of the Reorganized B&W at trial. Dr. Stevick serves on several committees associated with the American Society of Mechanical Engineers and is a member of the American Society for Civil Engineers and the Society of Forensic Engineering. *See* Trial Tr. 49:13–50:12 (Apr. 10, 2025), [ECF Doc. 264]. But Dr. Stevick is not a metallurgical engineer and has little practical experience working in hydrofluoric-acid environments or designing positive-material identification programs or Project Safety Management programs (discussed *infra*). *See* Trial Tr. 216:12–235:17 (Apr. 10, 2025). Dr. Stevick opined as to why the elbow joint manufactured by B&W for installation in the hydrofluoric-acid unit at the Girard Point Refinery in the early 1970s complied with the American Society for Testing and Materials' chemical composition requirements at that time, asserting that substitutions were commonplace given engineering's focus on "the cost, what's practical, generally accepted good engineering practices." *See* Trial Tr. 57:21–58:11; 238:18–249:9 (Apr. 10, 2025). [4] After asserting that the elbow joint met chemical specifications at installation, Dr. Stevick further opined as to Sunoco's knowledge of the dangers associated with elevated levels of residual elements nickel and copper in carbon-steel piping and testified that industry best practices in the mid-1990s to 2003 obligated Sunoco to inspect every single component part in the hydrofluoric acid alkylation unit retroactively—while again acknowledging high costs and practical concerns for such measures. S*ee* Trial Tr. 58:12–59:22; 61:6–64:10; 117:13–123:9 (Apr. 10, 2025) ("[E]ngineering is always involved heavily with cost [and] [w]e can't just design things without consideration of how much they cost ...."). The Court finds Dr. Stevick's testimony to be incongruent and strained and gives little weight to his testimony.

***3 Robert A. Carnahan**, a metallurgical engineer, provided expert testimony in the areas of metallurgy, corrosion, and failure analysis and prevention. Mr. Carnahan is a current member of several professional organizations, including the

Association for Materials and Protection Performance (f/k/a the National Association of Corrosion Engineers) and the American Society for Testing and Materials. *See* Trial Tr. 92:21–93:2 (Apr. 11, 2025), [ECF Doc. 265]. He has worked on projects with Anamet Labs, a metallurgical-testing laboratory specializing in failure analysis and mechanical testing, and assisted Anamet Labs in its investigation of the causes of the June 2019 explosion at the Girard Point Refinery. *See* Trial Tr. 107:16–108:12 (Apr. 11, 2025). Mr. Carnahan offered expert opinion specifically on applicable American Society for Testing and Materials standards, changing methods for steel production in this country affecting the resiliency of piping systems used in hydrofluoric-acid environments, and the corrosive effects of hydrofluoric acid on steel containing high amounts of residual elements. The Court finds Mr. Carnahan to be a knowledgeable and direct witness, and his testimony to be most useful to the Court in deciding the issues before it. The Court gives maximum weight to his testimony.

Steve Arendt, a retired nuclear engineer, has consulted refinery operators in the areas of process safety and major accident prevention since 1978. *See* Trial Tr. 323:5–325:13 (Apr. 10, 2025). Having long served on working groups to develop and implement chemical accident prevention regulations issued by the U.S. Department of Labor Occupational Safety and Health Administration and the United States Environmental Protection Agency, Mr. Arendt provided the Court with expert testimony on such. *See* Trial Tr. 325:8–334:10 (Apr. 10, 2025). He also provided the Court with an excellent overview and explanation of the meaning of the engineering term of art, "RAGAGEP," a term he coined for "recognized and generally accepted good engineering practices" and its application in developing refinery safety protocols. *See* Trial Tr. 334:11–345:19 (Apr. 10, 2025). On those subjects, the Court finds Mr. Arendt to be a reliable, forthright witness and gives much weight to his testimony.

John Reynolds is a mechanical-integrity engineer with over fifty years' experience in refineries. During his career, he focused on inspection and quality assurance of pressure equipment and implemented inspection and mechanical-integrity standards "to mak[e] sure that the fluids from an oil refinery stay within the pipes." Trial Tr. 7:5–25 (Apr. 11, 2025). He has long served on task groups and subcommittees for the American Petroleum Institute and the American Society of Mechanical Engineers, taking lead roles for developing recognized and generally accepted good engineering practices. *See* Trial Tr. 8:1–6 (Apr. 11, 2025). Mr. Reynolds provided the Court with expert testimony on the American Petroleum Institute's recommended practices for mechanical inspection and corrosion-monitoring in hydrofluoric-acid alkylation units, as well as his opinions on whether the scope and frequency of piping inspections in the particular circuit housing the elbow joint at the Girard Point Refinery complied with recognized and generally accepted good engineering practices and American Petroleum Institute recommendations during relevant time periods. *See* Trial Tr. 8:7–16:10; 48:12–54:10 (Apr. 11, 2025). On those subjects, the Court finds Mr. Reynolds to be an earnest and reliable witness and gives much weight to his testimony.[5]

A. Optimal Materials of Construction for Refinery Piping Systems

***4** Alkylation units in refineries are used to convert alkenes to alkylate, a high-octane gasoline component, using a catalyst such as, in this case, hydrofluoric acid.[6] Because alkylation units use highly hazardous catalysts such as hydrofluoric acid, simply put, piping systems installed in such units must be designed to keep the fluids within the pipes. *See* Trial Tr. 53:15–54:22 (Apr. 7, 2025) (Rutkowski); Trial Tr. 7:20–25 (Apr. 11, 2025) (Carnahan). To be clear, corrosion within the piping systems will occur. But the rate and degree of that environmental degradation is affected both by the nature, temperature, and velocity of chemicals to which the piping systems are exposed, and the nature of the materials of which the piping systems are made. *See* Trial Tr. 96:13–97:24 (Apr. 11, 2025) (Carnahan).

1. Carbon steel has proven optimal for use in hydrofluoric-acid environments.

The American Society for Testing and Materials ("ASTM") is a long-standing organization of technical experts that sets standards for, among other things, materials of construction for refinery piping. *See* Trial Tr. 24:15–26:22 (Apr. 11, 2025) (Reynolds); Joint Ex. 171 [ECF Doc. 255]. In 1964, the ASTM adopted (and in 1965 revised) a specification numbered "A234" covering "factory made wrought carbon steel and ferritic alloy steel welding fittings for pressure piping." Joint Ex. 171S.[7] "Carbon steel" itself is an alloy comprised primarily of iron and carbon, with other elements present in very low quantities:

> The properties of plain carbon steels depend chiefly on their carbon content and microstructure.... [I]n addition to carbon these steels always contain some manganese, silicon, phosphorus and sulphur: minor amounts of other elements also may be present. Plain carbon steels, by American Iron and Steel Institute definition, may contain up to 1.65 per cent manganese, 0.60 per cent silicon and 0.60 per cent copper in addition to much smaller amounts of other elements.

Joint Ex. 157 (UNITED STATES STEEL, THE MAKING, SHAPING AND TREATING OF STEEL, 1117 (Harold E. McGannon ed., 9th ed. 1971), [ECF Doc. 253]; *see also* Trial Tr. 106:4–107:15 (Apr. 11, 2025) (Carnahan). ASTM A234 specifies permissible chemical compositions for various grades of carbon-steel elbow joints. *See* Joint Ex. 171S, § 4.1 & Table I. Table I of ASTM A234 labeled "Permissible Raw Materials and Marking of Butt-Welding Fittings" invokes ASTM A106 to define the chemical composition that is tolerated for carbon steel. In 1928, the ASTM adopted (and in 1968 revised) a specification numbered "A106" covering "Seamless Carbon-Steel Pipe for High-Temperature Service." *See* Joint Ex. 171B. Table I of the 1968 ASTM A106 is reproduced here:

TABLE I.—CHEMICAL REQUIREMENTS.

***5** Grade A Grade B Grade C Carbon, max, per cent..... ..... 0.25 0.3 0.35 Manganese, per cent..... ..... 0.27 to 0.93 0.29 to 0.29 to 1.06 1.06 Phosphorus, max, per cent..... ..... 0.048 0.048 0.048 Sulfur, max, per cent..... ..... 0.058 0.058 0.058 Silicon, min, per cent..... ..... 0.10 0.1 0.1

* Grade C is a special product supplied only on agreement between the manufacturer and the purchaser.

Thus, ASTM A234 (incorporating ASTM A106) clarifies what "carbon steel" is. Carbon steel has been used successfully in hydrofluoric-acid environments for decades. At temperatures below 150°F, carbon-steel piping is highly resistive to corrosion from the hydrofluoric acid running through it because the chemical reaction between carbon steel and hydrofluoric acid results in the formation of an iron-fluoride scale which protects piping from corrosion. *See* Trial Tr. 99:3–19 (Apr. 11, 2025) (Carnahan).

2. Changing methods for steel production affects the resiliency of piping systems used in hydrofluoric-acid environments.

But the introduction of other elements into carbon steel—whether purposefully or unintentionally through the manufacturing method—will alter the behavior and performance of carbon steel. *See* Stipulated Ex. 157 ("In addition to the predominant effects of carbon content and microstructure, **the properties of plain carbon steels may be modified by the effects of residual elements** other than the carbon, manganese, silicon, phosphorus and sulphur which are always present." (emphasis added)). So fittings composed of carbon steel plus other elements in significant quantities will perform in some environments, but will not endure in an environment using highly hazardous catalysts such as hydrofluoric acid because those alloys cannot chemically build the protective iron-fluoride scale needed to protect against corrosion. *See* Trial Tr. 99:20–23 (Apr. 11, 2025) (Carnahan) ("However, if there's more than a certain amount of certain elements, such as nickel and copper, then the steel is unable to form a protective iron-fluoride scale, and it's susceptible to general corrosion under conditions where non-copper, non-nickel-containing steels would be fine.").

Manufacturers have produced steel in the United States in several ways over the years:

Tabular or graphical material not displayable at this time.

See Joint Ex. 181, at 19 (Figure 20), [ECF Doc. 244].[8] In 1950, approximately 90% of U.S. steel was manufactured using the "open-hearth" process whereby a mixture of approximately 55–60% carbon-rich molten "pig iron" (an intermediate product created by smelting iron ore in a blast furnace) and 35–40% scrap metal is heated by combustion gas in an open-refractory hearth. *See* Trial Tr. 137:20–137:2 (Apr. 10, 2025) (Stevick); Trial Tr. 109:4–14 & 110:7–111:4 (Apr. 11, 2025) (Carnahan); Joint Ex. 181, at 17–22, Table 2, Table 3 & Figure 20. The open-hearth process is a reliable,

but slow, process known for producing high-purity steel. *See* Trial Tr. 109:4–14 & 110:7–111:4 (Apr. 11, 2025) (Carnahan). But by 1970, the percentage of steel produced in the United States using that method had decreased to approximately 37%. *See* Trial Tr. 110:7–111:4 (Apr. 11, 2025) (Carnahan); Joint Ex. 181, at 19–21, Table 2 & Figure 20. The use of the time-consuming open-hearth method for steel production continued to decline until 1993, when manufacturers ceased using that method entirely. *See* Joint Ex. 181, at 19–21, Table 2 & Figure 20.

