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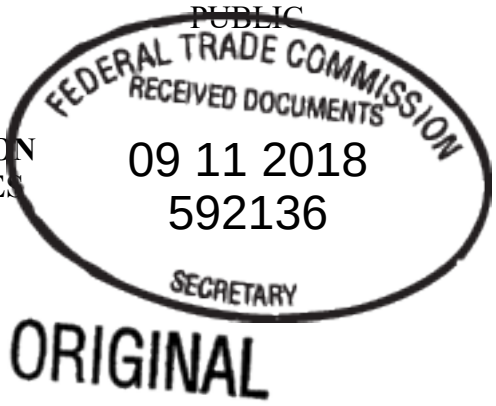

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UNITED STATES OF AMERICA
BEFORE THE FEDERAL TRADE COMMISSION
OFFICE OF ADMINISTRATIVE LAW JUDGES

In the Matter of Tronox Limited a corporation, National Industrialization Company (TASNEE) a corporation, National Titanium Dioxide Company Limited (Cristal) a corporation, And Cristal USA Inc. a corporation.	)	Docket No. 9377

RESPONDENTS' POST-TRIAL REPLY BRIEF

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INTRODUCTION

Complaint Counsel has crafted a case against the Tronox-Cristal transaction in its post-trial brief that is unrecognizable from the record the parties developed at trial.

First, throughout its post-trial brief and proposed findings of fact, Complaint Counsel relies on documents that it never presented at trial. Of the 412 total documents Complaint Counsel cites in its initial post-trial submissions, only 85 were the subject of trial testimony. This means that for 80% of the cited documents, Complaint Counsel elicited no relevant testimony from a knowledgeable witness, provided no context that might be necessary to understand the document in question, and, perhaps most significantly, permitted no opportunities for cross-examination. Complaint Counsel's case is instead composed primarily of stray snippets stripped of their context, which Complaint Counsel asks the Court to interpret without the benefit of background. The Court should afford these documents little, if any, probative weight. While "ordinary course-of-business documents … can be probative of whether a proposed merger is likely to result in competitive harm …., as with any other piece of documentary evidence, assessing the[ir] probative value … requires an examination of the context, circumstances, and foundation of the proffered evidence." *United States v. AT&T, Inc.*, 310 F. Supp. 3d 161, 204 (D.D.C. 2018). Here, Complaint Counsel has deprived this Court of the "context, circumstances, and foundation" needed to interpret the documents on which it relies.

Second, Complaint Counsel makes no effort to address what *actually* happened at trial. Consider, for instance, Complaint Counsel's reliance on so-called "direct evidence" of anticompetitive effects stemming from a conversation between Tronox executives and PPG's Paul Malichky. Complaint Counsel continues to tell only part of the story, as if the only evidence in the record about the Tronox-PPG meeting is Malichky's initial account, in which Tronox executives supposedly expressed their intention to raise PPG's price after the merger. FTC Post-

Trial Br. at 2-3. Complaint Counsel ignores, however, that Malichky's initial testimony crumbled at trial during cross-examination and again during the direct examination of Tronox employee Ian Mouland. The *full* picture is very different from the incomplete version Complaint Counsel puts forward. At the meeting, Tronox executives indicated only their intention to harmonize PPG's Tronox and Cristal prices after the merger; indeed, that was all they *could* say because these executives had no way of knowing what price PPG was actually paying for TiO2 from Cristal. Moreover, the purpose of the Tronox-PPG meeting was not to announce post-transaction price increases but instead to discuss affording PPG special price *protections* after the transaction. Tronox was prepared to offer those protections on terms that PPG had drafted, yet it was *PPG* who chose not to follow through with the agreement and refused to sign. Rather than confront this fuller picture of events, Complaint Counsel doubles down on the facts as it wishes them to be, rather than as they are.

Third, Complaint Counsel attempts to shirk its burden of production and persuasion by crafting a legal standard that resolves all doubts in its favor and by painting a picture of the TiO2 industry as characterized by anticompetitive conduct. FTC Post-Trial Br. at 6, 7. One can reasonably ask why Complaint Counsel attempts to lighten its burden despite having had ample opportunity to present its best case at trial. No matter the reason, the Court should hold Complaint Counsel to the burden the law assigns — a burden that "remains with the government at all times." *United States v. Baker Hughes Inc.*, 908 F.2d 981, 983 (D.C. Cir. 1990).

Complaint Counsel cannot meet its burden. Indeed, Complaint Counsel has:

- failed to prove that sales of chloride TiO2 to North American customers constitute a relevant market for antitrust purposes;
- failed to show that the proposed transaction would lead to presumptively anticompetitive market concentration under any other market definition;
- failed to show that coordinated effects are likely post-transaction;

- failed to show that TiO2 producers have historically engaged in unilateral output reduction to inflate price;
- failed to show that TiO2 producers are likely in the future to unilaterally reduce output to inflate price;
- failed to prove that entry and expansion in the North American TiO2 market could not counteract any anticompetitive effects of the transaction,
- and failed to rebut Respondents' strong evidence of post-transaction efficiencies, which would counteract any risk of post-transaction anticompetitive effects.

Complaint Counsel has no answer for the facts. By any measure, the proposed transaction is pro-competitive and output-enhancing, and this Court should permit Respondents to proceed.

ARGUMENT

I. THE PROPOSED ACQUISITION IS NOT PRESUMPTIVELY UNLAWFUL.

Complaint Counsel gerrymands a legal standard that is so lax as to be almost unrecognizable. To be sure, Complaint Counsel begins with the text of Section 7 of the Clayton Act, which prohibits mergers or acquisitions "the effect of [which] may be substantially to lessen competition, or to tend to create a monopoly." 15 U.S.C. § 18. Complaint Counsel accurately observes that this standard is concerned "with probabilities" and demands a predictive judgment about the likelihood of post-transaction anticompetitive effects. FTC Post-Trial Br. at 6 (quoting *FTC v. H.J. Heinz*, 246 F.3d 708, 713 (D.C. Cir. 2001)). Yet Complaint Counsel thereafter departs from a fair reading of the statute, asserting that not only is its burden of proof merely probabilistic, but that "*[w]here uncertainty exists as to the likelihood of harm, 'doubts are to be resolved against the transaction*.'" FTC Post-Trial Br. at 6 (quoting *FTC v. Elders Grain*, 868 F.2d 901, 906 (7th Cir. 1989)) (emphasis added). In other words, in Complaint Counsel's view, the Court may find this transaction unlawful if there is *any* possibility of anticompetitive effects. Notably, this Court has *never* applied such a lax interpretation of Section 7, nor is there any good reason to start now.

Complaint Counsel's relaxed standard rests on a cherry-picked case citation. In fact, *Elders Grain* itself makes clear that "[o]f course the word 'may' [in Section 7 of the Clayton Act] should not be taken literally, for if it were, every acquisition would be unlawful." *Elders Grain*, 868 F.2d at 906. That is why Section 7 has been "give[n] concrete meaning" through the familiar formula applicable to antitrust cases, that "assum[ing] a properly defined market," "an acquisition which reduces the number of significant sellers in a market already highly concentrated and prone to collusion by reason of its history and circumstances is unlawful in the absence of special circumstances." *Id. That* is the standard Complaint Counsel must meet, as countless cases confirm.

- Congress intended Section 7 to address "probabilities" but did not seek a "statute … for dealing with ephemeral possibilities." *Brown Shoe Co. v. United States*, 370 U.S. 294, 323 (1962).
- "To be sure, remote possibilities are not sufficient to satisfy the test set forth in s[ection] 7" and the "predictive judgment often required under s[ection] 7 involves a decision based upon a careful scrutiny and a reasonable assessment of the future consequences of a merger without unjustifiable, speculative interference with traditional market freedoms." *United States v. Falstaff Brewing Corp.*, 410 U.S. 526, 555-56 (1973).
- Any "prediction" required by Section 7 "is sound only if it is based upon a firm understanding of the structure of the relevant market." *United States v. Pa. Nat. Bank*, 374 U.S. 321, 362 (1963).
- "[R]emote possibilities are not sufficient to satisfy the test set forth in s[ection] 7" but "[r]ather, the loss of competition which is sufficiently probable and imminent is the concern of s[ection] 7." *United States v. Marine Bancorporation, Inc.*, 418 U.S. 602, 623 n.22 (1974) (internal quotation marks omitted).
- "The words 'may be' [in section 7] means that the bill, if enacted, would not apply to the mere possibility but only to the reasonable probability of the proscribed effect." *H.J. Heinz Co.*, 246 F.3d at 713 (quoting S. Rep. No. 1775, at 6 (1950)).
- "To establish a Section 7 violation, plaintiff must show that a pending acquisition is reasonably likely to cause anticompetitive effects." *United States v. Sungard Data Sys., Inc.*, 172 F. Supp. 2d 172, 180 (D.D.C. 2001); *FTC v. H&R Block, Inc.*, 833 F. Supp. 2d 36, 49 (D.D.C. 2011).

It is well settled that Section 7 requires a reasonable probability of post-transaction anticompetitive effects and that the burden of establishing a Section 7 violation "remains with the

government at all times." *Baker Hughes Inc.*, 908 F.2d at 983. Complaint Counsel has failed to meet that burden in this case.

A. The Sale of Chloride TiO2 to North American Customers Is Not a Relevant Market.

1. Chloride TiO2 Is Not a Relevant Product Market.

Respondents have already demonstrated why Complaint Counsel's purported chloride-only TiO2 product market is inconsistent with the real-world TiO2 industry. Chloride- and sulfate-process TiO2 are interchangeable in the vast majority of applications and strong cross-elasticities of demand exist for TiO2 produced with either process. *See* Respondents' Post-Trial Br. at 50-53. That analysis still applies, and Complaint Counsel's post-trial brief casts no doubt on it. Additionally, however, Complaint Counsel's post-trial brief further exposes the flaws in its proposed chloride-process-only product market.

