

**IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF ARKANSAS
CENTRAL DIVISION**

**ENVIRO TECH CHEMICAL
SERVICES, INC.**

PLAINTIFF

v.

Case No. 4:21-CV-00601-LPR

SAFE FOODS CORPORATION

DEFENDANT

ORDER

This is a patent-infringement case. Plaintiff Enviro Tech Chemical Services, Inc. patented a method of preparing poultry for distribution and sale. Defendant Safe Foods Corporation is allegedly infringing on the Patent. We are at the claim-construction stage. The parties dispute what the words of the Patent mean. So the Court resolves those disputes in this Order by “construing” the Patent. The Court also addresses Safe Foods’s argument that two of the disputed terms are indefinite and therefore any claims containing those terms are invalid.

BACKGROUND

The path from farm to table for chickens, turkeys, and other poultry has several steps. The bird is born and raised. It is then slaughtered, defeathered, and disemboweled. After that, the carcass soaks in a “chill tank” filled with a combination of chemicals and near-freezing water.¹ The chill-tank bath is necessary to combat “spoilage microorganisms, such as *Salmonella*, *Campylobacter*, yeast, and molds.”² The primary sanitizing agent in the chill tank is peracetic

¹ U.S. Patent No. 10,912,321 col. 4 l. 54–col. 6 l. 26 (filed Aug. 16, 2011) [*hereinafter* Patent]. The Patent is provided in full as Exhibit A to Defendant’s Claim Construction Brief. *See* (Doc. 41-2).

² *Id.* at col. 5 ll. 13–16.

acid. The Patent at issue here refers to the chemical-and-water mixture as “peracetic acid-containing water.”³ Below is an example of a chill tank in a processing facility.⁴



After the carcass is cooled and cleaned, it is ready for distribution and sale.⁵

Generally, each step of this process is handled by a different commercial actor: a farmer raises the birds then sells them to a processor; a processor does the dirty work of slaughtering, chilling, and sanitizing the carcasses before selling them to a distributor; and a distributor is responsible for delivering the packaged meat to, among other places, grocery stores.⁶ A bird’s value is measured by its weight at every step, so the seller wants it to be as heavy as possible.⁷ That poses a real problem for the poultry processors: They purchase a bird with feathers and internal organs, but then they sell a plucked and disemboweled carcass.⁸ Poultry processors

³ *E.g., id.* at col. 61 ll. 30–58.

⁴ Def.’s *Markman* Hr’g Presentation, Slide 8 (on file with the Court).

⁵ Patent, col. 5 ll. 51–55.

⁶ *See id.* at col. 4 l. 54–col. 5 l. 65; *see also* Oct. 4, 2022 Hr’g Tr. at 7:8–8:8.

⁷ Patent, col. 5 ll. 56–65.

⁸ *Id.*

therefore look for ways to make up for the weight unavoidably lost during processing. That's where Enviro Tech comes in.

Enviro Tech's patented discovery relates to the peracetic acid-containing water in the chill tank.⁹ For purposes of this case, the critical feature of the peracetic acid-containing water is its pH level. The pH level is a measurement of a substance's acidity or alkalinity.¹⁰ It is measured on a scale from 0 (most acidic) to 7 (neutral) to 14 (most alkaline). Water is generally considered neutral.¹¹ Before Enviro Tech came along, processors used a peracetic acid-containing water with a pH level of around 4.5–5.5.¹² An acidic mixture like that is effective as far as sanitation is concerned.¹³ But it doesn't have any meaningful impact on the processors' weight problems. Enviro Tech, while experimenting with higher-alkalinity mixtures, made an unexpected observation: A peracetic acid-containing water with a pH level around 6 to 9 sanitizes a carcass while also significantly increasing its weight—and therefore its value.¹⁴

A discovery is merely the first step to obtaining a patent. The patentee must endure a rather long and complicated process called “patent prosecution.” At a high level of abstraction, here is how patent prosecution works. A patentee files a proposed patent with the United States Patent and Trademark Office (PTO). The proposed patent begins with general background information

⁹ Technically, only individuals can be credited with a patented discovery. *See MBO Lab'ys, Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1326 n.1 (Fed. Cir. 2007). Michael S. Harvey and Jonathan N. Howarth are the individuals responsible for the patented discovery in this case. Patent, at [75]. They assigned the patent rights to Enviro Tech. *Id.* at [73]. For ease of reading, the Court will refer to Enviro Tech as the patentee.