***6** Starting in 1955, steel manufacturers produced steel using the "basic-oxygen" process, whereby a mixture of approximately 70–75% pig iron and 25–30% scrap metal is made into high-purity steel using an oxygen lance. *See* Trial Tr. 111:5–9 (Apr. 11, 2025) (Carnahan); Joint Ex. 181, at 19–21, Table 2 & Figure 20. By 1970, manufacturers using this quicker method produced approximately half of the steel manufactured in the United States. *See* Joint Ex. 181, at 19–21, Table 2 & Figure 20. Steel manufacturers used the basic-oxygen process to produce approximately 60% of this country's steel between 1975 and 1995; after that, however, use of the basic-oxygen process declined, giving way to use of electric furnaces to manufacture steel. *See* Joint Ex. 181, at 19–21, Table 2 & Figure 20.

Through 1965, use of electric furnaces to manufacture U.S. steel produced less than 10% of this country's steel, but their use significantly increased around 1975 and surpassed use of the basic-oxygen process in 2002, with 50% of U.S. steel being manufactured at that time by electric furnaces. *See* Trial Tr. 111:10–16 (Apr. 11, 2025) (Carnahan); Joint Ex. 181, at 17–22, Table 2 & Figure 20. By 2015, that percentage had climbed to approximately 63%. *See* Joint Ex. 181, at 17–22, Table 2 & Figure 20. The major difference between use of electric furnaces and all other methods for steelmaking is the fact that electric furnace steel is made from almost 100% scrap metal:

Table 3. Historical Scrap Usage by Steelmaking Process
Type of 1960 1970 1980 Furnace Scrap Pig Iron Scrap Pig Iron Scrap Pig Iron Open-Hearth 43 57 41.4 58.6 43.4 53.6 Basic Oxygen 26.9 73.1 30.1 69.9 27.9 72.1 Electric 96.4 3.6 98.1 1.9 97.9 2.1 Bessemer 12.1 87.9

Joint Ex. 181, at 22 (Table 3) (reflecting percentages of materials used in steelmaking process); Trial Tr. 114:9–11 (Apr. 11, 2025) (Carnahan). Scrap metal is known to be contaminated with residual elements including nickel and copper. *See* Trial Tr. 58:11–14 (Apr. 11, 2025) (Reynolds); Trial Tr. 111:10–16 (Apr. 11, 2025) (Carnahan). [9]

Relevant here, between 1969 and 1972, manufacturers produced approximately 83% of the country's steel using either the open-hearth process or the basic-oxygen process, each of which produces high-purity steel. *See* Joint Ex. 181, at 17–22 & Table 2. Steelmakers forged the remaining 17% of the country's steel during those four years using electric furnaces. *See id*.

B. Construction of Unit 433 at the Girard Point Refinery

In the early 1970s, Gulf Oil Company ("Gulf Oil") contracted with the Foster Wheeler Corporation ("FWC") for the construction of HF Alkylation Unit No. 433 ("Unit 433") at the Girard Point Refinery, part of an oil-refining complex owned by Gulf Oil in Philadelphia, Pennsylvania. *See* Trial Tr. Day 2, 8:11–10:10 (Apr. 8, 2025) (Rutkowski); Joint Pretrial Order, § G, ¶¶ 27, 36 & 46. [10] The contract between Gulf Oil and FWC delegated general contractor duties to FWC for process design, mechanical design, purchasing, expediting, inspection, field supervision, construction, and startup observation for Unit 433, to be performed per accepted engineering standards. *See* Joint Pretrial Order, § G, ¶ 47; Joint Ex. 14 [ECF Doc. 241]. FWC specified both "ASTM A234 WPB" elbow joints as well as YOLOY brand-named alloy steel elbow joints for use in the Girard Point Refinery, depending on the application (*i.e.*, process conditions and the location at which a particular elbow joint would be incorporated into a specific piping system). *See* Joint Pretrial Order, § G, ¶ 38. [11]

***7** During the construction of Unit 433, FWC sourced materials, including piping and elbow joints (a/k/a "fittings") from a variety of vendors, subcontractors, and fabricators, including B&W. *See* Joint Pretrial Order, § G, ¶¶ 36–39 & 46–47. On August 22, 1972, FWC issued specifications for materials to be used for the piping system for the hydrofluoric-acid alkylation Unit 433. *See* Stipulated Ex. 125, [ECF Docs. 243 & 251]. FWC's specification for "Piping Materials" generally called for "Carbon Steel, Monel Trim Valves," and specifically required fittings with diameters sized between 1½ inches to 24 inches to comply with "ASTM A234, Grade WPB, weight to match pipe." *See* Stipulated Ex. 125; Joint Pretrial Order, § G, ¶ 40–41. Compliance with an "ASTM A234, Grade WPB" specification would require vendors to supply elbow joints comprised of carbon steel,

grade B—meaning the chemical make-up of elbow joints would be limited to the percentages of elements found in ASTM A106 (shown in Table I above). *See* Joint Exs. 171B & 171S, § 4.1 & Table I; Joint Pretrial Order, § G, ¶ 40–41; Trial Tr. 108:13–24 (Apr. 11, 2025) (Carnahan). [12]

In July 1972, FWC contracted with Southwest Fabricating & Welding Co. to fabricate a pipe spool for installation in the N-01 Circuit of Unit 433. *See* Stipulated Ex. 18, [ECF Docs. 241 & 251]. The pipe spool was comprised of four parts: two 8-inch, 90-degree standard-weight long-radius elbows and two 23'3" seamless pipes. *See* Trial Tr. 99:24–100:7 (Apr. 11, 2025) (Carnahan); Stipulated Exs. 18 & 51, [ECF Docs. 241 & 251]. The contract specified that the elbows ("T-1 Elbow" and "T-2 Elbow") were to be made of "A234 B" material, or carbon steel, grade B. *See* Stipulated Ex. 18; Joint Exs. 171B & 171S, § 4.1 & Table I. Likewise, the contract specified that the seamless pipes ("T-3 Pipe" and "T-4 Pipe") would be made of "A106 ... GR B" material, or carbon steel, grade B. *See* Stipulated Ex. 18; Joint Exs. 171B & 171S, § 4.1 & Table I. At the time of installation in the N-01 Circuit of Unit 433, no cause existed to believe that the T-1 Elbow was made of anything other than A234 Grade B carbon steel.

C. Ownership of the Girard Point Refinery (1970 to Date)

In June 1985, Gulf Oil merged with Chevron Corporation and, in 1994, Chevron sold the GP Refinery to Sunoco, Inc. ("Sunoco"). *See* Joint Pretrial Order § G, ¶¶ 28 & 29. Sunoco remained the sole owner of the GP Refinery until June 2012, when it formed Philadelphia Solutions, LLC ("PES LLC") with a private equity fund and a co-investment fund and contributed the GP Refinery to PES LLC. *See* Joint Pretrial Order § G, ¶ 30. [13] PES LLC operated the GP Refinery through its wholly owned subsidiary, PESRM, formed for that purpose. *See id*. On August 14, 2012, Sunoco (n/k/a Sunoco (R&M), LLC), the Commonwealth of Pennsylvania Department of Environmental Protection, and PESRM entered into a Consent Order and Agreement that transferred the GP Refinery to PESRM pursuant to a Special Warranty Deed dated September 7, 2012. *See* Joint Pretrial Order § G, ¶ 31. A number of Sunoco employees became PESRM employees when Sunoco contributed the Girard Point Refinery to the joint venture in 2012. *See* Joint Pretrial Order § G, ¶ 45. Sunoco's on-site inspection and monitoring records were transferred to PESRM in or about 2012. *See id*.

D. Best Practices in Inspection and Maintenance of Existing Piping Systems in Hydrofluoric-Acid Environments

***8** Operators maintaining dynamic systems like hydrofluoric-acid alkylation units must adhere to applicable safety regulations, such as the Occupational Health and Safety Administration's Process Safety Management ("OSHA PSM") standards and the Environmental Protection Agency's Risk Management Program ("EPA RMP") norms promulgated in the 1990s. *See* Trial Tr. 7:27–32; 14:5–24; 15:26–16:3; 17:10–18:24 (Apr. 8, 2025) (Rutkowski); Trial Tr. 323:5–332:13 (April 10, 2025) (Arendt). Both the OSHA PSM and the EPA RMP standards address fourteen elements or focus areas, one being "mechanical integrity." Trial Tr. 332:14–334:10 (April 10, 2025) (Arendt). Because of the complexity, diversity, and highly technical nature of this specialized field, imposing "one-size-fits-all" rules on the industry is not effective and will not contribute to achieving the industry's "no accidents" goal. *See* Trial Tr. 325:14–326:17 (Apr. 10, 2025) (Arendt). This is especially true regarding mechanical-integrity standards. *See* Trial Tr. 332:24–333:3 (Apr. 10, 2025) (Arendt). Thus, one finds that the mechanical-integrity provisions in OSHA PSM and EPA RMP standards rely heavily on "Recognized and Generally Accepted Good Engineering Practices" or "RAGAGEP," particularly as they relate to inspection and testing of existing piping systems. *See* Trial Tr. 336:25–337:16; 366:20–367:4 (Apr. 10, 2025) (Arendt). As explained by Steve Arendt:

> In the early part of the rulemaking in '88, '89, OSHA had a phrase that they used that was—essentially said 'comply with codes and standards,' and that was the phrase they used; and in discussions with all of the stakeholders, they realized that that wouldn't make sense because, if you included that [requirement], every time a code and standard got revised, you would have to revise their rule. And so they considered and accepted the language "recognized and generally accepted engineering practices" and talked about a framework for what source material could be included as RAGAGEP.
>
> And so like a lot of things, OSHA might put out terminology like that, but not necessarily give a lot of guidance immediately about what it meant and how to implement it, and so it was left up to industry or others to decide what it meant and how to implement it over time based on experience.
>
> ....

> So, again, it took time for new concepts to roll out for people to figure out whether they were valuable in a technical sense and for them to do it. So over time people would trade information in conferences and papers and through experiences and then you would judge ... whether —some of the source material was judged to be not only recognized, but it was also generally accepted by the constituent facilities that would—that might judge it to be a part of their RAGAREP.
>
> ....
>
> So the term recognize[d] or generally accepted good ... engineering practices .... "[G]ood" meant not the absolute edge, the leading-edge idea that somebody just thought ..., but it was "good" almost in the concept of what was "good enough," and that was subject to subjectivity in the eye of the beholder, but it had to be "good."
>
> So you combine all of those words, it gives you ... a framework for trying to think about what ... source material ... would be relevant to your facility and your industry, what you could choose to be a RAGAREP.

Trial Tr. 337:25–342:8 (Apr. 10, 2025) (Arendt).

Alkylation unit operators routinely turn to source material generated by trade organizations such as the American Petroleum Institute ("API") or the organization formerly known as the National Association of Corrosion Engineers ("NACE") to determine the consensus on RAGAGEP and develop and implement best practices in their own facilities. *See* Trial Tr. 52:9–16 (Apr. 8, 2025) (Rutkowski); Trial Tr. 342:9–344:21 (Apr. 10, 2025) (Arendt).[14] The RAGAGEP for inspection of refinery piping systems relies primarily on API Recommended Practice 570. *See* Trial Tr. 48:12–50:20 (Apr. 11, 2025) (Reynolds).