First, Complaint Counsel correctly articulates the standard for proving a relevant product market, but then does not supply the type of analysis or evidence demanded by that standard. Complaint Counsel admits that, "[t]o determine the scope of the product market, courts examine 'whether goods are 'reasonable substitutes,' which depends on *two* factors: *functional interchangeability and cross-elasticity of demand*." FTC Post-Trial Br. at 11. Complaint Counsel also admits that "[t]he key question … is whether customers in North America would substitute sulfate TiO2 for chloride TiO2 in sufficient volumes to render a SSNIP unprofitable." *Id.* Yet when it comes to evidence, Complaint Counsel offers only scattered testimony from TiO2 customers and producers that focuses on the alleged lack of "functional interchangeability" between chloride- and sulfate-process TiO2. At no point does Complaint Counsel provide any economic analysis of the cross-elasticity of demand between chloride- and sulfate-process TiO2, nor does Complaint Counsel make any attempt to show, as even Complaint Counsel says the

Merger Guidelines require, that in response to a SSNIP on chloride-process TiO2, customers would (or would not) substitute sulfate-process TiO2 in sufficient volumes to render a SSNIP unprofitable. Likewise, Complaint Counsel never provides any authority—whether from case law, from the Merger Guidelines, or elsewhere—to suggest that pull-quotes from customers and producers can, standing alone, demonstrate a relevant product market for antitrust purposes.[1]

Second, even if testimony from customers and producers *could* be sufficient evidence by itself, Complaint Counsel's *actual* testimonial evidence falls far short of satisfying even that standard. After all, "[t]he key question" is whether customers could defeat a SSNIP imposed on chloride-process TiO2 by "substitut[ing] sulfate TiO2 for chloride TiO2 in sufficient volumes to render a SSNIP unprofitable." FTC Post-Trial Br. at 11. In other words, Complaint Counsel must show not simply that *some* customers would not switch to sulfate TiO2, but that a *sufficient volume* of customers would not switch to sulfate TiO2. Complaint Counsel has made no attempt to illustrate that a handful of customers are representative of TiO2 customers as a whole, or that the behavior and preferences of this small group represents a "sufficient volume" of consumption to justify sweeping conclusions about the entire TiO2 industry.

In fact, Complaint Counsel's testimonial evidence is almost *entirely* from customers in the paints and coatings industry. Yet Complaint Counsel acknowledges that the paints and coatings industry accounts for only 60% of TiO2 consumption in North America, leaving 40% of TiO2

[1] At footnote 9 of its opening post-trial brief, Complaint Counsel makes an effort to show only that the testimony of customers and third-party market participants is appropriate evidence to consider in defining a relevant product market, not that it can be *sufficient* evidence for doing so. In both of the cases Complaint Counsel cites at footnote 9, the courts relied not only on testimonial evidence related to product market definition, but also (as the Horizontal Merger Guidelines require) expert economic evidence related to product market definition. *See FTC v. Staples*, 190 F. Supp. 3d 100, 121-22 (D.D.C. 2016) (discussing expert economic evidence of relevant product market); *FTC v. Sysco Corp.*, 113 F. Supp. 3d 1, 33-35 (D.D.C. 2015) (same). Incidentally, both cases also engage in extensive analysis under *Brown Shoe*'s 7-part "practical indicia" test for determining a relevant product market, a test that Complaint Counsel has never raised nor attempted to satisfy here. *See Staples*, 190 F. Supp. 3d at 119-121; *Sysco*, 113 F. Supp. 3d at 27-29.

customers essentially unrepresented. FTC FOF ¶ 15. Indeed, reviewing pages 11-17 of Complaint Counsel's brief, only *three* quotations come from outside the paint and coatings industry. [redacted] The remainder comes from [redacted] four paint and coatings manufacturers. This myopic focus on only a single group of customers, rather than all of them, is telling.

Third, Complaint Counsel inaccurately depicts the testimony of one of the two plastics manufacturers it cites. [redacted] In other words, [redacted] testified that it *can* substitute sulfate-process TiO2 for chloride-process TiO2. Not by accident, Complaint Counsel chose not to call [redacted] at trial.

Fourth, Complaint Counsel ignores substantial evidence that plastics manufacturers can and do use sulfate-process TiO2. At its deposition, major plastics producer Westlake testified that it uses sulfate-process TiO2 to create PVC siding. Respondents' Reply FOF ¶ 90 (citing PX7034; Septien Dep. 45-47 (testifying about PX4029, Westlake's response to FTC's civil investigative demands) ("Q: Do some plants have sulfate grades qualified then? … A: Yes. Q: Which plants have sulfate grades qualified, if you know? A: Three plants.")). Other plastics manufacturers stated in their responses to the FTC's civil investigation demands that they also use sulfate-process TiO2. ICC Industries stated that one of its subsidiaries uses *only* sulfate-process TiO2, while Clariant stated that about 10% of their TiO2 use comes from sulfate-process products. Respondents' Reply FOF ¶ 90. Tronox employee Jeff Engle also testified that a [redacted]

Fifth, [redacted]

[redacted]

Thus, although the paint and coatings industry accounts for 60% of TiO2 consumption in North America, the purely chloride-process-consuming portion of that industry accounts for something less than 60% of TiO2 consumption, because all of the paint and coatings manufacturers on which Complaint Counsel relies use sulfate-process TiO2 in at least some of their products.

Sixth, Complaint Counsel relies several times on testimonial statements from another TiO2 producer, Kronos, *see* FTC Post-Trial Br. at 12, 14 n.16, 17, but these selective statements do not accurately portray what was said. Kronos' representative testified that in most segments of TiO2 consumption, both chloride- and sulfate-process grades can be suitable:

> Q: So with architectural coatings, you'd agree that both sulfate process and the chloride process are suitable for use in architectural coatings; correct?
>
> A: Absolutely.
>
> …
>
> Q: [The] sulfate process and chloride process are suitable for decorative coatings?
>
> A: Yes.
>
> Q: Sulfate process and chloride process are suitable for industrial coatings.
>
> A: Correct.
>
> Q: Sulfate process and chloride process are suitable for thin film coatings.
>
> A: Yes. I mean, the coatings — I can probably save you some time. The coatings market can use sulfate and chloride.
>
> Q: So that's true of automotive coatings; correct?
>
> A: I believe so. Yes.
>
> Q: Marine coatings; correct?

A: Yes.

…

Q: Getting away from coatings, plastic for packagings are suitable for the sulfate process and the chloride process; right?

A: Yes.

Q: And that would include polyolefins; correct?

A: Yes.

Q: And polyolefins are the foam and the other stuff that comes in packages that you receive, correct?

A: Yeah.

…

Q: So you would agree with me that sulfate and chloride are both suitable for plastics for the construction sector; correct?

A: In certain applications, yes.

Q: Including, for example, PVC pipe; correct?

A: In certain applications, yes.

Q: Laminate paper, both chloride and sulfate; correct?

A: I would assume in certain applications, yes[.]

Christian, Tr. 893-96. Furthermore, Kronos testified that approximately half of the TiO2 grades it manufactures come from the sulfate process, and that some of these sulfate-process grades compete with some chloride-process grades. Christian, Tr. 897-98. Kronos also recommends many of its sulfate grades for the same types of applications for which chloride-process TiO2 can also be used. For example, Kronos 2056 is a sulfate-process grade that Kronos describes as "suitable for conventional air drying paints" because it "confers good exterior durability on coatings and plastics," Christian, Tr. 901-02, and Kronos 2190 is a high-volume, sulfate-process grade that competes with chloride-process grades and that Kronos describes as suitable for indoor

and outdoor architectural paints and industrial coatings because it "has a very high gloss," "disperses readily," has "outstanding hiding power and tinting strength," "imparts good outdoor durability," and is "highly economical in use." Christian, Tr. 904-06. Complaint Counsel's selective quotations ignore the reality that Kronos produces and sells sulfate-process TiO2 for use by a wide variety of customers in a broad swath of industries, many of whom can use sulfate-process TiO2 in the same applications for which chloride-process TiO2 is also suitable.

In short, Complaint Counsel makes its case for a chloride-process TiO2 product market based on customer testimony that does not represent the full breadth of TiO2 consumption across industries and that inaccurately portrays the actual testimony from TiO2 customers and producers. As Respondents explained in their opening post-trial brief, Complaint Counsel has selectively relied on a small and unrepresentative sample of TiO2 consumers despite obtaining extensive information from 39 non-parties during the investigative process. Respondents' Post-Trial Br. at 31. Complaint Counsel never tries to justify its refusal to consider all of the evidence. Additionally and inexplicably, Complaint Counsel's post-trial brief does not offer any expert economic testimony that would justify a chloride-process-only product market despite acknowledging that the Merger Guidelines require such analysis.

2. North America Is Not a Relevant Geographic Market.

a. TiO2 Suppliers Set Prices Around the World Through Individualized Negotiations With Customers.

Complaint Counsel spends a great many pages attempting to show that TiO2 prices vary across regions throughout the world. Complaint Counsel does this because it is necessary for its proposed geographic market, which is centered on "the locations of customers, not suppliers." FTC Post-Trial Br. at 18 (quoting *Polypore Int'l, Inc. v. FTC*, 150 FTC 586, *16 (2010)); *see also* FTC Post-Trial Br. at 18-22. Complaint Counsel's lengthy analysis misses the mark, however,

because Respondents' economic expert premised his application of the hypothetical monopolist test on *Complaint Counsel*'s own alleged relevant market, premised on the "location of customers." Respondents' FOF ¶ 269. Respondents have not disputed that the location of customers *can* provide a basis for defining a relevant market in an appropriate case or that the location of TiO2 customers in North America can provide a starting point for analyzing a potential relevant market on the facts here. Respondents have instead disputed only Complaint Counsel's *conclusion* about its proposed relevant market. Proper economic analysis reveals that a hypothetical monopolist could not profitably impose a SSNIP in Complaint Counsel's proposed market of sales to customers in North America.

Moreover, no one disputes that TiO2 prices vary throughout the world. That fact makes perfect sense given that TiO2 producers sell their product globally through individualized negotiations with customers. Respondents' FOF ¶¶ 73-80. While geographic location can be one ingredient in those individualized pricing negotiations, many other factors also play a role, including customer buying behaviors, the strategic value of the customer, other competition from other suppliers, the supply-demand relationship, and the producer's "value proposition." Respondents' FOF ¶ 74.

In any event, Complaint Counsel's discussion of "regional pricing" is not merely unnecessary but also misleading. Complaint Counsel overstates the significance of so-called "regional pricing" by failing to acknowledge that price negotiations happen on an individual customer basis. In truth, there is no such thing as a "regional price," only regional averages. [redacted] Complaint Counsel further overstates the significance of disparities between regional price averages. Complaint Counsel focuses on the fact

that North American average prices have often been higher than average prices in other regions in absolute terms, regardless of currency. FTC Post-Trial Br. at 21-22. Yet Complaint Counsel ignores that comparing price averages between North America and other regions reveals significant "statistically and economically significant co-movement" of TiO2 prices, which "*relatively* move and adjust on a global, not a North American scale." Respondents' FOF ¶¶ 306, 313.

This is not just Respondents' opinion. Even Complaint Counsel's own economic expert, Dr. Hill, recognized that average prices among regions move together even if they vary in absolute terms. [redacted]

b. North American Customers Can Arbitrage Chloride TiO2 and TiO2 Suppliers Can Shift Global Trade Flows to Respond to Price Differences.