1. The American Petroleum Institutes' recommendations on piping inspections in hydrofluoric-acid environments

The API is a long-standing national trade organization in the energy sector that, among other things, has set industry standards and recommended practices to promote safe operations; relevant here, the API has issued standards, recommendations, and certifications for piping inspection, safe operation of hydrofluoric-acid alkylation units, and material verification for alloy piping systems. *See* Trial Tr. 47:13–25 (Apr. 7, 2025) (Rutkowski); Stipulated Ex. 69, [ECF Docs. 251 & 252]; Joint Exs. 153 & 176, [ECF Doc. 256]. In January 1990, the API promulgated Recommended Practice 570 addressing "Management of Process Hazards," followed shortly by a background paper entitled "The Use of Hydrofluoric Acid in the Petroleum Refining Alkylation Process." *See* Joint Ex. 153A. A second edition of API 570 entitled "Piping Inspection Code" and specifically addressing "Inspection, Repair, Alteration, and Rerating of In-service Piping Systems" was issued in 1998. *See* Stipulated Ex. 69.

***9** API 570 acknowledged that "[d]ifferent types of inspection and surveillance are appropriate depending on the circumstances and the piping system," and recommended thickness-measurement inspection, external visual inspection, vibrating-piping and line-movement surveillance, and supplemental inspections, scheduled as appropriate, to include ultrasonics and/or radiography for detecting localized corrosion of piping. *Id*. § 5.4; *see also* Trial Tr. 12:23–13:15 (Reynolds) (discussing "nondestructive examination" methods to monitor piping systems for corrosion). Commonly used, thickness-measurement inspections are performed by facility inspectors "to determine the internal condition and remaining thickness of the piping components." Stipulated Ex. 69, § 5.4.2.

To facilitate thickness-measurement inspections, API 570 recommended establishing thickness-measurement locations or "TMLs" which are "specific areas along the piping circuit where inspections are to be made," to be selected after "consider[ing] the potential for localized corrosion and service-specific corrosion." *Id*. § 5.5.1.[15] As API 570 explains:

> The minimum thickness at each TML can be located by ultrasonic scanning or radiography. Electromagnetic techniques also can be used to identify thin areas that may then be measured by ultrasonics or radiography. When accomplished with ultrasonics, scanning consists of taking several thickness measurements at the TML searching for localized thinning. The thinnest reading or an average of several measurement readings taken within the area of a test point shall be recorded and used to calculate

> corrosion rates, remaining lift, and the next inspection date....

Id. § 5.5.2. "The frequency and extent of inspection on piping circuits depend on the forms of degradation that can affect the piping and consequence of a piping failure." *Id*. § 6.1. Thus, "[p]iping circuits with high potential consequences if failure should occur and those subject to higher corrosion rates or localized corrosion will normally have more TMLs and be monitored more frequently." *Id*. § 5.5.2. API 570 required intervals between piping inspections to be established and maintained in light of:

> a. Corrosion rate and remaining life calculations.
>
> b. Piping service classification.
>
> c. Applicable jurisdictional requirements.
>
> d. Judgment of the inspector, the piping engineer, the piping engineer supervisor, or a corrosion specialist, based on operating conditions, previous inspection history, current inspection results, and conditions that may warrant supplemental inspections ....

Id. § 6.3.

Implementing an inspection program using representative samples from various locations is the "primary way" to determine the likely corrosion rate of a piping circuit. Trial Tr. 14:3–16 (Apr. 11, 2025) (Reynolds). As explained by Mr. Reynolds:

> Once we know what a system is and it's all one type of material construction, then we typically put [T]MLs in various locations, sometimes on piping straight runs, sometimes on fittings, sometimes on what we call Ts. There are lots of different components in a piping system, and so we will spread our [T]MLs out over the various components in order to monitor the system.
>
> ....
>
> [I]n order to use [T]MLs properly, we determine, first of all, what the material of construction is for the entire system and break the system down into various segments and put our [T]MLs in a ... place that we think will monitor the corrosion ... in each segment of piping or each pressure vessel.
>
> [T]he materials of construction are very important .... like it is codified in API 570, we disperse [T]MLs over the system. [B]ut we don't put a [T]ML on every inch of the pipe, every fitting, every T. [N]obody does that. [W]e get a very good representative sample ... to know what the general corrosion rate is for the entire system.

***10** Trial Tr. 14:6–15:3 (Apr. 11, 2025) (Reynolds).

2. The 2003 NACE Report highlighted concerns regarding residual elements contained in hydrofluoric acid alkylation units' piping systems.

In 1999, a group of eight petroleum companies, including Sunoco, Conoco Inc., and Phillips Petroleum Company, organized a group of engineers and funded a project labeled as a "Petroleum Environmental Research Forum" or "PERF" to research and develop (i) test and corrosion rate measurement procedures for evaluating material in hydrofluoric-acid environments as well as (ii) a carbon-steel materials specification with respect to the levels of residual elements and carbon in steels for hydrofluoric-alkylation equipment. *See* Joint Ex. 165, at 1, [ECF Doc. 255]; *see also* Trial Tr. 78:10–80:23 (Apr. 7, 2025) (Rutkowski). NACE published the PERF's findings in 2003 (the "2003 NACE Report"). *See* Joint Ex. 165, at 1. [16] The PERF identified the issue facing the industry in the late 1990s/early 2000s:

> Operation of hydrofluoric (HF) acid alkylation units using primarily carbon steel construction material has been the norm for over 60 years. There have been few problems associated with the use of this material for many years. There have been problems reported **within the last 10 years** where a non-uniform corrosion phenomenon occurs leading to plant incidents. Residual elements (RE), Cr, Ni and Cu in carbon steel were implicated as a potential cause for this problem. There were inconsistencies though claimed by others or within differing parts of the plant about this RE effect. Galvanic effects were reported that might negate

> the possible beneficial use of low RE materials.

Id. at 1 (emphasis added).[17] The 2003 NACE Report's conclusions identified two causes of nonuniform corrosion in hydrofluoric-acid environments: (1) the chemical composition of the hydrofluoric-acid solution flowing through piping systems and (2) the chemical composition of the pipes themselves. *See id*. at 9–10.[18] Regarding the second cause, the corrosive effect of residual elements in steel pipes in hydrofluoric-acid environments, the PERF concluded:

- Combinations of copper and nickel have the most detrimental effect on corrosion of steels in "concentrated" HF. Carbon appears to be beneficial, except in combination with high nickel content. Chromium appears to be neutral or even beneficial at higher carbon levels, but may become slightly detrimental as the carbon concentration is reduced.

- Overall, the results support a maximum residual element (RE) criterion (where the RE content is based on the wt % summation of nickel, chromium and copper content), although a reduction from the industry guideline value of 0.2% to 0.15% would be beneficial if this is practical in terms of materials supply.

- **There is a strong effect of carbon, particularly in low RE materials. This could explain the greater incidence of failures in recent years due to use of modern low carbon steels.** It could also explain some anomalous results in relation to the 0.2% alloying criterion. **From this work a carbon concentration of 0.18% or greater is recommended.**

***11** - From the above conclusions it is considered that if the minimum carbon recommendation is met for a given material, then chromium can be excluded from the maximum RE requirement. However, if the minimum carbon recommendation is not met then chromium should be included in calculating the total RE value.

  - For base metals the optimum specification would be C >0.18 wt% and Cu + Ni + Cr < 0.15 wt%.

  - For weld metals the specification should be (where C levels are lower) Cu + Ni + Cr < 0.15 wt%

Id. at 9 (emphasis added).

The concerns contained in the 2003 NACE Report regarding the chemical composition of piping systems installed post-1990 permeated the industry. *See* Trial Tr. 82:8–13; 102:13–105:17 (Apr. 7, 2025) (Rutkowski). Even as early as May 1997, Anthony Rutkowski, corrosion engineer and piping inspector in Unit 433, notified his superiors at Sunoco of the investigation results from an incident that occurred in an alkylation unit at a competitor's refinery, "suggest[ing] the problem is related to the total chrome, nickel and copper content" of failed piping in that facility. Stipulated Ex. 33, at 12–19, [ECF Doc. 241 & 251]. Rutkowski wrote in 1997:

> ***12** .... Although this theory is not conclusive, it does appear to make it worth the effort to special order carbon steel equipment in HF service.
>
> I have also just learned that the Citgo, Corpus Christi Refinery had the same line fail about two weeks ago. They are still in the process of the investigation and could not provide any details yet. They did tell me they have revised their pipe specification for all HF service to limit the total CrNiCu to <.2% in carbon steel material.
>
> I think a little more research should be done before we do a wholesale revision, but it is definitely the thing to do in the Feed system.

Id. at 12.

In November 2003, ConocoPhillips, which designed Unit 433, sent updated "Process Design Specifications for HF Alkylation" to its licensee, Sunoco. *See* Stipulated Ex. 24, at 7, [ECF Doc. 241 & 251]; Trial Tr. 56:9–57:8 (Apr. 11, 2025) (Reynolds). Relevant here, those process-design specifications lowered the recommended maximum percentages of residual elements copper and nickel in carbon steel used in piping systems to 0.15%. *See* Stipulated Ex. 24, at 3 & 9. ConocoPhillips intended the updated process design specifications to be "of benefit to both those constructing new Alkylation units and those making repairs on existing Phillips HF Alkylation units," with the caveat:

> As with earlier revisions to these specifications, the changes made should not suggest that the specifications under which older HF Alkylation units were originally constructed were wrong. The revisions

> should simply serve to improve the quality of construction and repairs.

Id. at 7.

3. The scope and frequency of piping inspections in the N-01 Circuit complied with RAGAGEP and API recommendations.

Despite raising awareness regarding the negative impact of residual elements on the integrity and performance of piping systems installed in hydrofluoric-acid alkylation units, the 2003 NACE Report made no recommendations regarding the frequency of inspections or replacement of long-existing piping systems. The advice offered in the 2003 NACE Report was "wait and see":

> There is still uncertainty as to the possible impact of contaminants found in **operating plants** that may impact the corrosivity of the [hydrofluoric acid]. This may be a wild card that may also impact the response of carbon steel in some plants while not in others. A proposal for further work in this area is being offered for a second phase study in better understanding HF acid corrosion to carbon steel.

See Joint Ex. 165, at 10 (emphasis added).

The API also updated its Recommended Practice 571 in 1999, expanding on the industry's residual-element concerns specific to hydrofluoric-acid alkylation. *See* Joint Ex. 153A. According to the 1999 API 571, "[t]he principal materials of construction for HF alkylation units are carbon steel and the nickel-copper Alloy 400 (e.g., Monel 400)" while "[o]ther materials, such as 70-30 copper-nickel and nickel-base Alloys C-276 and B-2 (e.g., Hastelloy C-276 and B-2), have been used in selected applications." *Id*. § 3.2. Describing the strength of installing carbon-steel piping in hydrofluoric-acid alkylation units, the 1999 API 571 stated:

> ***13** Corrosion of carbon steel by HF is a function of water content, temperature, velocity, and contaminants. Carbon steel has demonstrated satisfactory resistance to concentrated HF up to approximately 150°F. This temperature should not be considered as a limit. Actual experience in alkylation units varies, some indicating unsuitable performance at lower temperatures and some indicating suitable performance up to 180–200°F, depending on the specific exposure conditions. Carbon steel relies to a large extent on the presence of a protective iron fluoride film for its HF corrosion resistance.