Complaint Counsel next asserts that the "persistent regional pricing gap shows that North American customers have not engaged in arbitrage to defeat higher prices in North America." FTC Post-Trial Br. at 22. Once again, this is not so.

It is implausible and inconsistent with real-world evidence for Complaint Counsel to suggest that "the cost of shipping and duties … as well as the logistical burdens, render arbitrage

of chloride TiO2 not commercially viable." FTC Post-Trial Br. at 23. In fact, TiO2 already moves in significant global trade flows, which shows that shipping, duties, and logistical burdens are not true barriers to the global movement of TiO2. For example, "from 2002 to 2016, annual imports of rutile TiO2 into North America varied from 75,000 metric tons per year to 200,000 metric tons per year." Respondents' FOF ¶ 292. "In 2016, roughly 15 percent of the rutile TiO2 consumed in North America was imported." Respondents' FOF ¶ 293. Consistent with this real-world observation, trial testimony showed that TiO2 is also relatively inexpensive to ship. Respondents' FOF ¶¶ 283-84. In fact, in some cases, the total shipping costs, including tariffs and taxes, can be lower for TiO2 shipped internationally than for TiO2 shipped domestically. Respondents' FOF ¶ 284 (citing Mei, Tr. 3159). The magnitude of these TiO2 imports demonstrates that shipping costs, duties, and logistical burdens are not so great as to prevent the global movement of TiO2.

Furthermore, TiO2 customers testified at trial about *actually* engaging in arbitrage. [redacted]

[redacted] John Romano of Tronox also testified about specific customers engaging in arbitrage when prices in one geographic area become too disparate from prices in another. Respondents' FOF ¶ 326 (citing Romano, Tr. 2237-38, 2273).[2] Complaint Counsel says nothing about these *actual* real-world examples of TiO2 arbitrage.

Complaint Counsel also ignores that both actual arbitrage and the threat of arbitrage are sufficient competitive forces to keep regional pricing within a narrow band. Respondents' Reply FOF ¶ 177. For example, plastics manufacturer Deucuninck testified that it had declined arbitrage opportunities in the past because the threat of purchasing TiO2 from Europe was enough to negotiate lower prices from their suppliers in North America. Respondents' Reply FOF ¶¶ 196, 259, 264 (citing Arrowood, Tr. 1119; RX0402). [redacted]

The remainder of Complaint Counsel's arguments against arbitrage amounts to explaining why TiO2 customers are sometimes willing to pay higher prices for TiO2 that is sourced close to home or carries other advantages. Complaint Counsel argues that TiO2 customers value reliable sources of TiO2 supply and enjoy having a direct relationship with TiO2 suppliers. FTC Post-

[2] This testimony is also inconsistent with Complaint Counsel's assertion that "chloride TiO2 suppliers will not tolerate arbitrage." FTC Post-Trial Br. at 25.

Trial Br. at 24-25. Of course, none of this means that North American chloride TiO2 customers *cannot* arbitrage chloride TiO2, only that they may *choose not to* engage in arbitrage even where price differences exist in order to reap other benefits (including cost savings) that come from continuing to source TiO2 directly from suppliers. These same preferences are also the ingredients of individualized pricing negotiations. In the end, these arguments simply put the onus back on Complaint Counsel's economic analysis because the key question is whether customers will be able to defeat a SSNIP in the proposed relevant market. The evidentiary record here shows that TiO2 customers and suppliers can and do engage in arbitrage of TiO2; the salient question is whether they do so in sufficient volume to defeat a SSNIP from a hypothetical monopolist. As the next section shows, when the hypothetical monopolist test is correctly applied, the results show that customers *can* defeat a SSNIP from a hypothetical monopolist and thus chloride-process TiO2 sales to North American customers cannot be a relevant market for antitrust analysis.

c. Complaint Counsel Cannot Rebut Respondents' Criticisms of the Alleged North American Market.

Complaint Counsel briefly attempts to rebut Respondents' criticisms of its proposed relevant market. That rebuttal falls woefully short.

First, Complaint Counsel attacks a strawman by claiming that Respondents have only pointed to "the existence of international trade" to define the relevant antitrust market. FTC Post-Trial Br. at 26. In reality, Respondents have shown, including through testimony from economic expert Dr. Shehadeh, that *not only* are TiO2 global trade flows significant, but these trade flows vary over time in response to demand in North America, which shows significant "elasticity of import supply over time." Respondents' FOF ¶ 295 (quoting Shehadeh, Tr. 3217-18). This is critical because it "reflects the flexibility of import supply to respond to changes in demand, including demand that would arise in response to a SSNIP… in the hypothetical monopolist test."

Respondents' FOF ¶ 297 (quoting Shehadeh, Tr. 3217-18); PX5000-033 (Figure 12). The elasticity of North American imports is observable both in terms of quantity and origin of imported TiO2 supply and at both the global and the individual producer level. Respondents' FOF ¶¶ 294-302. North American exports exhibit the same flexibility, with North American producers choosing to export TiO2 ranging from 400,000 metric tons annually to 700,000 metric tons annually between 2002 and 2016. Respondents' FOF ¶ 304. In other words, observable, real-world trade flows in TiO2 demonstrate that the relative quantities of North American TiO2 imports and exports vary and adjust in response to North American demand. This is TiO2 that is "on the water," which can be redirected into or out of North America depending on the demand from North American consumers.

Second, Complaint Counsel wrongfully dismisses the significance of global price co-movement. Complaint Counsel says that "[p]rice movements say nothing" about "whether customers change their purchases in response to price changes" but that assertion is absurd as a matter of economics and is inconsistent with peer-reviewed economic literature by FTC economists. FTC Post-Trial Br. at 27; Respondents' FOF ¶ 325. Dr. Shehadeh testified at length about the data on global price co-movement, which "consistently show[s] that the co-movement in prices is statistically and economically significant across a variety of statistical tools, including correlations and cointegration." Respondents' FOF ¶ 317 (quoting Shehadeh, Tr. 3231). These are the same methods that FTC economists use and are "among the broadly applied techniques" for defining antitrust markets. Respondents' FOF ¶ 317 (quoting Shehadeh, Tr. 3233-38). Indeed, this kind of evidence "fits squarely into the fabric of economic evidence that is called for in the Merger Guidelines when describing the hypothetical monopolist test and [is] consistent with the economics literature." Respondents' FOF ¶ 317 (quoting Shehadeh, Tr. 3243-44).

The Pori fire in Europe, which Complaint Counsel misinterprets, amply shows how the significant, variable global TiO2 trade flows and the co-movement of global TiO2 prices demonstrate a global market for TiO2. In January 2017, a fire at a Venator sulfate-process TiO2 plant halted production, effectively removing [redacted] of TiO2 per year from the global market. Respondents' FOF ¶ 321 (quoting Hill, Tr. 1821). Although this was a regional event, the fire affected the flow of global TiO2 supply and prices worldwide. [redacted] Complaint Counsel offers no reason why a regional event like the Pori fire would have worldwide ramifications for both price and supply if the market for TiO2 were *not* global in nature.

Finally, Complaint Counsel continues to defend Dr. Hill's indefensible application of the hypothetical monopolist test, which draws the relevant geographic market too narrowly because Dr. Hill "constrain[s] the ability of customers to turn to alternative sources of supply outside of North America." Respondents' FOF ¶ 343 (quoting Shehadeh, Tr. 3205-06). Specifically, "Dr. Hill imposes on his hypothetical monopolist test that the hypothetical monopolist controls not just current and future supply in his candidate market, but current, future, and all potential supply in the candidate market and, therefore, inappropriately restricts the alternatives to which customers could … turn in response to a SSNIP." Respondents' FOF ¶ 343 (quoting Shehadeh, Tr. 3257-

58). Contrary to Complaint Counsel's assertions, the Merger Guidelines do *not* require such an inappropriately restrictive approach. According to Complaint Counsel's interpretation, "in a market based on the location of customers, as here, the hypothetical monopolist" controls "all sales made to North American customers, 'regardless of the location of the supplier making those sales.'" FTC Post-Trial Br. at 27-28 (quoting PX9085 (Horizontal Merger Guidelines §4.2.2)). But granting the hypothetical monopolist this kind of *total* control over all *potential* supply would predetermine the results of the test every time—any proposed geographic market based on the location of customers would pass. That is because nearly any time a customer within the proposed geographic market purchased product from anywhere outside the proposed geographic market, that sale would automatically qualify as a "sale[ ] made to North American customers" and therefore would be controlled by the hypothetical monopolist under Complaint Counsel's (and Dr. Hill's) formulation. *See* FTC Post-Trial Br. at 27. The only time Dr. Hill allows for customers inside North America to successfully purchase TiO2 from someone other than the hypothetical monopolist is when "a customer buy[s] product in one region and transport[s] that product by itself to another region." Respondents' FOF ¶ 345 (quoting Hill, Tr. 1905).

The Merger Guidelines do not require — or, indeed, even allow — such a crabbed definition of "arbitrage;" they merely suggest *for example* ("e.g.") that a customer could travel to obtain product from outside the geographic region, without suggesting that a literal definition of "travel" is essential to the hypothetical monopolist test in the context of a market defined by customer location. *See* PX9085 (Horizontal Merger Guideline § 4.2.2) ("A region forms a relevant geographic market if [a SSNIP] would not be defeated by substitution away from the relevant product or by arbitrage, e.g., customers in the region travelling outside it to purchase the relevant product.").

Complaint Counsel does not follow the economic logic of the Merger Guidelines' approach. For example, under Complaint Counsel's and Dr. Hill's interpretation of the Merger Guidelines, the hypothetical monopolist controls existing sales of TiO2 from Chemours' plant in Altamira, Mexico when those sales are destined for customers in the U.S. and Canada. Yet, if customers in the U.S. and Canada responded to a SSNIP by seeking *additional* supply of TiO2 from Chemours' plant in Altamira, Mexico—supply that Chemours had previously been exporting elsewhere—that new supply being sent into the U.S. and Canada at a customer's request could not be used to defeat a SSNIP. In fact, that new supply would *also* be controlled by the hypothetical monopolist. That is not what the Merger Guidelines require. In fact, other courts applying Merger Guidelines § 4.2.2 (describing markets defined by customer location) have not interpreted the guideline in that way. Instead, they have asked whether producers outside the geographic market "could defeat a small but significant nontransitory increase in price ('SSNIP') by [a hypothetical monopolist] by expanding capacity or diverting production to ship" product into the geographic market. *Gulf States Reorg. Grp., Inc. v. Nucor Corp.*, No. 1:02-cv-2600-RDP, 2010 WL 11561917, at *17 (N.D. Ala. Sept. 2, 2010).

Here, the evidence shows that North American TiO2 consumers already purchase TiO2 from suppliers outside of that region, and that suppliers outside of the region have variable supply that could be redirected or repatriated to North America in the event of a SSNIP. *See* Respondents' FOF ¶ 347. When the test is correctly applied, a hypothetical monopolist of the market for TiO2 sales to North American customers could not profitably impose a SSNIP; Complaint Counsel's proposed market of sales to North American consumers is too narrow to be a relevant market.

B. The Proposed Acquisition Would Not Substantially Increase Concentration in the Relevant Market and Is Not Presumptively Unlawful.

Complaint Counsel only calculates market concentration statistics under its proposed relevant market of sales of chloride TiO2 to North American (meaning U.S. and Canadian) customers. FTC Post-Trial Br. at 29. As shown, however, this proposed market is much too narrow. Because Complaint Counsel offers no alternative calculations, there is no basis to determine that the Tronox-Cristal transaction is presumptively anticompetitive. Respondents' FOF ¶ 455. Moreover, Respondents' economic expert has shown — and Complaint Counsel has not refuted — that under the properly defined geographic and product market (a global rutile TiO2 market), the post-merger Herfindahl-Hirschman Index ("HHI") shows levels of concentration too low to "raise the prospect of anticompetitive effects." Respondents' FOF ¶ 453 (quoting Shehadeh, Tr. 3325). Complaint Counsel's own economic expert admitted that "if market shares should be calculated based on global rutile TiO2 capacity and not based on sales to North American customers" then Dr. Hill has "not demonstrated that this transaction is anticompetitive in a global market." Respondents' FOF ¶ 458 (quoting Hill, Tr. 1948).

C. No "Documented History of Coordination in the TiO2 Industry" Exists to Support Complaint Counsel's Alleged Presumption.

Complaint Counsel yet again puts forward the same two summary judgment decisions in civil price fixing cases with the bold and untrue assertion that these cases amount to "[d]ocumented [h]istory of [c]oordination in the TiO2 [i]ndustry." FTC Post-Trial Br. at 30. Nothing could be further from the truth.

In *Valspar Co. v. E.I. Du Pont De Nemours and Co.,* 873 F.3d 185 (3rd Cir. 2017), and *In re Titanium Dioxide Antitrust Litigation*, 959 F. Supp. 2d 799 (D. Md. 2013), the Third Circuit and District of Maryland, respectively, made *no* findings about any alleged history of coordination or price-fixing in the TiO2 industry. Rather, in *Valspar*, the Third Circuit *rejected* allegations of

price-fixing in the TiO2 industry, finding that "after reviewing the record as a whole, … Valspar's evidence [of price-fixing] did not meet our standard to survive summary judgment." 873 F.3d at 202. The passage Complaint Counsel cites as "highlight[ing] the oligopolistic market conditions in TiO2," FTC Post-Trial Br. at 30, stands for no such thing; it merely addresses one "factor" in the price-fixing analysis, which asks whether a "motive to enter a conspiracy" existed. *Valspar*, 873 F.3d at 196. The Third Circuit thought this factor was satisfied because, *as alleged*, the TiO2 market *could* support a motive to enter a conspiracy, not that any such conspiracy actually existed or that producers in the TiO2 market necessarily possessed and acted with a conspiratorial motive. *Id*. at 197. That is a far cry from Complaint Counsel's assertion that *Valspar* provides "[d]ocumented [h]istory of [c]oordination in the TiO2 [i]ndustry." FTC Post-Trial Br. at 30.

In re Titanium Dioxide does not serve Complaint Counsel's purpose any better. 959 F. Supp. 2d at 830. The District of Maryland merely considered a motion for summary judgment to determine whether the plaintiffs in the case had presented enough evidence from which a jury *could* find that the plaintiffs had proven their allegations of price-fixing. To that end, the District of Maryland concluded that plaintiffs had provided "the kind of circumstantial evidence that … *could* lead a jury to reasonably infer a conspiracy in restraint of trade." *Id*. (emphasis added). But just as in *Valspar*, the court did not find that any "[d]ocumented [h]istory of [c]oordination in the TiO2 [i]industry" existed. *See* FTC Post-Trial Br. at 30. Rather, determining the ultimate truth, falsity, and the significance of the facts alleged belonged with the jury, not the District Court. 959 F. Supp. 2d at 826 ("Considering the parallel price increases in combination with the other evidence discussed below, the determination whether these price increases are the result of independent or collusive behavior is a decision for the jury.").

Perhaps sensing that it has overstated the significance of these cases, Complaint Counsel attempts to show that it has relied on them only for "events that cannot be disputed." FTC Post-Trial Br. at 30 & n.29. Two such "indisputable events" seem to be the summary judgment decisions themselves, which are merely assessments of what a jury *could* find based on the evidence alleged. Complaint Counsel's remaining indisputable event is that "competitive conditions in TiO2 were of [such] a character that [they] spurred civil allegations of price fixing in two different jurisdictions." *Id*. In other words, Complaint Counsel would have the Court "strengthen the presumption" against this transaction simply because at some point, private plaintiffs in two jurisdictions decided to file lawsuits alleging price-fixing behavior against some TiO2 suppliers. That is extraordinary. In our legal system, simply filing a complaint is probative of nothing; what matters is the *evidence* produced in support of that complaint and particularly, how a judge or jury evaluates the truth or falsity of it. No conclusions can be drawn against Respondents from the simple fact that two lawsuits were filed in the past.

Lastly, Complaint Counsel belatedly acknowledges Respondents' point that TiO2 producers no longer participate in an information-sharing program that featured prominently among the allegations of anticompetitive conduct in *Valspar* and *In re Titanium Dioxide*. FTC Post-Trial Br. at 31-32. Complaint Counsel brushes this development aside on the grounds that both cases also involved other evidence. But that does not change the fact that the summary judgment considered *all* of the allegations against the TiO2-producing defendants, which prominently included the TDMA information-sharing program. Complaint Counsel has no way of knowing how the Third Circuit's and District of Maryland's analysis would have changed if this key element had simply dropped out of the *Valspar* and *In re Titanium Dioxide* cases altogether.

Complaint Counsel points to earnings calls as a present-day substitute for the defunct TDMA information-sharing program. The comparison is inapt. First, the TDMA information-sharing program pooled information from TiO2 producers far differently than the high-level information sometimes contained in earnings calls. The TDMA information-sharing program "aggregated and blinded 'members' monthly sales, production, and inventory data worldwide,'" *Valspar*, 873 F.3d at 199, which plaintiffs argued "allowed each conspirator to calculate its own market share and thus deduce whether it was getting its fair share of the conspiracy's profits," *id*. at 198. Nothing similar occurs through earnings calls. Second, the *Valspar* court made clear that merely exchanging pricing information is not anticompetitive in and of itself. Rather "the exchange of price data … can in certain circumstances increase economic efficiency and render markets more, rather than less, competitive." *Id*. at 198. Complaint Counsel ignores these inconvenient statements from the *Valspar* court.

II. NO EVIDENCE OF LIKELY HARM BOLSTERS COMPLAINT COUNSEL'S ALLEGED PRESUMPTION.

Complaint Counsel cannot show that any evidence of likely harm bolsters the presumption of anticompetitive effects that Complaint Counsel (incorrectly) alleges it is entitled to in this case. Here, Complaint Counsel attempts to show "direct evidence that the Merger is likely to lead to anticompetitive effects," based on a conversation between executives at Tronox and PPG about harmonizing Tronox and Cristal prices after that transaction. FTC Post-Trial Br. at 34.

To begin, Respondents' have already explained at length why PPG executive Paul Malichky's testimony about his price-related conversations with Tronox executives should not be credited. Respondents' Post-Trial Br. at 33-41. Malichky's testimony was evasive, dishonest, and both omitted critical details and obscured events and their significance. Respondents reiterate

those arguments here. The Court should not credit Malichky's self-serving testimony about the pricing terms that Tronox executives discussed.

Nor can Malichky's testimony, even if taken at face value, constitute "direct evidence" that the Tronox-Cristal transaction will lead to anticompetitive effects. Malichky himself admitted that Tronox executives at the price-discussion meeting *did not know what price Cristal was charging PPG*. Malichky, Tr. 563-64. [redacted]

Nor is it accurate to say that Tronox executives left Malichky's testimony unrebutted. FTC Post-Trial Br. at 34. Tronox executive Ian Mouland testified about the price-discussion meeting with Malichky at length, disagreeing with at least Malichky's initial, self-serving portrayal of the meeting and providing other details that Malichky either did not provide or sought to avoid. Mouland described a series of calls with Malichky leading up to the price-discussion meeting, including one in which Malichky told Mr. Mouland that PPG "had a standard playbook … of how they deal with mergers and acquisitions for vendors that supply them" and that "they would generally oppose these sorts of acquisitions and mergers unless there were benefits directly accruing to PPG." Mouland, Tr. 1216. Mouland also described how he *did not know* the price at which Cristal was selling TiO2 to PPG at the time of the price-discussion meeting with Malichky. Mouland, Tr. 1218. Mouland still does not know the Cristal price to PPG even today. Mouland, Tr. 1218-19. Additionally, Mouland testified that Malichky took the pen in drafting a memorandum of understanding ("MOU") to address price terms after the transaction, and that Tronox was ready to sign that MOU with PPG. Mouland, Tr. 1219. [redacted]

[redacted] Malichky, however, despite drafting the MOU, was never willing to sign the agreement. Mouland, Tr. 1219. [redacted]

Complaint Counsel tries to buttress its interpretation of the price-discussion meeting with PPG by additionally quoting an internal Tronox email from Mouland in which Mouland expresses that he is [redacted] But Complaint Counsel omits the context of that email, which Mouland thoroughly explained at trial. [redacted] Thus, consistent with Tronox's fiduciary obligations to its shareholders, Mouland expressed his view in this email that Cristal's price related to its Brazilian plant probably "isn't sustainable" and that Tronox would not be able to keep that price if it resulted in a loss, as Mouland believed it likely would. Mouland, Tr. 1271.

In short, Complaint Counsel's "direct evidence" of post-transaction anticompetitive effects wilts under scrutiny. It is a fact that upon consummating this transaction, many TiO2 customers who are currently supplied by both Tronox and Cristal will face two prices from the combined company, as it is unlikely that Tronox and Cristal currently charge the same price to their customers in every instance. Mouland, Tr. 1220-21. That means that post-transaction, the combined company will need to "harmonize" prices, which "could be prices coming down, could be prices going up" depending on the particular circumstances of each customer. Mouland, Tr. 1220-21. Complaint Counsel's so-called "direct evidence" of anticompetitive effects in this case actually boils down to a good-faith negotiation on the part of Tronox executives to manage the inevitable price harmonization process for PPG in a way that accommodated PPG's concerns and protected PPG from immediate price swings and volatility post-transaction.