Id. § 3.2.1. The 1999 API 571 cautioned however:

> Loss of this protective [iron fluoride] film can result in accelerated corrosion rates. Welding slag is rapidly attacked by HF. It has also been reported that certain residual elements (Cr, Ni, Cu) in carbon steel may contribute to accelerated HF corrosion (See NACE Publication 5A171 for further details).

Id. Like the 2003 NACE Report, the 1999 API 571 did not make recommendations regarding the scope or frequency of inspections of long-existing piping systems, but deferred to API 570 for best practices regarding inspections and inspection intervals for piping and welded components in hydrofluoric-acid units. *See id*. § 3.4.3; *see also supra* Part I.D.1 (discussing API 570). [19] Later updates to API 571 also incorporated API 570 for inspection of commissioned hydrofluoric-acid unit equipment. *See* Joint Exs. 153B, § 3.4.3 (2007 API 571) & 153C, § 3.4.3 (2013 API 571), [ECF Doc. 253].

Not until API 571's 2021 update did the API make a specific recommendation for operators to inspect 100% of all individual component parts installed in hydrofluoric-acid environments at least once:

> Special emphasis inspection programs to evaluate the condition of all individual components and welds in piping circuits have been conducted by several owner-operators. Most of these programs have identified locations with significant corrosion rate variations and localized thinning of components, welds, and weld HAZs requiring repairs or replacement. Refer to 6.2.2.1 for additional information regarding considerations for [residual elements] in carbon steel.
>
> **A special emphasis inspection program shall be developed and implemented at least once to inspect all individual carbon steel piping components and welds to identify areas of accelerated corrosion.** Aspects of the program shall include:
>
> a) the program shall be completed in all HF corrosion zones identified in Annex G, [and]
>
> b) the program shall be prioritized by corrosion zone with phase change HF and dilute HF in water corrosion zones given priority based on known corrosion potential. After the initial inspection of all carbon steel components, the results should be used to adjust the ongoing inspection and repair plans and evaluate the frequency and/or need to inspect each component.
>
> This special emphasis inspection program shall determine the wall thickness of individual components and welds throughout the unit. The program typically consists of:
>
> 1) identification of all the welds (and thus piping components);
>
> 2) the use of the radiographic and ultrasonic techniques to determine the thickness of the components on each side of the weld as well as the thickness at the weld.
>
> After the initial inspection, the [T]MLs for each piping circuit should include [T]MLs placed on components that have lower wall thicknesses and/or higher corrosion rates. Successive inspection programs can be implemented to track the findings, to address the impact of operational changes, or to address industry learnings.
>
> ***14** Some owner-operators have included [positive material identification] for [residual elements] as part of their special emphasis inspection program.

Joint Ex. 153D, § 6.4.2.3.3, [ECF Doc. 253] (emphasis added). The impetus for the addition to the 2021 API 571 inspection recommendation was based, in part, on the June 2019 failure incident at the Girard Point Refinery. Mr. Kemeny, who played an integral role in the investigation of the explosion in Unit 433 and was very involved in the discussion group charged with updating the 2021 API 571, explained:

> In fact, we, as part of the investigation, we ... found out what occurred with having a fitting in the line that we did not expect, [and] we actually sent out an industry alert that told the industry of our lessons learned and our experience and that ... people need to do some sort of retro examination of this carbon steel components in HF service.
>
> ....
>
> [O]ur finding, as the investigation lead of that incident, was we found a fitting that unfortunately we did not inspect .... It was not part of our condition monitoring locations, but it ended up being of a different metallurgy than the other carbon steel components in that line. And instead of having a very low corrosion rate over 40 years, it was significantly higher than the other existing components, and we believe that that was the root cause for that failure.

Trial Tr. 159:21–160:16 (Apr. 8, 2025) (Kemeny).

From the start of Unit 433's operations, in accordance with RAGAGEP, Chevron and Sunoco developed and implemented piping-inspection procedures that included a formula for assigning TMLs throughout Unit 433 based on factors such as process flow and materials of construction. *See* Trial Tr. 29:25–30:20 (Apr. 8, 2025) (Rutkowski); Trial Tr. 161:9–162:19 (Apr. 8, 2025) (Kemeny). As to inspection of the N-01 Circuit specifically, Mr. Kemeny explained:

> The refinery followed practices that were existent prior to [the] 2021 change to the [API] 751 to place condition monitoring locations across a circuit through some methodology. So they followed a methodology.
>
> The inspection group was the responsible party for that, and the methodology included bleeder locations, elbows, tees, but it certainly didn't require every single component.

> But there was a formula that they used to come up with the number of components that would be tested. And I, after going through as the investigation team leader, and they showed us their methodology and informed us, and I would admit that I did not know this prior [to] being the team leader, that they actually used a very conservative approach and more than doubled the ... expected number of [T]MLs for that location.

Trial Tr. 161:13–162:5 (Apr. 8, 2025) (Kemeny). The inspection procedures implemented by the operators of the Girard Point Refinery established approximately 55 TMLs on the N-01 Circuit at the time of its construction and increased that number over the years to 126 TMLs, "considerably above what was needed for a circuit that was, in general, corroding at very low rates." Trial Tr. 51:6–52:9 (Apr. 11, 2025) (Reynolds); *see also* Trial Tr. 54:2–10 (Apr. 11, 2025) (Reynolds) ("[The refinery's [T]ML program for inspection of the N-01 Circuit complied with RAGAGEP and] it actually exceeded the nominal amount of [T]MLs necessary because ... they were concerned about what they were hearing about corrosion rates, and so they were increasing the number of [T]MLs, and even though they increased the number of [T]MLs—they more than doubled them—they did not find any difference in the corrosion rates being recorded."); Joint Exs. 131A & 131B, [ECF Doc. 287].

***15** The T-1 Elbow never served as a TML, but the T-2 Elbow welded to it did. *See* Trial Tr. 147:9–148:2 (Apr. 8, 2025) (Kemeny); Joint Ex. 131A; *see also* Trial Tr. 71:19–72:2 (Apr. 11, 2025) (Reynolds). As of 2001, Unit 433's TML reports revealed no cause for concern regarding thinning or corrosion in the piping system in the N-01 Circuit. *See* Trial Tr. 31:16–25 (Apr. 8, 2025) (Rutkowski); Trial Tr. 151:13–153:20 (Apr. 8, 2025) (Kemeny).

E. B&W's Bankruptcy Case and Confirmed Plan of Reorganization

On February 22, 2000, B&W and three subsidiaries filed chapter 11 bankruptcy petitions in this Court. *See* Joint Pretrial Order § G, ¶ 1; [No. 00-10992, ECF Doc. 1].[20] At that time, B&W and its subsidiaries were "leading suppliers of fossil fuel fired steam generating systems, replacement commercial nuclear steam generators, environment equipment and related components and services to its customers around the world." [No. 00-10992, ECF Doc. 3147, § VII.A]. B&W and its affiliates sought chapter 11 bankruptcy relief primarily to deal with asbestos-related personal-liability claims. [No. 00-10992, ECF Doc. 6913, § II.A (Summary Disclosure Statement) & ECF Doc. 6849 (approving adequacy of disclosure statement)].

Sunoco received actual notice of B&W's bankruptcy filing, as well as the January 15, 2003, bar date for filing proofs of claim, and timely filed a proof of claim against the estate. *See* Joint Pretrial Order § G, ¶¶ 2, 5–7; [No. 00-10992, ECF Doc. 474]. Sunoco's proof of claim asserted a non-asbestos-related claim pertaining to a facility unrelated to the Girard Point Refinery. *See* Joint Pretrial Order § G, ¶¶ 7, 9 & 49. Gulf Oil and Chevron also received notice of B&W's bankruptcy filing. *See* Joint Pretrial Order § G, ¶¶ 10–12; [No. 00-10992, ECF Docs. 5227 & 6462]. On May 15, 2002, this Court entered an Order denying B&W's motion to extend the exclusive period within which to gain acceptances to a plan of reorganization. [No. 00-10992, ECF Doc. 3173]. Ultimately, on December 22, 2005, after prolonged litigation and mediation, B&W and the other jointly administered debtors, together with the official Asbestos Claimants' Committee, the Court-appointed Future Asbestos-Related Claimants' Representative, and B&W's parent company, McDermott International, Inc., filed a *Joint Plan of Reorganization as of September 28, 2005, as Amended Through November 10, 2005 (with Technical Modifications Through December 22, 2005)* (the "Joint Plan"). *See* Joint Pretrial Order § G, ¶ 14; [No. 00-10992, ECF Doc. 7003]. Sunoco had notice of the confirmation process and an opportunity to object to confirmation of the Joint Plan and did not do so. *See* Joint Pretrial Order § G, ¶ 13. The District Court confirmed the Joint Plan on January 17, 2006, and the Joint Plan became effective on February 22, 2006. *See* Joint Pretrial Order § G, ¶¶ 15–16; [No. 00-10992, ECF Docs. 7053 & 7134].

***16** The Joint Plan created the Asbestos PI Trust, funded with assets of B&W, its debtor-affiliates, as well as certain non-debtor affiliates; under the Joint Plan, the Asbestos PI Trust served as the sole recourse for payment of current and future asbestos-related claims against B&W. [No. 00-10992, ECF Doc. 6913, § II.B].[21] All other non-asbestos-related claims, including Class 5 General Unsecured Claims, would be resolved directly by the Reorganized Debtors—in other words, those claims would be paid *pro rata* as directed in the Joint Plan from proceeds generated by Reorganized B&W's continuing operations. [No. 00-10992, ECF Doc. 6913, §§ II.B & III.B; ECF Doc. 7003, § 3.2].

With few exceptions not germane here, the Joint Plan discharges all prepetition claims against the Reorganized B&W and imposes a permanent statutory injunction

prohibiting creditors from asserting those claims going forward:

> Except as otherwise provided in this Plan, **the rights afforded in this Plan and the treatment of all Claims and Equity Interests herein shall be in exchange for and in complete satisfaction, discharge, and release of all Claims and Equity Interests of any nature whatsoever, including any interest accrued thereon from and after the Petition Date, against the Debtors and the Debtors in Possession, or their assets, properties, or interests in property. Except as otherwise provided herein, on the Effective Date, all Claims against and Equity Interests in the Debtors and the Debtors in Possession (including any based on acts or omissions that constituted or may have constituted ordinary or gross negligence or reckless, willful, or wanton misconduct of any of the Debtors, or any conduct for which any of the Debtors may be deemed to have strict liability under any applicable law) shall be satisfied, discharged, and released in full.** The Reorganized Debtors shall not be responsible for any obligations of the Debtors or the Debtors in Possession except (1) those expressly assumed by the Reorganized Debtors pursuant to this Plan and (2) those claims that pass through this Plan unimpaired pursuant to Section 3.2.8 herein. **All Entities shall be precluded and forever barred from asserting against the Debtors, the Reorganized Debtors, the Asbestos Protected Parties, Settling Asbestos Insurance Entities, or their assets, properties, or interests in property any other or further Claims or Demands based upon any act or omission, transaction, or other activity, event, or occurrence of any kind or nature that occurred prior to the Effective Date, whether or not the facts of or legal bases therefor were known or existed prior to the Effective Date, except as expressly provided in this Plan.**

[No. 00-10992, ECF Doc. 7003, § 11.2]; *see also* Joint Pretrial Order § G, ¶ 20. [22] "Claim" is defined in the confirmed Joint Plan as

> a right to: (a) payment from any of the Debtors, whether or not such right is reduced to judgment, liquidated, unliquidated, fixed, contingent, matured, unmatured, disputed, undisputed, legal, equitable, secured, or unsecured; or (b) an equitable remedy for breach of performance if such breach gives rise to a right to payment from the Debtors, whether or not such right to an equitable remedy is reduced to judgment, fixed, **contingent**, matured, unmatured, disputed, undisputed, secured, or unsecured.

***17** [No. 00-10092, ECF Doc. 7003, § 1.1.51 (emphasis added)]. "Contingent Claim" is defined in the confirmed Joint Plan as

> Any Claim, the liability for which attaches or is dependent upon the occurrence or happening of, or is triggered by, an event, which event has not yet occurred, happened, or been triggered, as of the date on which such Claim is sought to be estimated or an objection to such Claim is filed, whether or not such event is within the actual or presumed contemplation of the holder of such Claim and whether

> or not a relationship between the holder of such Claim and the Debtor now or hereafter exists or previously existed.

Id. § 1.1.56. "Demand" as defined in the confirmed Joint Plan means

> a demand for payment, present or future, that (i) was not a Claim during the Chapter 11 Cases; (ii) arises out of the same or similar conduct or events that gave rise to the Claims addressed by the Asbestos PI Channeling Injunction or the Asbestos PD Channeling Injunction; and (iii) pursuant to this Plan is to be paid by the Asbestos PI Trust (or the Reorganized Debtors in the case of Demands involving Asbestos PD Claims). Notwithstanding the foregoing, nothing in this Plan concedes the existence of Demands for Asbestos PD Claims as a matter of law.

Id. § 1.1.63.

F. The June 2019 Explosion at the Gerard Point Refinery and Investigation

B&W manufactured the T-1 Elbow that was installed as a component part of the N-01 Circuit in Unit 433 of the Girard Point Refinery in the 1970s. *See* Joint Pretrial Order § G, ¶ 39. On June 21, 2019, the T-1 Elbow allegedly failed and caused an explosion at the refinery, resulting in considerable property damage. *See* Joint Pretrial Order § G, ¶ 32. The United States Chemical Safety Board retained Anamet Labs, a metallurgical-testing laboratory specializing in failure analysis and mechanical testing, to investigate the causes of the explosion. *See* Trial Tr. 102:18–103:2 (Apr. 11, 2025) (Carnahan); Stipulated Ex. 51. Anamet Labs issued a report detailing its findings after examining the T-1 and T-2 Elbows, the T-3 and T-4 Pipes, and the welds that joined the T-1 to T-2, T-2 to T-3, and T-1 to T-4. *See* Stipulated Ex. 51, §§ 1.1–2.2. At the time of the explosion, all four of those component parts had been in service since installation in the early 1970s. *See* Trial Tr. 103:7–104:11 (Apr. 11, 2025) (Carnahan). Anamet Labs measured the chemical composition of all four component parts and found that the T-2 Elbow, the T-3 Pipe, and the T-4 Pipe "met the chemical compositions requirements of the current versions of ASTM A234, and ASTM A106 in addition to the guidelines on residual elements in API 571." Stipulated Ex. 51, § 1.1. As to the chemical composition of the T-1 Elbow, Anamet Labs found:

> Accelerated corrosion of the ruptured elbow T1 conformed to industry experience with carbon steel components that contain elevated levels of the residual elements nickel and copper as described in API 571 and API 751. The chemical composition of the ruptured elbow T1 met the chemical composition requirements of ASTM A234 in 1965, but did not meet the requirements of the 2015 version of the standard or the guidelines regarding residual elements in API 571 because the nickel and copper concentrations were greater than allowed.

***18** *Id*.

The PES Entities, led by Mr. Kemeny, also performed their own internal investigation and identified a "root cause" of the explosion to be: "Elbow Failure—Incorrect metallurgy of elbow when the Unit was first build in 1973, in this cold Hydrocarbon/ HF Acid service system, counter to the original design pipe specification at time of Unit construction." Stipulated Ex. 71, at 4, [ECF Doc. 241 & 251]; *see also* Trial Tr. 163:21–165:25 (Apr. 8, 2025) (Kemeny). Citing Anamet Labs' metallurgical data on the T-1 through T-4 parts as well as the welds connecting them, the PES Entities' internal investigation found that the T-1 Elbow contained levels of residual elements copper and nickel over 50 times higher than the T-2 Elbow, T-3 Pipe, and T-4 Pipe, each of which charted very low levels of those residual elements. *See* Stipulated Ex. 71, at 9; Trial Tr. 166:1–167:3 (Apr. 8, 2025) (Kemeny). [23]

In other words, in 1972, Southwest Fabricating & Welding Co. fabricated the pipe spool comprised of the T-1 and T-2

Elbows and the T-3 and T-4 Pipes for installation in the N-01 Circuit of Unit 433. *See* Trial Tr. 70:3–71:19 (Apr. 10, 2025) (Stevick); Stipulated Ex. 18. Each of the component parts surrounding the T-1 Elbow were made of 1965 ASTM 234 carbon steel (incorporating 1968 A106 specifications). The T-1 Elbow was not. [24]

G. The Pennsylvania State Court Action and the Adversary Proceeding

On February 26, 2021, the PES Entities filed a lawsuit in a Pennsylvania state court against the Reorganized B&W and affiliates, alleging that B&W's T-1 Elbow installed in Unit 433 failed and caused the June 2019 explosion; the PES Entities asserted negligence and products-liability claims against the defendants. *See* Joint Pretrial Order § G, ¶ 33. On April 28, 2021, the Reorganized B&W obtained leave of this Court to reopen B&W's bankruptcy case and initiated the above-captioned adversary proceeding, seeking a declaratory judgment that the confirmed Joint Plan discharged the claims alleged by the PES Entities in the Pennsylvania state court action and enjoined the PES Entities from pursuing those claims. *See* Joint Pretrial Order § G, ¶ 35; [ECF Doc. 1 & No. 00-10992, ECF Doc. 7865]. Since then, the proceedings in the Pennsylvania state court action have been stayed. After the PES Entities filed an Answer to the Complaint, [ECF Doc. 16], the parties engaged in extensive discovery and motion practice before trial.

PART II: CONCLUSIONS OF LAW

A. Burden of Proof

***19** "It is a fundamental rule that the burden of proof in its primary sense rests upon the party who, as determined by the pleadings, asserts the affirmative of an issue." *Rex-Tech Int'l, LLC v. Rollings (In re Rollings)*, 451 F. App'x 340, 346 (5th Cir. 2011) (internal quotations and citation omitted). If this were an ordinary action for injunctive and declaratory relief, then the burden of proof would rest with the Reorganized Debtor as it initiated this declaratory judgment action. *See id*. But as explained by one bankruptcy court:

> This is no ordinary case .... It is difficult to describe because it doesn't fit into any particular legal cargo hold. It can be looked at either as an objection to discharge or an objection to claims. If looked at as an objection to discharge, then it is the complaining entity that has the burden of proof. In this instance, even though [the reorganized debtor] is the plaintiff, it is [the creditor] that wants to be excepted from the consequences of the confirmation order. Thus, viewed in this way, the burden of proof belongs on [the creditor's] deck. If this action is looked at as an objection to claim, however, the burden of proof rests on different parties at different times, but the ultimate burden of persuasion is always on the claimant ....
>
> An even more persuasive basis for placing the burden of proof on [the creditor] is the general rule that when the true facts relating to a dispute are particularly within the knowledge of one party, then the burden of proving an issue lies with the knowledgeable party. [The reorganized debtor] should not have to prove a negative.

Waterman Steamship Corp v. Aguiar (In re Waterman Steamship Corp.), 200 B.R. 770, 774–75 (Bankr. S.D.N.Y. 1996) (citing FED. R. BANKR. P. 4005). [25] The PES Entities carry the burden of proof here to show that their products-liability claims are not prepetition bankruptcy claims discharged by B&W's confirmed Joint Plan and that, therefore, they are excepted from the consequences of that confirmed Joint Plan.

B. The PES Entities Are Bound by the Discharge Injunction Imposed by the Confirmed Joint Plan as Joint Venturers/Successors-in-Interest to the Girard Point Refinery If the Claims Asserted against the Reorganized B&W in the Pennsylvania State Court Action Are Prepetition Claims Discharged by the Confirmed Joint Plan.

In their Answer, the PES Entities assert that they cannot be bound by the terms of the confirmed Joint Plan. [ECF Doc. 16, ¶¶ 31 & 32]. [26] This Court disagrees.

***20** "Under res judicata, a final judgment on the merits of an action precludes the parties or their privies from relitigating issues that were or could have been raised in that action." *Allen v. McCurry*, 449 U.S. 90, 94 (1980). "[A] bankruptcy order is entitled to the effect of *res judicata*." *Republic Supply Co. v. Shoaf*, 815 F.2d 1046, 1051 (5th Cir. 1987) (citing *Southmark Props. v. Charles House Corp.*, 742 F.2d 862, 869 (5th Cir. 1984)). Under the Fifth Circuit's four-prong test for application of *res judicata*, "the parties must be identical in both suits, the prior judgment must have been rendered by a court of competent jurisdiction, there must have been a final judgment on the merits and the same cause of action must be involved in both cases." *Nilsen v. City of Moss Point, Miss.*, 701 F.2d 556, 559 (5th Cir. 1983) (en banc). Once

those four elements are met, this Court must also determine whether "the previously unlitigated claim could or should have been brought in the earlier litigation." *D–1 Enters., Inc. v. Commercial State Bank*, 864 F.2d 36, 38 (5th Cir. 1989); *see also In re Intelogic Trace, Inc.*, 200 F.3d 382, 388 (5th Cir. 2000); *In re Howe*, 913 F.2d 1138, 1145 (5th Cir. 1990).

The parties do not dispute that this Court held competent jurisdiction over B&W's bankruptcy proceeding or that the Order confirming the Joint Plan constituted a final judgment on the merits. As to the first factor requiring the parties to be "identical in both suits," the Fifth Circuit does not require strict identity of parties for *res judicata* purposes. *See Clifton v. Warnaco, Inc.*, Nos. 94-10226 & 94-10657, 1995 WL 295863, at *6 (5th Cir. Apr. 18, 1995). The preclusive effect of the *res judicata* doctrine can be extended to persons or entities "in privity" with parties to the litigation, which "is merely another way of saying that there is sufficient identity between parties to prior and subsequent suits for res judicata to apply." *Meza v. Gen. Battery Corp.*, 908 F.2d 1262, 1266 (5th Cir. 1990). Indeed, "[p]rivity is recognized as a broad concept, which requires [a] look to the surrounding circumstances to determine whether claim preclusion is justified." *Russell v. SunAmerica Sec., Inc.*, 962 F.2d 1169, 1173 (5th Cir. 1992). The Fifth Circuit recognizes privity in three circumstances: "(1) where the non-party is the successor in interest to a party's interest in property; (2) where the non-party controlled the prior litigation; and (3) where the non-party's interests were adequately represented by a party to the original suit." *Meza*, 908 F.2d at 1266.