A. The Proposed Acquisition Would Not Increase the Likelihood of Coordination in the TiO2 Industry.

Tronox's acquisition of Cristal, contrary to Complaint Counsel's assertions, would not increase the likelihood of coordination in the TiO2 industry.

Complaint Counsel overstates the transparency of the TiO2 industry, which it argues "heightens the opportunities for coordination/interdependent conduct." FTC Post-Trial Br. at 38. Complaint Counsel sees the TiO2 industry as transparent because "major producers have regularly announced their intentions to raise price, whether by press release or letters to customers." FTC Post-Trial Br. at 38. With no support, Complaint Counsel asserts that price announcements are a way "the industry can reach a consensus on price." *Id*.

In fact, public price increase announcements or letters to individual customers announcing price increases are just "the starting point of any price negotiation." Respondents' FOF ¶ 76 (quoting Romano, Tr. 2230). These announcements do not provide any information about a TiO2

producer's actual pricing, and producers do not know the true amount of their competitors' negotiated price increases. Respondents' FOF ¶ 76. [redacted] In fact, for many North American customers in particular, price increase announcements are actually *required* by the terms of customer supply contracts with TiO2 producers. North American customers typically enter such supply contracts with producers, and these contracts often include price protections, which insulate a customer from a price increase for a set period of time. Respondents' FOF ¶ 82. [redacted]

Thus, Complaint Counsel's examples of price announcements occurring close in time have little if any significance to anything that matters here. *See* FTC Post-Trial Br. at 39. Complaint Counsel has not and cannot show that these price increases actually translated to higher prices for real customers. The announcements are aspirational, intended only to be a jumping off point for the inevitable, individualized customer negotiations that will follow.

Complaint Counsel also overstates the role that competitive intelligence plays in informing TiO2 producers about the actions of their competitors. FTC Post-Trial Br. at 41. When TiO2 producers obtain information from customers, they have no way of knowing whether that

information is accurate. As Brian Christian of Kronos testified: [redacted] John Romano echoed the same sentiment: [redacted]

Complaint Counsel also relies on a series of examples of Tronox refusing to chase price lower in every instance. FTC Post-Trial Br. at 42. Once again, Complaint Counsel did not use most of these documents at trial where a knowledgeable witness could have provided meaningful context; instead, Complaint Counsel spins the documents in a self-serving way. *See* Respondents' Reply FOF ¶¶ 455, 457. But Complaint Counsel's cherry-picked snippets are misleading. In fact, Tronox engages in sound business judgment — not anticompetitive behavior — when it declines to chase price lower in response to every customer request.

Specifically, Tronox distinguishes itself among TiO2 producers through its "Total Value Proposition." Respondents' FOF ¶ 75. This means that Tronox provides something far more valuable to customers than simply the lowest-priced TiO2. Tronox provides consistent product of high quality, with customer-oriented terms of sale and technical collaboration. Respondents' FOF ¶ 75. Tronox includes in its value proposition additional services related to research and development, technical sales, and long-term supply opportunities. Respondents' FOF ¶ 75 (citing Romano, Tr. 2228-29). In light of this sound business strategy, Tronox reasonably prefers *not* to chase every lower-priced offer allegedly put forward to a customer by a competitor. For example, Ian Mouland of Tronox explained during the FTC's investigative process one of the specific

documents Complaint Counsel now cites. *See* FTC Post-Trial Br. at 42 (quoting FTC FOF ¶ 528); Respondents' Reply FOF ¶ 528. [redacted]

Complaint Counsel takes its theory of industry coordination so far that even when confronted with examples of Tronox and Cristal aggressively competing, Complaint Counsel sees this as "Cristal … depart[ing] from an accommodative strategy" and "forcing Tronox to respond to aggressive moves." FTC Post-Trial Br. at 43. In other words, Complaint Counsel's theory is that Cristal and Tronox do not compete aggressively with their competitors … until they do.

Complaint Counsel is similarly confused about the role that fierce competition currently plays in the TiO2 industry. Complaint Counsel says it "misses the point" to argue that the TiO2 industry is currently fiercely competitive because "Complaint Counsel is seeking to block the proposed merger precisely to ensure that any competition that does exist is not diminished." *See* FTC Post-Trial Br. at 44. Yet in the next paragraph, Complaint Counsel avows that competition does not exist in the TiO2 industry, which is instead "an oligopoly characterized by 'anticompetitive interdependence.'" FTC Post-Trial Br. at 45. The reality is that Complaint Counsel is wrong on both scores.

As Respondents have amply shown, the TiO2 industry *is* fiercely competitive, Respondents' FOF ¶¶ 463-539, and that fact matters. There are large players in the TiO2 industry (namely, Chemours) with a very low cost basis for producing TiO2, and at the same time, increasing levels of low-cost competition from China are also driving down prices. Respondents' FOF ¶ 463, 466. The result is fierce competition over price — and the Court need not take the word of Tronox executives for it. *See* FTC Post-Trial Br. at 45 (arguing that "Respondents' self-serving testimony from their own executives" about fierce competition "should be given little weight."). Brian Christian of Kronos testified that the TiO2 market is "[v]ery competitive" on price" and that "[f]iercely competitive … would probably be a good choice of words to describe it." Respondents' FOF ¶ 463 n.54. Moreover, this fierce competition matters. Complaint Counsel

argues that many elements present in the TiO2 industry "[i]ncrease the [l]ikelihood of [c]oordination in an [a]lready [v]ulnerable [m]arket." FTC Post-Trial Br. at 36. But the real-world evidence showing that the TiO2 industry is fiercely competitive means the industry is not "vulnerable" to coordination in the first place and that the likelihood of coordination is not likely to appreciate post-transaction.

B. The Proposed Acquisition Would Not Increase Tronox's Incentive Nor Its Ability to Reduce Output Unilaterally.

Complaint Counsel's unilateral output reduction argument is based on fantasy, premised on the false idea that TiO2 producers can and do reduce output to inflate prices. In reality, TiO2 producers, including Tronox and Cristal, have every incentive to run their plants full-out at all times in order to reduce marginal costs and maximize profits.

Historical experience in the TiO2 industry bears this reality out. While TiO2 producers have on rare occasions reduced output, they have done so in dire economic circumstances, when the cyclical market was in a long-term down turn, sales were slow, inventory was high, and cash reserves were unacceptably low due to excess inventory. Slowing down production in these circumstances does *not* result in higher prices but merely corrects the inventory imbalance and re-calibrates TiO2 production to meet actual demand. Economic analysis of these production reductions bears this out: TiO2 producers resume normal production without seeing increased prices, and in fact, prices have continued to decline even after a temporary output reduction is complete and normal production has resumed. While the Merger Guidelines recognize that a merger can *theoretically* create a larger combined firm that is incentivized to reduce output and is better able to reap the benefits of higher prices that such output reduction causes, the production realities of the TiO2 industry make that impossible here. As Respondents demonstrate, all of

Complaint Counsel's unilateral output reduction scenarios are, in fact, unprofitable. Unilateral output reduction is simply not likely to occur as a result of the Tronox-Cristal transaction.

1. North American TiO2 Producers Do Not Have a History of Reducing Output To Support Pricing.

Complaint Counsel is flatly wrong to argue that North American TiO2 producers have a history of reducing output to support pricing.

First, Respondents' initial post-trial submissions explain that TiO2 producers generally run their TiO2 plants flat out because they incur substantial costs by reducing or shutting down production. Respondents' FOF ¶¶ 572-91; Respondents' Post-Trial Br. at 7-8. To summarize that discussion briefly here, the TiO2 industry is highly capital-intensive and TiO2 plants "are large[and] cost a great deal of money to build," all of which means that "the harder you run [TiO2 plants], the lower your fixed costs per pound of product produced." Respondents' FOF ¶ 572 (quoting Stern, Tr. 3712). As a result, TiO2 producers have "an incentive to run their plants at high operating rates." Respondents' FOF ¶ 575. In the TiO2 industry, "everybody wants to run their mine or their pigment plant at full capacity, because that's the most economical way to run them." Respondents' FOF ¶ 573 (quoting Turgeon, Tr. 2636-37). Moreover, it is not easy to restart a TiO2 plant after it has been idled — it is not "as easy as flipping a switch." Respondents' FOF ¶ 578 (quoting Stern, Tr. 3751). Restarting a plant is difficult because a plant must be carefully managed to return to the necessary conditions of temperature and material flow; where an obstruction has formed, it may be necessary to require an employee to clear the obstruction with a jackhammer. Respondents' FOF ¶ 578. These and other factors make restarting production at a TiO2 plant very expensive. The plant environment is corrosive, and once a production line has been idled, it will require significant maintenance and capital costs before restarting, including expenses as significant a relining a chlorinator. Respondents' FOF ¶ 579.

All of this is industry reality for TiO2 producers, not simply a view held by Tronox executives. As Brian Christian of Kronos testified, it is "not a wise strategy to curtail" production at TiO2 facilities because "there's a significant cost to doing that." Respondents' FOF ¶ 583 (quoting Christian, Tr. 865-66). For that reason, Kronos "runs its plants flat-out." Respondents' FOF ¶ 584. Christian confirmed that TiO2 plants cannot simply be "dialed back," and that this is especially true of chloride-process facilities as compared to sulfate-process facilities. Respondents' FOF ¶ 585 (quoting Christian, Tr. 866-67). Christian could not identify a *single* TiO2 producer, including Kronos, that had — at any time — "cut production at a plant solely for purposes of trying to increase price." Respondents' FOF ¶ 588 (quoting Christian, Tr. 873). Indeed, even after extensive discovery in this matter, Complaint Counsel *still* could not identify a *single* example where *any* TiO2 producer adjusted output "for the purpose of supporting higher prices rather than maintenance or operational issues." Respondents' FOF ¶ 589 (quoting FTC Response to Cristal Interrogatory No. 1).