The facts here reveal that Gulf Oil contracted for the construction of the Girard Point Refinery in the early 1970s. In the early 1980s, Gulf Oil merged with Chevron, and, in 1994, Chevron sold the Girard Point Refinery to Sunoco. B&W filed for chapter 11 bankruptcy relief in February 2000. Sunoco remained the sole owner of the Girard Point Refinery until June 2012, when it formed PES LLC with a private equity fund and a co-investment fund and contributed the Girard Point Refinery to PES LLC. PES LLC, in turn, operated the Girard Point Refinery through its wholly owned subsidiary, PESRM, formed for that purpose. On August 14, 2012, Sunoco (n/k/a Sunoco (R&M), LLC), the Commonwealth of Pennsylvania Department of Environmental Protection, and PESRM entered into a Consent Order and Agreement that transferred the Girard Point Refinery to PESRM. Since then, Sunoco has maintained a minority membership interest in PES LLC, whose wholly owned subsidiary, PESRM owns the Girard Point Refinery. The Court thus finds that the PES Entities are joint venturers with or successors in interest to Sunoco's interest in the Girard Point Refinery and that Sunoco, having received notice of B&W's bankruptcy and participated in that proceeding, adequately represented the PES Entities' interest in the B&W bankruptcy. The Court finds that sufficient identity between Sunoco and the PES Entities exists to justify the application of *res judicata* here.

***21** The question, then, is whether "same cause of action [is] involved in both cases"—that is, whether the claims alleged by the PES Entities against the Reorganized B&W in the Pennsylvania state court action are prepetition claims that were discharged by the confirmed Joint Plan in B&W's bankruptcy case.

C. The Products-Liability Claims Asserted by the PES Entities Related to the T-1 Elbow Are Not Prepetition Bankruptcy Claims Discharged in B&W's Bankruptcy Case.

Section 1141 of the Bankruptcy Code outlines the effect of a confirmed plan of reorganization. With a few exceptions not relevant here, and "[e]xcept as otherwise provided ... in the plan, or in the order confirming the plan, the confirmation of a plan discharges the debtor from any debt that arose before the date of such confirmation." 11 U.S.C. § 1141(d)(1)(A). Section 524 of the Bankruptcy Code, describing the effect of a discharge, "shields a debtor from personal liability on claims that are discharged in bankruptcy." *In re Valaris PLC*, No. 20-34114, 2025 WL 392482, at *3 (Bankr. S.D. Tex. Feb. 4, 2025) (citing 11 U.S.C. § 524; *In re Edgeworth*, 993 F.2d 51, 53 (5th Cir. 1993)). Indeed, "[t]he debt itself is not extinguished, but the discharge acts as an injunction against any action pursued by creditors to recover on a claim against the debtor." *Id.*

"Claim" is defined broadly in the Bankruptcy Code as a "right to payment, whether or not such right is reduced to judgment, liquidated, unliquidated, fixed, contingent, matured, disputed, undisputed, legal, equitable, secured, or unsecured." 11 U.S.C. § 101(5). Although the Bankruptcy Code defines a "claim" broadly, that definition is not limitless. A discharge injunction does not bar the pursuit of all claims against the debtor; instead, "[a] bankruptcy discharge acts as a permanent injunction against the holders of **dischargeable** claims against the Debtor." *In re Barry*, 330 B.R. 28, 36 (Bankr. D. Mass. 2005) (citing *Bessette v. Avco Fin. Servs., Inc.*, 230 F.3d 439 (1st Cir. 2000)) (emphasis added). Defining

the outer reaches of dischargeable claims implicates due-process concerns.

1. Elements of the Fifth Circuit's "prepetition-relationship" test

The first step when analyzing whether a claim was discharged by an Order confirming a plan of reorganization is to determine whether the claim is a prepetition bankruptcy claim. *See In re United Ref. Co.*, No. 83-03935, 2021 WL 160433, at *2 (Bankr. S.D. Tex. Jan. 16, 2021), *aff'd and remanded sub nom. United Ref. Co. v. Dorrion*, 688 F. Supp. 3d 558 (S.D. Tex. Aug. 23, 2023).[27] The definition of "claim" in § 101(5) is broad enough to encompass future claims—that is, claims "that have not manifested" at the time of confirmation of a plan of reorganization, "but that are relatively certain to manifest in the future and are based on the prior acts of the debtor." *Fairchild Aircraft Inc. v. Campbell (In re Fairchild Aircraft Corp.)*, 220 B.R. 909, 916 (Bankr. W.D. Tex. 1998) (quoting NAT'L BANKR. REV. COMM'N, TREATMENT OF MASS FUTURE CLAIMS IN BANKRUPTCY (1997)); *see also Dorrion*, 688 F. Supp. 3d at 564.[28] Treating unknown future claims in chapter 11 implicates two competing concerns: "the Bankruptcy Code's goal of providing a debtor with a fresh start by resolving all claims arising from the debtor's conduct prior to its emergence from bankruptcy; and the rights of individuals who may be damaged by that conduct but are unaware of the potential harm at the time of the debtor's bankruptcy." *Wright v. Owens Corning*, 679 F.3d 101, 105 (3d Cir. 2012). Against that backdrop, courts have developed various tests for determining whether future claims meet the definition of "claim" under the Bankruptcy Code.[29] Acknowledging that "there must be evidence that would permit the debtor to identify, during the course of the bankruptcy proceedings, potential victims and thereby permit notice to these potential victims of the pendency of the proceedings," the Fifth Circuit has applied a "prepetition-relationship" test to determine whether a future prepetition claim exists. *Lemelle v. Universal Mfg. Corp.*, 18 F.3d 1268, 1277 (5th Cir. 1994) (citations omitted). That test requires "some prepetition relationship, such as contact, exposure, impact, or privity, between the debtor's prepetition conduct and the claimant." *Id.* (quoting *In re Piper Aircraft Corp.*, 162 B.R. 619, 627 (Bankr. S.D. Fla. 1994)).[30]

***22** Cases applying the prepetition-relationship test are instructive to the Court's determination here. Compare the *Lemelle* and *Piper Aircraft* cases with the *Dorrion* case. In *Lemelle*,

> [t]wo children had died in 1985 after a mobile home manufactured in 1970 by a predecessor of defendant Universal Manufacturing caught fire. The mother of the children brought a wrongful-death suit related to the fire. Universal Manufacturing then sought summary judgment on account of a 1982 bankruptcy filing by the predecessor corporation, arguing that the mother's claim was discharged in bankruptcy. The Fifth Circuit determined that a dischargeable claim didn't exist at the time of filing in part because "the injury and the manifestation of that injury occurred simultaneously," several years after the bankruptcy petition was filed. It further explained that there was no evidence indicating "when [the mother] and her family acquired th[e] mobile home or from whom they acquired it." Nor was there any evidence that the manufacturer "should have even known of [the mother's] and her family's existence." They were "completely unknown and unidentified" when the bankruptcy petition was filed.

Dorrion, 688 F. Supp. 3d at 564 (summarizing the facts and holding in *Lemelle*, 18 F.3d, at 1271–77). The *Lemelle* court concluded that "even the broad definition of 'claim' cannot be extended to include ... claimants whom the record indicates were completely unknown and unidentifiable at the time [debtor] filed its petition and whose rights depended entirely on the fortuity of future occurrences." 18 F.3d at 1277. Similarly, the *Piper Aircraft* debtor entered chapter 11 and,

> [a]ssuming that aircraft designed and manufactured by Piper pre-petition would crash and injure persons and property post-petition, a legal representative filed a proof of claim on behalf of potential future claimants for $100 million ... based on statistical assumptions regarding the number of people who were likely to suffer personal injury or property damage after Piper's reorganization plan was confirmed.

Lemelle, 18 F.3d at 1276 (summarizing the facts in *Piper Aircraft Corp.*, 162 B.R. at 621–22). In finding that the future claimants had no prepetition bankruptcy claim that could be affected by an Order confirming Piper Aircraft's reorganization plan, the *Piper Aircraft* court observed:

> We know that some planes in the existing fleet of Piper Aircraft will crash, and we know that there may be injuries, deaths and property damage as a result. We also know that under theories of negligence and products liability, Piper, if it remains in existence, would be liable for some of these damages. Even so, there is no way to identify who the victims will be or to identify any particular prepetition contact, exposure, impact, privity or other relationship between Piper and these potential claimants that will give rise to these future damages.

162 B.R. at 627.

Those cases tell us that, to find a future claim to be a dischargeable prepetition bankruptcy claim under the prepetition-relationship test, two conditions must exist: (1) the future injury must be relatively certain to manifest itself at some point and be attributable to the debtor and (2) the debtor must be able to identify the claimant to whom it can give notice sufficient to satisfy due process that his or her future claim might be discharged by a confirmation order. The holding in *Dorrion* demonstrates this. In affirming the bankruptcy court's finding that the confirmation order discharged a future claimant's claim, the district court recounted evidence that the debtor knew of both its asbestos-related liability and how to identify potential future claimants:

> ***23** The Decedent was employed by United Refining [the debtor] at one of its plants in the 1960s. He was exposed to asbestos during such employment. Even the Executor recognizes that United Refining was no doubt aware of the dangers of asbestos exposure by the time of its 1983 bankruptcy filing, with asbestos-related lawsuits against it and many others having been well underway by then. By virtue of his employment, then, the Decedent was neither unknown nor unidentifiable. And the conduct at issue—exposure to asbestos by United Refining—occurred prepetition. The Executor's claim thus existed prepetition, even though the Decedent's injury manifested itself post-petition.
>
> ....
>
> On the available record, the bankruptcy court didn't err by determining that the Decedent's estate had sufficient notice of the need to file a bankruptcy claim.

Dorrion, 688 F. Supp. 3d at 564 & 566.

2. The PES Entities' claims are not dischargeable prepetition bankruptcy claims.

In the present case, the sufficiency of B&W's notice to the PES Entities that a future claim might be discharged is not an issue. B&W provided actual notice of its bankruptcy case and the bar date to Sunoco, the owner of the Girard Point Refinery which housed the T-1 Elbow. Sunoco participated in B&W's bankruptcy case and filed a proof of claim against the estate. As discussed above, the PES Entities share sufficient identity with Sunoco to be bound by the terms of the Joint Plan if the Pennsylvania state action claims are indeed prepetition bankruptcy claims that have been discharged through confirmation of the Joint Plan. And, solely for purposes of the task before this Court, no one contests that the alleged future injury is attributable to B&W: B&W manufactured the T-1 Elbow that was installed as a component part of Unit 433 in the early 1970s—years before B&W filed for bankruptcy relief—and then the T-1 Elbow allegedly failed post-confirmation in 2019 and caused the explosion at the Girard Point Refinery. That leaves open one remaining element of the prepetition-relationship test: whether any injury related to the T-1 Elbow manufactured by B&W was **relatively certain to manifest at some point**. Thus, the Court must evaluate the evidence gathered over the four-day trial to determine whether the PES Entities' products-liability claims related to the T-1 Elbow are like the claims in *Dorrion* where the nature and scope of those injuries was known or foreseeable to B&W's estate—or are they more akin to the claims in *Lemelle* where "the injury and the manifestation of that injury occurred simultaneously" years after the bankruptcy case was filed.