Second, Respondents' initial post-trial submissions further explain that when TiO2 producers have temporarily engaged in output reduction, it has *not* been for the purpose of inflating price, nor has output reduction had that effect. Respondents' Post Trial Br. at 56-57; Respondents FOF ¶¶ 541-71. Tronox has been forced on a handful of occasions to reduce TiO2 production due to severe market conditions and unsustainable financials.[3] In 2012, Tronox was forced to temporarily reduce its TiO2 output due to dire economic circumstances. Respondents' FOF ¶¶

[3] Complaint Counsel also cites Tronox's closure of its plant in Savannah, Georgia as an example of the "well documented" "history of curtailing North American production and taking capacity offline to support higher North American chloride TiO2 pricing." FTC Post-Trial Br. at 46. This is an egregious misstatement of the facts. After declaring bankruptcy in 2009, Tronox was forced to close its Savannah, Georgia plant "as a result of the bankruptcy" and because that plant was unable to run "within [its] own cash flow." Respondents' FOF ¶ 544 (quoting Romano, Tr. 2249; Dean, Tr. 2947). The decision stemmed from the bankruptcy, not from any attempt to reduce North American TiO2 production to support price.

547-48. At that time, Tronox's total sales profile had dropped 21 percent from the previous year, including a 43% drop in the Asia-Pacific region in just a single quarter. Respondents' FOF ¶ 547. Worldwide demand for TiO2 had "declined precipitously," leaving Tronox with "a little bit more than twice a normal level of inventory" of both pigment and feedstock. Respondents' FOF ¶ 548 (quoting Arndt, Tr. 1400). Yet even though Tronox temporarily reduced its TiO2 production, price continued to move downward for the succeeding four years. Respondents' FOF ¶ 549. In 2015, Tronox again faced dire economic circumstances due to a "long period of downturn" in the TiO2 industry, which lasted from approximately 2012 to 2016. Respondents' FOF ¶ 550-551 (quoting Turgeon, Tr. 2637). At that time, Tronox was posting losses quarter after quarter and was running its assets at cost, yet still, Tronox faced an oversupply of TiO2 pigment and its inventory levels were "very high," totaling close to a billion dollars in value. Respondents' FOF ¶ 551. Tronox did not have enough cash to continue building inventory, and its profitability was very bad, so Tronox slowed down production as a way of managing unsustainable circumstances. Respondents' FOF ¶ 554.

At no point did Tronox reduce its output to drive prices higher. Rather, Tronox sought only to manage its lack of profitability in light of unsustainably weak demand, low prices, limited cash flows, and excessive inventory. Respondents' FOF ¶ 560. Tronox had no real alternative but to reduce output: "[Y]ou can't take the product and … dump it in the ocean. You can't drink it. It's either you sell it or you stop making it. … [T]he only lever … is reducing production." Respondents' FOF ¶ 559 (quoting Stern, Tr. 3747). Here again, Tronox's decision to reduce output reduction did not reduce sales, Respondents' FOF ¶ 562 (quoting Turgeon, Tr. 2649-50) ("we never stopped selling"), and Tronox returned to full production once inventory levels returned to

"normal," yet global prices continued to fall even after Tronox returned to full production. Respondents' FOF ¶ 563.

While Tronox had no choice but to reduce output during these time periods in order to correct unsustainable inventory build-up, there should be no illusion that the decision was easy or without negative consequences. In fact, in 2015, Tronox faced serious financial penalties as a result of temporarily idling portions of its TiO2 production. Respondents' FOF ¶ 566. Moody's downgraded Tronox's credit rating in 2015 because of its reduced cash flow, high inventory, and high debt. Respondents' FOF ¶ 566. Nonetheless, Tronox pursued this costly strategy as the only means of avoiding a second round of bankruptcy. Respondents' FOF ¶ 567.

Complaint Counsel never acknowledges these economic realities, and provides no counterargument to rebut them. In fact, many of Complaint Counsel's stray quotations from Tronox documents explain exactly the series of events described here, yet Complaint Counsel attributes to those statements a nefarious, anticompetitive, price-inflating motive. For example, Complaint Counsel quotes a Tronox Director as advising the former CEO that "we slow down production so that we minimize or eliminate the inventory build that will occur if we continue running at the existing rates." FTC Post-Trial Br. at 47 (quoting FTC FOF ¶ 573). Complaint Counsel also quotes a Tronox Board Update that explained that "capacity utilization will be reduced to drive down inventories for the balance of 2012 and into 2013." FTC Post-Trial Br. at 47 (quoting FTC FOF ¶ 596). Both statements are accurate. In 2012, Tronox had built up unsustainably high inventories, which were restricting cash flow and were inconsistent with demand in the market at the time. Tronox reduced production to bring inventories back to normal levels and align its supply with what demand for TiO2 could reasonably support. The goal was *not* to increase price, and indeed, Tronox's actions did not increase price, which continued to fall

for the next four years. Respondents' FOF ¶ 549. The real-world history of the TiO2 industry simply does not bear out Complaint Counsel's theory that TiO2 producers have historically engaged in output reduction to support price.

2. Complaint Counsel Lacks Sound Economic Models to Predict That the Merged Firm Will Reduce Output.

In less than two pages, Complaint Counsel attempts to explain how economic modeling from its expert, Dr. Hill, predicts that the merged firm will find it profitable to reduce output to the detriment of customers. Respondents have already thoroughly dismantled Dr. Hill's output-reduction economic modeling in their initial post-trial submissions. In Respondents' post-trial brief, Respondents have shown that Dr. Hill's testimony in general, and his "Capacity Closure Model" in particular, is not reliable and should not be credited. Respondents' Post-Trial Br. at 41-46. Dr. Hill's "Capacity Closure Model" has never been peer reviewed or tested, rests on artificial constraints that bias the model in favor of Complaint Counsel's case, and generates outcomes that are internally inconsistent and that fail Dr. Hill's own validity tests. Respondents' Post-Trial Br. at 42-43. Even Dr. Hill's own work demonstrates that the "Capacity Closure Model" is extremely sensitive such that even small changes or corrections lead to dramatically different results. Respondent's Post-Trial Br. at 44. Nor is Dr. Hill's "Capacity Closure Model" a good fit for assessing the real-world TiO2 industry. Dr. Hill claims the model can be checked against observed behavior in the real world to test its validity, but actually running Dr. Hill's model for Chemours shows that the model predicts events that reality does not bear out. Respondents' Post-Trial Br. at 55-56. Respondents' proposed findings of fact and conclusions of law also explain the flaws in Dr. Hill's "Capacity Closure Model" in detail. Respondents' FOF ¶¶ 609-85.

Dr. Hill's Cournot model fares no better, as Respondents have also already thoroughly explained. Respondents' FOF ¶¶ 686-704. Respondents' economic expert, Dr. Shehadeh,

conducted three validity tests for Dr. Hill's Cournot model, all of which the model failed. Respondents' FOF ¶ 690. Specifically, Dr. Hill's model predicts price increases even for mergers that involve unconcentrated markets according to the Merger Guidelines; it predicts that the proposed transaction will not be profitable; and the model builds in a "glaring inconsistency" with the real world by assigning too much market power and thereby implying that large suppliers have unrealistically low costs. Respondents' FOF ¶¶ 693-94; 696-97; 698-701. When Dr. Shehadeh corrected Dr. Hill's Cournot model according to FTC methods for addressing its "glaring inconsistency" with real-world market power and cost figures, the model predicted that this transaction will *not* have anti-competitive effects. Respondents' FOF ¶¶ 702-703. By not applying these FTC adjustments, Dr. Hill's Cournot model is fundamentally flawed and cannot be relied on for predictions about post-transaction anticompetitive effects. Respondents' FOF ¶ 703.

Complaint Counsel cannot point to sound economic modeling that predicts anticompetitive effects as a result of this transaction.

3. Complaint Counsel Cannot Overcome Respondents' Criticisms of the Alleged Evidence of Unilateral Effects.

Complaint Counsel's attempts to rebut Respondents' criticisms of the alleged evidence of post-merger unilateral effects miss the mark.

Complaint Counsel claims that it is irrelevant that Respondents' have only reduced output historically under dire economic circumstances and never for the purpose of raising prices because "Respondents' past output reductions show that they can and do reduce output when they choose to, and understand its impact on price." FTC Post-Trial Br. at 53. This is silly. Respondents have shown that past output reduction has always been a matter of last resort because TiO2 plants are not meant to be slowed or shut down and the consequences of doing so are significant. Respondents cannot simply reduce output at a pigment plant because "they choose to," and the

facts of these real-world output reductions prove that reductions do not move prices higher, contrary to Complaint Counsel's claims. *See, infra,* section II.B.1.

Dr. Hill has not shown that Respondents reduced output during periods of prosperity. *See* FTC Post-Trial Br. at 53. Dr. Hill points to high variable margins as evidence that circumstances were not dire when Respondents temporarily reduced output, FTC Post-Trial Br. at 53 (citing FTC's FOF ¶¶ 600, 604, 612, 626), but variable margins do not tell whether a plant is profitable or not. Respondents' Reply FOF ¶ 600 (citing Stern, Tr. 3766-67). Variable margins do not account for capital expenditures, fixed costs, or most cash costs. Respondents' FOF ¶ 625 (quoting Stern, Tr. 3767). In fact, profitability during these periods was falling. Respondents' FOF ¶ 625 (citing Stern, Tr. 3767). Inventory was not lower than average during these periods, either, *see infra* section II.B.1, and relying on Dr. Hill for contrary testimony amounts to impermissible reliance on an expert for facts that require testimony from a fact witness or documents to establish. Respondents' Reply FOF ¶ 604.

Likewise, Dr. Hill *did* underestimate the response of rivals in his "Capacity Closure Model," despite Complaint Counsel's contrary assertion. *See* FTC Post-Trial Br. at 54. Complaint Counsel claims that Dr. Hill's choice to restrict repatriation of exports in his "Capacity Closure Model" was based on his analysis of historical data suggesting North American producers had not redirected exports back to North America in the past. FTC Post-Trial Br. at 54. If that is true, then whatever "analysis" Dr. Hill conducted of historical data was deeply flawed, because Dr. Hill's "Capacity Closure Model" restricts the repatriation of exports *no matter how big or small the hypothetical price increase is*. Respondents' FOF ¶ 637. Even if the North American price rose by *79%*, Dr. Hill's model would still "assume[ ] no redirection of exports currently leaving North America." Respondents' FOF ¶ 638. Not only does that not comport with common sense, it does

not comport with the testimony offered in this case. Complaint Counsel points to the deposition of Chemours' representative, but ignores that the deposition testimony explicitly rejects Dr. Hill's capacity-closure assumptions. Peter O'Sullivan, representing Chemours, testified at his deposition as follows:

[redacted] In other words, Chemours would repatriate exports if North American prices rose merely 5-10% higher than prices in other regions — a fact that is irreconcilable with Dr. Hill's "Capacity Closure Model," which assumes *no* export repatriation even for North American price increases as great as 79%. [redacted]

Complaint Counsel also attempts to rehabilitate Dr. Hill's failure to perform a validity test for his "Capacity Closure Model" based on Chemours' current behavior in the market. FTC Post-Trial Br. at 58. It is irrelevant, however, that [redacted]

[redacted]

Nor are Complaint Counsel's counterarguments against Respondents' criticisms any more effective for rehabilitating Dr. Hill's Cournot model. Complaint Counsel acknowledges that Dr. Hill's Cournot model predicts anticompetitive harm even from a merger in an unconcentrated market, but Complaint Counsel is untroubled by this fact because "[w]hile Cournot may technically predict a price increase from a merger in an unconcentrated industry, the measure would be dramatically smaller" than the predicted price increase for this merger. FTC Post-Trial Br. at 58. But the fact that the Cournot model is wrong in small ways *should* mean that it cannot be trusted to be accurate even when it produces "big" results.

Complaint Counsel also dismisses Dr. Shehadeh's corrections of Dr. Hill's Cournot model on the grounds that they come "from an unpublished working paper." FTC Post-Trial Br. at 59. Complaint Counsel leaves out, however, that that working paper comes from *FTC economists*, and it recognized that the bias it addressed in the Cournot model is "generally accepted in the field" as a flaw of the model. Respondents' FOF ¶ 701. In short, Respondents have amply shown that both Dr. Hill's "Capacity Closure Model" and his Cournot model suffer from numerous fatal defects

that render both models unreliable predictors of post-transaction anticompetitive effects. *See, infra*, section II.B.1; Respondents' Post-Trial Br. 41-46, 54-57; Respondents' FOF ¶¶ 686-704. Complaint Counsel's counterarguments do not deflect these valid critiques.

III. EVEN IF COMPLAINT COUNSEL HAD SHOWN A PRESUMPTION OF ILLEGALITY, RESPONDENTS HAVE REBUTTED IT.

As the foregoing analysis makes clear, Complaint Counsel have not met their burden of showing that the Tronox-Cristal transaction is presumptively unlawful, but even if Complaint Counsel had succeeded on this score, Respondents have provided more than enough evidence to rebut that presumption of illegality. The proposed transaction is pro-competitive because it is output-enhancing and will make more TiO2 supply available to consumers.

A. Entry and Expansion Would Be Timely, Likely, and Sufficient.

Respondents have shown that entry and expansion in the North American TiO2 market would be timely, likely, and sufficient, such that it would deter or counteract any competitive effects of concern. *See Staples*, 190 F. Supp. 3d at 133. Complaint Counsel disputes Respondents' evidence of entry and expansion, beginning with yet another strawman — that new entry into the TiO2 market is unlikely. FTC Post-Trial Br. at 60. Respondents have not argued that a brand new chloride-process TiO2 plant is likely to be built in North America in a timely manner. Respondents *have*, however, argued that existing North American TiO2 producers are capable of expanding capacity imminently in North America through capacity creep and debottlenecking. Respondents' FOF ¶ 565; Respondents' Reply FOF ¶¶ 728-29, 737. Past experience demonstrates that debottlenecking has expanded North American production in significant ways. Both Tronox and Cristal, moreover, have expanded capacity over the past two decades through capacity creep. Respondents' Reply FOF ¶ 729. It is realistic that debottlenecking can "improve plant capacity by two percent or three percent a year." Respondents' Reply FOF ¶ 730 (quoting Stern, Tr. 3773-

74). Additionally, "Kronos has been very successful in debottlenecking," Respondents' Reply FOF ¶ 730 (quoting Christian, Tr. 763), as has Tronox, which has expanded production at its Hamilton facility from 180,000 tons to 235,000 tons through a debottlenecking effort called "unlocking the hidden factory," Respondents' Reply FOF ¶ 730 (quoting Turgeon, Tr. 2655-59; Dean, Tr. 2959-60). Complaint Counsel's brief accounts for none of this.

Next, Complaint Counsel discusses Chinese competition at length, attempting to show that the threat of increasing Chinese production and sales in North America is not imminently likely in North America. Nothing could be further from the truth, as Respondents' have shown. Respondents' Post-Trial Br. at 71-74; Respondents' FOF ¶¶ 477-528. Chinese producers have already "transformed the global market, continuing to take market share from Western producers." Respondents' FOF ¶ 477 (quoting Stern, Tr. 3704-05). Chinese competition has grown incredibly in a matter of just a few years, and the quality of Chinese TiO2 "gets better every day." Respondents' FOF ¶ 478 (quoting Engle, Tr. 2488).

Chinese TiO2 producers have already demonstrated an ability to quickly increase production capacity. From 2008 to 2017, TiO2 production capacity in China has grown exponentially, essentially tripling in just nine years. Respondents' FOF ¶ 481. Over essentially the same time period, Chinese producers have gone from exporting roughly 400,000 tons of TiO2 annually to exporting about 1 million tons per year today. Respondents' FOF ¶ 482. The largest Chinese TiO2 producers "export a lot of material, and their quality is as good as [Tronox's] today." Respondents' FOF ¶ 483 (quoting Turgeon, Tr. 2660-61). [redacted] Quality improvements in Chinese TiO2 have been a recent development, changing only within the last five or six years.

Respondents' FOF ¶ 483. Today, the largest Chinese producer, Lomon Billions, is the fourth largest TiO2 producer in the world and is bigger than Tronox. Respondents' FOF ¶ 484. Lomon Billions is also a vertically integrated TiO2 producer, which makes it particularly competitive as against other producers. Respondents' FOF ¶ 485. Lomon Billions has directly targeted chloride-process TiO2 for its future expansions, too. [redacted]

The rapid expansion of Chinese production is also likely to include increased exports to North America, continuing what is already an ongoing trend. From 2010 to 2016, for example, Chinese TiO2 exports to North America expanded five-fold. Respondents' FOF ¶ 498. Customers in North America are also increasingly switching over to Chinese suppliers, which will further drive an increase in Chinese exports to North America. [redacted]

Complaint Counsel denies that Chinese producers like Lomon Billions are poised to expand their chloride-process TiO2 exports to North America in the near term, but it does so almost entirely by relying on *present* assessments of Chinese capabilities. Complaint Counsel says that current Chinese chloride production does not affect North America, FTC Post-Trial Br. at 61-62, that Lomon Billions is currently having problems with its chloride technology, FTC Post-Trial Br. at 63, and that Lomon Billions' chloride-process production is currently too limited for customers to use it to defeat a price increase from a supplier like Tronox, FTC Post-Trial Br. at 65. These present assessments of Chinese capabilities, however, address the wrong question — the right question is not what Chinese producers are capable of *right now*, but what they will be capable of in the near future. The record on that question is clear: Chinese producers will be capable of rapid entry and expansion in the North American TiO2 market in the near term.

Complaint Counsel highlights some of the obstacles that Chinese producers will face as they develop their chloride-process technology and begin increasing their exports to North America, FTC Post-Trial Br. at 64-67, but Complaint Counsel ignores that Chinese producers have already demonstrated their ability to develop more rapidly than expected. Several Tronox executives have admitted that they were mistaken and underestimated the likely growth of Chinese producers. Respondents' Reply FOF ¶ 757. These executives said Chinese producers "over the last ten to fifteen years and more importantly in the last five have become extremely competitive and they make very good grades, [that] in some instances … are better than [Tronox's]." Respondent's Reply FOF ¶ 757 (quoting Romano, Tr. 2238-39). Those superior Chinese products include some Chinese chloride-process products, which [redacted]

[redacted]

The evidence in this case plainly shows that Chinese TiO2 producers are real competitive threats to North American TiO2 production and are likely to substantially improve and increase their chloride-process TiO2 production in the near term. This additional Chinese production will be available for rapid expansion in the North American market, a fact that TiO2 producers underestimate at their peril. Complaint Counsel has not refuted Respondents' showing that Chinese TiO2 producers will provide timely, likely, and sufficient expansion in North America such that their competitive influence will counteract any anticompetitive effects that Complaint Counsel alleges this transaction will cause.

B. Respondents Have Demonstrated Ample Efficiencies.

1. Respondents Conducted a Guidelines Analysis.

Contrary to Complaint Counsel's assertion, Respondents provided evidence of their transaction's efficiencies. According to the Merger Guidelines, "only those efficiencies likely to be accomplished with the proposed merger and unlikely to be accomplished in the absence of the proposed merger" will be credited (these are "merger-specific efficiencies."). PX9085 (Horizontal Merger Guidelines § 10). Efficiency claims will also be disregarded "if they are vague, speculative, or otherwise cannot be verified by reasonable means." PX9085 (Horizontal Merger Guidelines § 10). Beyond that, however, the Guidelines do not specify particular means of verifying efficiencies or determining their merger specificity. [redacted]

[redacted]

Thus, Complaint Counsel has no grounds for claiming that Respondents' use of KPMG as a source of validation for its efficiencies is inconsistent with the Merger Guidelines. *See* FTC Post-Trial Br. at 71-72. Complaint Counsel also misleadingly quotes KPMG's report as saying that KPMG consultants "have not otherwise verified the information" in the report, when in context, that quoted disclaimer says that KPMG's analysis did not "constitute an audit" — an unremarkable assertion since KPMG was never engaged to perform an audit but "to perform detailed synergy assessment and to substantiate synergy assumptions including in the financial model." Respondents' Reply FOF ¶ 827 (quoting Quinn, Tr. 2338) (discussing PX0010-0175). Nor should the Court be misled by Complaint Counsel's argument into thinking that the *only* efficiencies verification and analysis that Respondents have supplied comes from KPMG's report. *See* FTC Post-Trial Br. at 71-72. Rather, Respondents have supplied ample documentation of their claimed efficiencies to Complaint Counsel, including not only relevant documents detailing efficiencies (and an entire Synergies White Paper devoted to substantiating Respondents' efficiencies) but also extensive testimony about efficiencies presented throughout trial. Respondents' Reply FOF ¶ 823. Respondents' proffered evidence addresses the concerns of the Merger Guidelines and is consistent with those Guidelines' general commentary on evaluating efficiencies. Respondents have therefore put forward Guidelines-based efficiencies evidence, and Complaint Counsel is wrong to assert otherwise. FTC Post-Trial Br. at 71-72.

2. Respondents' Efficiencies Are Cognizable.

a. Yanbu.