The evidence at trial revealed that the PES Entities' products-liability claims related to the T-1 Elbow were not known or foreseeable to Sunoco at the time of B&W's bankruptcy case. Today's refining-industry knowledge accepts that (i) the presence of high percentages of residual elements such as nickel and copper in steel interferes with the integrity and functioning of steel piping systems installed in hydrofluoric-acid environments and (ii) those elevated percentages of residual elements originate from manufacturers' heavy reliance upon scrap metal to forge steel using electric furnaces starting in the mid-1980s. *See, e.g.*, Joint Ex. 181, at 18 ("The significance of this transition [increasing electric-furnace steelmaking] is that a much more substantial percentage of steel is now being produced by electric furnace melting, a scrap intensive process, and scrap is the principal source of residual elements."). But the refining industry was just waking up to that reality in the early 2000s when B&W filed and prosecuted its chapter 11 bankruptcy case. Operators of hydrofluoric-acid alkylation units would have been reasonable in assuming that piping systems installed in such units prior to the mid-1980s—before the widespread use of electric furnaces and high percentages of scrap metal to forge steel—were made of high-purity carbon steel and thus extremely resistive to corrosion. *See* Trial Tr. 57:9–58:15 (Apr. 11, 2025) (Reynolds); Trial Tr. 116:6–16 (Apr. 11, 2025) (Carnahan).

***24** But specific to this case, Gulfco, Chevron, and Sunoco nevertheless fulfilled RAGAREP standards for inspection of hydrofluoric-acid alkylation unit piping systems by increasing TMLs over time in response to gradually emerging data on the negative effects of residual elements on piping systems in those units. That diligence revealed no thinning or corrosion concerns in the N-01 Circuit as late as 2001. Indeed, although the T-1 Elbow was not the site of a TML itself, Sunoco regularly measured the T-2 Elbow welded adjacent to the T-1 Elbow and found no significant corrosion. No one could have predicted as of the June 2003 bar date in B&W's bankruptcy case that the T-1 Elbow was not made of the same A234 Grade B carbon steel as its sibling T-2, T-3, and T-4 component parts, fabricated by Southwest Fabricating Co. and installed together as one unit in the N-01 Circuit in the early 1970s.

Moreover, no statistical or other evidence is before the Court to suggest that the T-1 Elbow manufactured by B&W was destined to fail. Indeed, it performed for over 45 years before the June 2019 explosion at the Girard Point Refinery. *Compare Dorrion*, 688 F. Supp. 3d at 564 ("Even the Executor recognizes that United Refining was no doubt aware of the dangers of asbestos exposure by the time of its 1983 bankruptcy filing, with asbestos-related lawsuits against it and many others having been well underway by then.") and *Piper Aircraft Corp.*, 162 B.R. at 621 ("Over the years, Piper has been a defendant in several lawsuits based on its manufacture, design, sale, distribution and support of aircraft and parts.... With 50,000 or 60,000 Piper aircraft still in operation, accidents involving these aircraft undoubtedly will occur."), *with Lemelle*, 18 F.3d at 1276 ("The injury suffered, *i.e.*, the death of the decedents, occurred simultaneously with the manifestation of that injury in December 1985, years after Winson's reorganization plan had been confirmed. The design and manufacture of the mobile home in question thus result in no tortious consequence until a fire started in that mobile home in December 1985."). The Court finds that the injury caused by the alleged failure of the T-1 Elbow was not relatively certain to manifest at some point. Thus, the PES Entities' current products-liability claims fail the prepetition-relationship test and are not prepetition bankruptcy claims discharged by B&W's confirmed Joint Plan. The PES Entities are not enjoined by the confirmed Joint Plan from pursuing those claims in the Pennsylvania state court action.

Accordingly,

IT IS ORDERED that the sole count alleged by the Reorganized B&W in its declaratory action is **DENIED**.

The Court will enter a separate judgment against the Reorganized Babcock & Wilcox contemporaneously with this *Memorandum Opinion and Order*.

New Orleans, Louisiana, June 13, 2026.

All Citations

Slip Copy, 2026 WL 1724858

Footnotes

1 On October 24, 2023, the following entities were allowed to intervene as plaintiffs in this adversary proceeding: (i) Westchester Fire Insurance Company; (ii) Ace Property & Casualty Insurance Company; (iii) Indian Harbor Insurance Company; (iv) Starr Surplus Lines Insurance Company; and (v) The Members of Lloyd's Syndicate 1861 as constituted for the 2019 underwriting year of account acting through their managing agent Canopius Managing Agents Limited (collectively, the "Reorganized B&W Insurers"). The Reorganized B&W Insurers did not participate in the trial.

2 The application of the Court's findings of fact herein is limited to the sole issue of whether the PES Entities' products-liability claims are prepetition bankruptcy claims that were discharged by B&W's confirmed joint plan of reorganization.

3 To the extent that any of the following findings of fact are determined to be conclusions of law, they are adopted and shall be construed and deemed conclusions of law. To the extent any of the following conclusions of law are determined to be findings of fact, they are adopted and shall be construed and deemed as findings of fact.

4 That opinion may be relevant to determining whether the Reorganized B&W has any products liability on account of the failed elbow joint, but it is not helpful to this Court in deciding whether those claims are prepetition bankruptcy claims discharged by B&W's confirmed joint plan of reorganization.

5 Mr. Reynolds also testified regarding the significance of stamps or markings on fittings, including specific stamps on the elbow joint at issue that were discovered after the June 2019 explosion in Unit 433. Mr. Reynolds further opined on differences in chemical compositions between Yoloy-brand steel, *see infra* note 11, and carbon steel and uses of each. Those opinions may be relevant to determining whether the Reorganized B&W has any products liability on account of the failed elbow joint, but they are not helpful to this Court in deciding whether those claims are prepetition bankruptcy claims discharged by B&W's confirmed joint plan of reorganization.

6 As described in 1999 by the American Petroleum Institute:

> [Hydrofluoric-acid] alkylation is a widely used refinery process important in producing a significant share of the nation's high-quality motor gasoline. The acid used in these units is a hazardous and corrosive liquid which, if accidentally released, can form a vapor cloud. Contact with HF liquid or vapor can result in serious, painful chemical burns and adverse health effects, sometimes with delayed onset.
>
> However, with proper design of alkylation units and careful process management, the acid in these units does not present a significant risk to the community or the environment. This process has been operated for over 50 years, with only a small number of incidents affecting the surrounding communities. Moreover, improvements in process design and management are continually being made to further reduce the risks to workers and surrounding communities. The petroleum and chemical industries have conducted extensive research on HY alkylation safety; the results are being used to prevent incidents and to mitigate the effects of an incident if one occurs.

Joint Ex. 153A, *Foreword*, [ECF Doc. 253].

7 ASTM Designation A234 application to "welding fittings" includes "butt-welding or socket-ends parts such as 45 and 90-deg elbows, 180-deg return bends, caps, tees, reducers, lapped joint stub ends, and other types,

as covered by the American Standard for Steel Butt-Welding Fittings (ASA B16.9-1958) and the American Standard for Steel Socket-Welding Fittings (ASA B16.11-1946).” Joint Ex. 171S.

8 Figure 20 and Table 3 from Mr. Carnahan's expert report are reproduced herein. Figure 20 represents a summary of the steelmaking processes used in the United States between 1950 and 2015 and Table 3 reveals historical scrap usage in various steelmaking processes. The information summarized in Figure 20 and Table 3 is based on data obtained by Mr. Carnahan from the Bureau of Mines Minerals Yearbook for Iron and Steel, the United States Geological Survey Mineral Commodity Summaries for Iron and Steel, and the tenth edition of *The Making, Shaping and Treating of Steel* issued by United States Steel in 1985. *See* Joint Ex. 181, at 19–22.

9 And not all scrap metal is the same. “Home scrap” is scrap that is left over from the steelmaking process itself—that is, generated at the steel plant and remelted to avoid waste. *See* Trial Tr. 114:12–115:20 (Apr. 11, 2025) (Carnahan). “Purchase scrap” is scrap bought from various sources, such as machine shops or junkyards, and recycled to make steel. *See id*. The existence of residual elements in scrap is not in question, only the quantity.

10 Facts to which the parties stipulate for trial purposes are contained in the Joint Pretrial Order dated April 4, 2025. [ECF Doc. 254].

11 YOLOY is the brand name of an alloy manufactured and marketed by B&W, composed of carbon steel and intentionally added quantities of copper and nickel. *See* Trial Tr. 211:14–213:15 (Apr. 7, 2025) (Rutkowski); Trial Tr. 211:7–212:15; 254:20–256:11 (Apr. 10, 2025) (Stevick); Stipulated Ex. 61, [ECF Docs. 241 & 251].

12 Of note: Also on August 22, 1972, FWC issued specifications for materials to be used for the piping system installed in a steam condensate unit of the Girard Point Refinery. *See* Stipulated Ex. 140-1, [ECF Doc. 244 & 251]. Unlike the specifications for hydrofluoric-acid alkylation Unit 433, FWC's specifications for the steam-condensate unit generally called for “Yoloy Pipe & Fittings, Carbon Steel Valves,” and specifically required fittings with diameters sized between ½-inch to 16 inches to be made of “Yoloy, weight to match pipe.” *See id*. The FWC contracts contain no language allowing unilateral material substitutions with or without notice to the contractor.

Dr. Stevick suggested that material substitutions by suppliers are commonplace in the refining industry either for lack of availability of the requested material or in instances where the supplier believes that the substitution constitutes a material upgrade. *See* Trial Tr. 126:8–129:4; 137:18; 142:10–20 (Apr. 10, 2025) (Stevick). Dr. Stevick further asserted that a Yoloy substitute supplied for a contract calling for A234 Grade B component parts to be installed for use in a hydrofluoric-acid environment would have satisfied that contract in 1972. *See* Trial Tr. 238:18–249:9 (Apr. 10, 2025). The Court found Dr. Stevick's testimony on cross-examination to be evasive and extremely speculative; regardless, that testimony is unhelpful to resolving the matter before this Court.

13 Initially, Sunoco held a 49% interest in PES LLC. *See* Joint Pretrial Order § G, ¶ 30.

14 Organized in the early 1940s, the National Association of Corrosion Engineers is a group of engineers and other professionals who collaborate and develop corrosion prevention and control standards. It exists now as the Association for Materials Protection and Performance.