Respondents have provided detailed documentary foundation and trial testimony about efficiencies related to Cristal's TiO2 plant in Yanbu, Saudi Arabia. Respondents' Post-Trial Br. 23-24, 66-67; Respondents' FOF ¶¶ 131-72. Yanbu is a chronically underperforming Cristal pigment facility that Tronox is uniquely positioned to rehabilitate to producing at nameplate capacity. [redacted] Cristal, on the other hand, lacks expertise in low-pressure technology, and despite Cristal's best efforts to bring in outside expertise to improve the Yanbu plant, Cristal has been unable to improve production at Yanbu. Respondents' FOF ¶¶ 138, 140-43. [redacted]

Complaint Counsel rejects Respondents' Yanbu-based efficiencies on the grounds that Respondents' efficiencies projections "are based on little more than business judgment" that cannot be verified. FTC Post-Trial Br. at 73. That is not true. Respondents have substantiated their Yanbu projections through the testimony of Dick Dean, a vice president in Tronox's manufacturing operations and one of only "ten" other people in the world with similar expertise in "turning around TiO2 pigment plants." Respondents' FOF ¶ 159 (quoting Dean, Tr. 2996). Dean developed a Yanbu Transformation Plan, about which he testified in great detail. Respondents' FOF ¶¶ 160-69. That plan and Dean's testimony about it explains precisely how Tronox intends to go about improving production at Yanbu, and it draws extensively on Dean's past successes undertaking similar projects at other TiO2 plants. Respondents' FOF ¶¶ 160-69. Under the Merger

Guidelines, efficiency claims like Yanbu, which are "substantiated by analogous past experience[,] are those most likely to be credited." PX9085 (Horizontal Merger Guidelines §10).

Complaint Counsel claims that Respondents' detailed plan for Yanbu is not "verifiable" because Complaint Counsel's chosen expert, Dr. Zmijewski, was unable to verify the details of Respondents' plan. FTC Post-Trial Br. at 73. The problem lies not with Respondents, however, but with *Complaint Counsel*'s choice of expert. [redacted] Dr. Zmijewski has never visited any pigment plant, conducted no technical analysis of the performance improvements Tronox proposes for Yanbu, and has no technical experience or background in the TiO2 or chemicals industries. Respondents' FOF ¶¶ 171-72, 227-230. Dr. Zmijewski holds himself out only as an expert in "accounting, economics, and finance, as they related to financial analysis and valuation." Respondents' FOF ¶ 230 (quoting Zmijewski, Tr. 1492).

Respondents cannot be faulted for Complaint Counsel's failure to retain an expert capable of evaluating the substantive documentation that Respondents have provided for their claimed efficiencies. The Merger Guidelines require Respondents "to substantiate efficiency claims so that the Agencies *can* verify *by reasonable means* the likelihood and magnitude of each asserted efficiency." PX9085 (Horizontal Merger Guidelines § 10). Here, Complaint Counsel obviously *could* have reasonably retained an expert with technical background in chemical plant processing or the TiO2 industry in particular. But having chosen an accountant instead, Complaint Counsel now throws up its hands, exasperated that Respondents' extensively-documented efficiencies cannot be "verified" on a whiteboard alone. Of course, Respondents' Yanbu efficiencies *can* be verified, just not by Complaint Counsel's inexpert expert.

Complaint Counsel is also wrong that Respondents' Yanbu efficiencies are not merger-specific. Of course Cristal will remain committed to rehabilitating Yanbu even if the transaction is not consummated. *See* FTC Post-Trial Br. at 74. Commitment, however, is not enough. Cristal needs *expertise*, which it has already tried numerous times to source from outside the company, to no avail. Respondents' FOF ¶¶ 140-45. [redacted] An efficiency cannot be more merger-specific than that.

b. Jazan.

Complaint Counsel also dismisses Respondents' efficiencies claims related to Cristal's slagger in Jazan, Saudi Arabia, on the grounds that Respondents' Jazan efficiencies are speculative and not merger-specific. FTC Post-Trial Br. at 75-78. Again, neither assertion is true.

Respondents have provided detailed information substantiating the Jazan efficiencies claims. Respondents' Post-Trial Br. 22-23, 67-68; Respondents' FOF ¶¶ 177-217. [redacted] In particular, Tronox's highly skilled operators include some of the world's foremost experts in feedstock and smelting. Respondents' FOF ¶ 194. Tronox already has experience operating smelters that have key similarities to Jazan, including four furnaces in two different locations in South Africa. Respondents' FOF ¶ 196.

Complaint Counsel nonetheless brushes off Tronox's ability to fix Jazan as nothing but speculation because Jazan is the subject of an option agreement that Complaint Counsel believes "insulate[s] [Tronox] from risk if it [is] unable to fix the facility." FTC Post-Trial Br. at 75.

Complaint Counsel, however, misunderstands the terms of the Jazan agreement. [redacted] Complaint Counsel's recitation of the agreement's terms suggests that Tronox will acquire Jazan only once Jazan is working fairly well, at "70% capacity for 75 continuous days." FTC Post-Trial Br. at 75. [redacted] Those terms hardly insulate Tronox from the risk that it cannot turn Jazan around. To the contrary, they confirm that Tronox is so confident it can make Jazan fully operational that it will pay the full purchase price for the facility even at a time when the facility is operating well under *half* of its possible capacity.

Complaint Counsel also asserts that the Jazan agreement is not part of the proposed acquisition, so any efficiencies generated through Jazan will not be "generated through a merger" within the meaning of the Merger Guidelines. FTC Post-Trial Br. at 75-78. This is word play. Under any realistic assessment, the Jazan agreement is connected to and dependent on the larger Tronox-Cristal transaction. At the time the parties "signed the original merger agreement, the terms of the merger required that the parties would negotiate in good faith to later complete and execute" the Jazan option agreement. Respondents' FOF ¶ 207 (quoting Quinn, Tr. 2376). Tronox "would have never entered into this agreement if the big merger agreement did not exist." Respondents' FOF ¶ 207 (quoting Quinn, Tr. 2378).

Lastly, Complaint Counsel wrongly claims that Respondents' Jazan efficiencies are not merger-specific because Cristal could partner with someone else to fix Jazan in the absence of this merger. FTC Post-Trial Br. at 76-77. Not so. Complaint Counsel ignores that [redacted] Cristal has had other opportunities to obtain help for fixing Jazan, but Jazan remains non-operational. Complaint Counsel specifically calls out [redacted]

Complaint Counsel has failed to show that Respondents' Jazan efficiencies are either speculative or not merger-specific.

c. Cost Savings.

Respondents have shown that their post-transaction cost savings are cognizable efficiencies under the Merger Guidelines. Respondents have provided documents and testimony showing that the transaction will realize $100 million of EBITDA synergies by the end of year 1, and $200 million by the end of year 3. Respondents' FOF ¶ 221. Much of this savings comes from "SG&A cost savings," which result from the reduction in personnel and spending on third-party contracts

post-transaction. Respondents' FOF ¶ 222. Respondents also project, with documentation, that the transaction will generate cost savings through the combined entity's shared supply chain and through an improved debt-to-income ratio for the combined company. Respondents' FOF ¶¶ 224-25. Tronox's analogous past experience further supports this analysis. *See* PX9085 (Horizontal Merger Guidelines § 10) ("efficiency claims substantiated by analogous past experience are those most likely to be credited"). When Tronox acquired Exxaro in 2011, it announced $30 million in synergies predicted from the deal by the end of year two. Respondents' FOF ¶¶ 262, 264. Tronox easily exceeded its estimate. At one year post-transaction, Tronox had already attained approximately $30 million in synergies, and by the end of year two, that number had grown to $40 million. Respondents' FOF ¶ 264. Tellingly, Complaint Counsel's efficiencies expert, Dr. Zmijewski, agreed that "experience with other combinations in an industry [is] a useful tool for determining whether or not synergies or efficiencies could be verified," but nevertheless, "did not perform any analysis of efficiencies based on other mergers in the chemical industry. Respondents' FOF ¶¶ 266-67 (quoting Zmijewski, Tr. 1579-80).

Complaint Counsel suggests that Respondents failed to rebut Dr. Zmijewski's trial testimony that the cost-savings efficiencies here were not cognizable, but that is not true. FTC Post-Trial Br. at 78. Not only did Respondents supply all of the details about cost-savings just described and cited here, Respondents also supplied the KPMG report, which analyzed, assessed, and confirmed the cost-saving efficiencies that Respondents project. Respondents' FOF ¶¶ 239-248. Respondents' also provided evidence and documentation of its ongoing efficiencies due diligence. Respondents' FOF ¶¶ 255-60. Even Dr. Zmijewski acknowledged that Respondents "clearly have more information than I do [about efficiencies] and more data than even is available to the Court," and that "business records about output and level of activity are appropriate factual

bases for determining the verifiability of synergies." Respondents' FOF ¶¶ 258-59 (quoting Zmijewski, Tr. 1491, 1519-20). Thus, even according to Complaint Counsel's own expert, Respondents have put forward the kind of information needed to substantiate efficiencies claims. Complaint Counsel's assertion that Dr. Zmijewski's opinions at trial were not "unrebutted" is empty talk. FTC Post-Trial Br. at 78.

3. Respondents' Efficiencies Will Benefit North American Consumers.

Respondents have shown again and again that Tronox's proposed acquisition of Cristal is good for consumers because it is output-enhancing and cost-saving. Respondents' FOF ¶¶ 100-30. Respondents' expert economist, Dr. Shehadeh testified to that effect. Respondents' FOF ¶¶ 100-01. Dr. Shehadeh explained that the transaction "will lead to output-enhancing efficiencies in pigment" and "feedstock," both of which will have a "direct effect" in terms of "customer[ ] benefit." Respondent's FOF ¶ 101 (quoting Shehadeh, Tr. 3442-43). Complaint Counsel claims that those pro-competitive benefits will not help North American consumers. But many of Respondents' projected efficiencies will occur within North America, with an obvious and direct effect on North American consumers. Respondents, for instance, will have incentive to increase output post-transaction, especially at the combined entity's facilities in Hamilton and Ashtabula because those plants represent the lowest cost structure for both Tronox and Cristal presently. Respondents' FOF ¶ 126. Yet even where the primary location of post-transaction efficiencies is outside North America, customers in North America will still benefit. After all, Tronox remains a global company that internalizes global cost-savings, global vertical integration, and global output enhancement at the global level. That includes North America.

* * *

For the foregoing reasons, Complaint Counsel has failed to meet its burden to show that the Tronox-Cristal transaction will harm consumers. The complaint should be dismissed with prejudice.

Dated: September 10, 2018

Submitted By:

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CERTIFICATE FOR ELECTRONIC FILING

I certify that the electronic copy sent to the Secretary of the Commission is a true and correct copy of the paper original and that I possess a paper original of the signed document that is available for review by the parties and the adjudicator.

September 10, 2018

By: /s/ Michael F. Williams
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Notice of Electronic Service

I hereby certify that on September 11, 2018, I filed an electronic copy of the foregoing Respondents' Post-Trial Reply Brief - Redacted, with:

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