15 TMLs are also referred to as “conditioned monitoring locations” or “CMLs.” Trial Tr. 54:18–55:20 (Apr. 7, 2025) (Rutkowski); Trial Tr. 13:23–14:2 (Apr. 11, 2025) (Reynolds).

16 The report includes the caveat that "[t]he material presented and the views expressed in this paper are solely those of the author(s) and not necessarily endorsed by the [NACE] Association." *See* Joint Ex. 165.

17 One of the engineers on the PERF from the Phillips Petroleum Company, Hisham Hashim, presented research and conclusions contained in an internal white paper entitled "Effect of Residual Copper, Nickel, and Chromium on the Corrosion Resistance of Carbon Steel in Hydrofluoric Acid Alkylation Service" at the NACE Annual Conference and Corrosion Show in 1993 (the "1993 White Paper"). See Stipulated Ex. 65, [ECF Docs. 241 & 251]. The 1993 White Paper outlined the authors' findings based on field samples and supporting laboratory test data and served as a precursor to the 2003 PERF project. Hashim concluded in the 1993 White Paper that:

1. Residual content of chromium, nickel, and copper has a detrimental effect on the corrosion resistance of ASTM carbon steel grades in HF.

2. The residual elements do not promote the formation of protective adherent iron fluoride on the surface.

3. Carbon steel grades meeting the specified ASTM materials specifications may contain residuals of sufficient quantities to decrease the corrosion resistance of the steel in HF.

4. Keeping the total content of chromium + nickel + copper to less than 0.2%, improves the corrosion resistance to HF.

Id. at 7. Although cited in the 2003 NACE Report, no evidence before the Court suggests that the 1993 White Paper was widely circulated among industry participants at the time it was authored.

18 As to the first cause, the PERF concluded:

• Corrosion problems in areas of HF alkylation units handing strong acid are considered to be due to:

i. The presence of impurities other than water in the concentrated HF, and/or (not significantly tested in this program.)

ii. The presence of water at locally high concentrations.

• Consideration of the HF solution chemistry indicates that under significant pressure drop conditions, concentrated HF is likely to evaporate to a liquid phase concentration of 67% and hence scenario (ii) above is viable.

• Tests in 60% HF at 71°C [158°F] has been shown to reflect the residual element effects observed in service.

....

• Studies on coupled materials and weldments have shown that in 60% HF, corrosion is dominated by diffusion effects through the fluoride film. Hence, galvanic effects are expected to be less significant in this and more concentrated HF environments.

Joint Ex. 165, at 9.

19 No evidence of any updates to API 570 after 1998 is before the Court. *See* Stipulated Ex. 69.

20 The Court takes judicial notice of certain documents and orders filed in the main bankruptcy case. *See Banque de Paris et des Pays-Bas (Suisse) S.A. v. Arhens (In re Arhens)*, 120 B.R. 852, 854 (Bankr. S.D. Tex. 1990) (citing *Sec. & Exch. Comm'n v. First Fin. Grp. of Tex.*, 645 F.2d 429, 433 (5th Cir. 1981)). The Court

administered B&W's bankruptcy case jointly with cases filed by subsidiaries Diamond Power International, Inc. (No. 00-10993), Babcock & Wilcox Construction Co., Inc. (No. 00-10994), and Americon, Inc. (No. 00-10995). [No. 00-10992, ECF Doc. 4].

21 Three main sources funded the Asbestos PI Trust:

- Assignment of the rights to insurance proceeds shared by B&W and its non-debtor corporate parent and affiliates, in the face amount of at least $1.15 billion;
- Transfer of the capital stock of B&W, which was valued at between $400 and $500 million; and
- Additional contributions from certain of B&W's parent companies, MI and MII, including 4.75 million shares of MII common stock with a minimum share price guaranty (valued at $123.1 million), $92 million aggregate principal amount of promissory notes, and certain tax benefits.

[No. 00-10992, ECF Doc. 6913, §§ II.B & III.B; ECF Doc. 7003, §§ 1.1.44, 1.1.57, 1.1.92, 3.2.6 & 7.2].

22 Section 3.2.8 of the Joint Plan dealt with a class of prepetition claims against B&W arising out of the alleged presence of or exposure to nuclear contamination in two communities in Pennsylvania not implicated in this dispute.

23 The welds between the T-1 Elbow and the T-2 Elbow as well as the T-1 Elbow and the T-4 Pipe also revealed elevated levels of copper and nickel. *See* Stipulated Ex. 71, at 9; Trial Tr. 167:4–14 (Apr. 8, 2025) (Kemeny) ("An interesting one is the T1–T2 weld. You can see that showing higher levels. And that's because when welding between two different metallurgies, you're basically melting some of the metal from each side, and that's why that weld is showing higher levels of copper and nickel. Likewise, a similar type situation with the T1 to T4 connection, you're again getting some mixing of the copper and nickel from that one metallurgy elbow versus the very low nickel-copper containing components.").

24 ASTM 234 carbon steel (incorporating 1968 A106 specifications) required Grade B carbon steel to contain a maximum of 0.30% carbon, between 0.29 to 1.06% manganese, a maximum of 0.048% Phosphorus, a maximum of 0.058% sulfur, and a minimum of 0.10% silicon. *See* Joint Ex. 171B & Table I. The T-1 Elbow contained 0.14% carbon (compared with 0.24–0.25% carbon in the T-2, T-3, and T-4 components), 0.80% manganese, less than 0.005% phosphorus, 0.010% sulphur, and 0.10% silicon. *See* Stipulated Ex. 71, at 9. The T-1 Elbow also contained a 2.58% combination of copper and nickel—an amount suggesting that it was purposefully added and certainly not contemplated to be present in Grade B carbon steel in the late 1960s and early 1970s given the high-purity steel manufacturing methods prevalent at that time. *See supra* Part I.A.2.

25 It may appear that courts disagree on this issue. But cases in which courts find that the reorganized debtor holds the burden of proof are typically cases where the creditor held undisputed prepetition bankruptcy claims that were discharged in the debtor's bankruptcy case and the reorganized debtor was forced to petition the court to enforce the discharge injunction when the creditor continued attempts to collect the debt post-confirmation. *See, e.g.*, *Mahoney v. Washinton Mut., Inc. (In re Mahoney)*, 368 B.R. 579, 590 (Bankr. W.D. Tex. 2007) ("The burden of proof is on the former debtor to establish by clear and convincing evidence that [the] creditor violated the post-discharge injunction.") Here, whether the PES Entities' products-liability claims are prepetition bankruptcy claims **is** the dispute.

26 In their Answer, the PES Entities assert:

> Answering further, PES denies that its claims against B&W and the other defendants in the State Court Action were discharged in B&W's bankruptcy case, in whole or in part, pursuant to the Plan, Confirmation Order, applicable law, or otherwise. PES denies that it is barred from pursuing the claims in the State Court

> Action against B&W and the other defendants in the State Court Action, and other responsible parties including B&W's insurers, in whole or in part, pursuant to the Plan, Confirmation Order, applicable law, or otherwise. PES denies that it held a claim during the B&W bankruptcy case that was subject to discharge under the Plan. Contrary to the assertions by B&W that the Failed elbow Joint was designed, manufactured, marketed, purchased, and installed prior to B&W's bankruptcy filing in 2000 and therefore any claims relating to the Failed elbow Joint were discharged upon confirmation of the Plan in 2006, PES's claims did not come into existence until at least June 21, 2019. Further, B&W's discharge claim fails due to lack of due process, notice and privity, as to PES. B&W also maintained and continues to maintain claims-based insurance policies for PES' claims and other similar future claims, which inter alia, demonstrates that B&W did not contemplate nor believe that such claims would be discharged by the Plan ....
>
> ....
>
> Answering further, PES denies the discharge injunction applies to PES' claims in whole or in part.

[ECF Doc. 16, ¶¶ 31 & 32].

27 Courts use 'pre-petition claim' and 'pre-confirmation claim' interchangeably. *See, e.g.*, *In re AMPAM Power Plumbing, L.P.*, 520 B.R. 553, 558 (Bankr. W.D. Tex. 2014) ("As *Wright* instructs, prepetition and pre-confirmation claims are treated identically in the context of future claims." (citing *Wright v. Owens Corning*, 679 F.3d 101, 107 (3d Cir. 2012)).

28 "Indeed, the legislative history [of § 101(5)] unmistakably states that the language employed was chosen so that 'all legal obligations of the debtor, no matter how remote or contingent, will be able to be dealt with in the bankruptcy case [to] permit[ ] *the broadest possible relief* in the bankruptcy court.' " *In re Fairchild Aircraft Corp.*, 184 B.R. 910, 924 (Bankr. W.D. Tex. 1995), v*acated on other grounds*, 220 B.R. 909 (Bankr. W.D. Tex. 1998) (quoting H.R. REP. No. 595, 95th Cong., 1st Sess. 309 (1977), *reprinted in* 1978 U.S.C.C.A.N. 5787, 5963, 6266). A contingent claim is a type of future claim. Although the Bankruptcy Code does not define a contingent claim, the Fifth Circuit instructs:

> A claim is contingent as to liability if the debtor's legal duty to pay does not come into existence until triggered by the occurrence of a future event and such future occurrence was within the actual or presumed contemplation of the parties at the time the original relationship of the parties was created.

In re All Media Props., Inc., 5 B.R. 126, 133 (Bankr. S.D. Tex. 1980), *aff'd*, 646 F.2d 193 (5th Cir. 1981).

29 Tests include (i) the "accrual" test, (ii) the "fair-contemplation" test, (iii) the "conduct" test, and (iv) the "prepetition-relationship" test. "Under *the accrual test*, a claim accrues for bankruptcy purposes when it accrues under applicable non-bankruptcy law." *Dorrion*, 688 F. Supp. 3d at 563. "Under *the fair-contemplation test*, for a claim to qualify as a prepetition claim, it must have been within the 'fair contemplation' of the parties at the time of bankruptcy filing." *Id*. "Under *the conduct test*, a bankruptcy claim arises whenever the conduct prompting alleged liability occurs, even if injury doesn't manifest itself until after the bankruptcy filing." *Id*. The prepetition-relationship test applied by the Fifth Circuit is essentially a narrower version of the conduct test. *See id*. at 564.

30 B&W's confirmed Joint Plan defined "Contingent Claim" broadly. *See supra* Part I.E. The Reorganized B&W asserted in its second summary judgment motion that the Joint Plan's terms discharged the PES Entities' current products-liability claims and preempts any inquiry otherwise. [ECF Docs. 209 & 210]. In denying summary judgment, the Court found:

> The Court interprets B&W's argument as one that would allow a debtor to circumvent due process regarding future claims by drafting language in a plan that obliterates any limit to the types of claims that are subject

> to a discharge injunction in a confirmed plan. The Court rejects that assertion. To determine whether the claims asserted by the Defendants in the Pennsylvania state court action are dischargeable prepetition bankruptcy claims that were discharged through B&W's confirmed Plan, this Court is required to apply the Fifth Circuit's prepetition-relationship test after hearing the parties' evidence as to the two conditions that must exist to satisfy that test. Due process demands it.

[ECF Doc. 236]. As it stands, the evidence at trial has revealed that the PES Entities' products-liability claims are not dischargeable prepetition bankruptcy claims.