¹⁰ Ex. D (Mills Decl.) to Def.'s Claim Construction Br. (Doc. 41-30) ¶ 54.

¹¹ *See id.*

¹² Patent, col. 6 ll. 9–26.

¹³ *Id.* at col. 6 ll. 20–24.

¹⁴ *See id.* at col. 6 ll. 30–39. It's unclear what prompted Enviro Tech to explore chemical-and-water mixtures with a higher pH level. The Patent states that it was “unexpected” that a peracetic acid-containing water with an elevated pH level would increase the weight of a processed carcass, so it's fair to say that Enviro Tech didn't set out to address poultry processors' weight concerns. *See id.* at col. 6 ll. 34–39.

about the invention and the industry for which the invention is intended.¹⁵ The patentee then lays out a “detailed description of the invention.”¹⁶ The detailed description includes results of real-life experiments that the patentee conducted to prove the efficacy of the invention and “embodiments,” which are examples of how the invention can be recreated or implemented. Finally, the patentee states his or her “claims.”¹⁷ The “claims of a patent define the invention”¹⁸ Together, the detailed description and the claims are called “the specification.”¹⁹

An “examiner” from the PTO decides whether the invention described by the claims is patentable. The examiner considers several factors, including how the claims compare to “the prior art”—a shorthand term for similar, pre-existing discoveries.²⁰ If the claims are not sufficiently unique, the examiner will reject the proposed patent because the claims are “obvious over the prior art.”²¹ When a proposed patent is rejected, the patentee can dispute the examiner’s conclusions and essentially ask the examiner to reverse himself or herself. If that doesn’t work, or if the patentee doesn’t think fighting the examiner is worth the effort, the patentee can amend the claims. The examiner will then consider the amended proposal. This back-and-forth can be repeated many times, causing the prosecution process to drag on for years. In this case, for

¹⁵ See Ex. B to Pl.’s Claim Construction Br. (Doc. 40-2) at 1–19. When citing Exhibit B to Plaintiff’s Claim Construction Brief, the Court is citing the page numbers created by the ECF filing system.

¹⁶ See *id.* at 19–119.

¹⁷ See *id.* at 120–26.

¹⁸ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc).

¹⁹ See *id.* at 1315 (“[C]laims must be read in view of the specification, of which they are a part.” (internal quotation marks and citation omitted)).

²⁰ *Airbus S.A.S. v. Firepass Corp.*, 941 F.3d 1374, 1379 (Fed. Cir. 2019) (“A reference qualifies as prior art for an obviousness determination only when it is analogous to the claimed invention.”); see also Oct. 4, 2022 Hr’g Tr. at 18:13–19.

²¹ *ModernaTx, Inc. v. Arbutus Biopharma Corp.*, 18 F.4th 1352, 1357 (Fed. Cir. 2021) (“[T]he Board found that Moderna failed to prove that the remaining claims were anticipated, or that those claims would have been obvious over the prior art.”); see Ex. B to Pl.’s Claim Construction Br. (Doc. 40-2) at 299–307 (PTO examiner rejecting claims in the proposed patent based on “obviousness”).

example, Enviro Tech prosecuted the Patent for nine years—including seven disputes, four rounds of amended claims, and one victorious appeal to the Patent Trial and Appeal Board.²²

The Patent contains thirty-three claims.²³ Five of those are “independent claims”; the remaining twenty-eight are “dependent claims.” “An independent claim is self-contained and complete unto itself. It is a full and complete description of an operative invention.”²⁴ A dependent claim adds a new limitation to an independent claim.²⁵ Below are Claims 1–9. These provide a helpful illustration of (a) the relationship between independent and dependent claims, and (b) the parties’ disagreements in this case. Claim 1 is an independent claim. Claims 2–9 are dependent claims of Claim 1. The italicized portions of Claim 1 are the terms and phrases at issue in this case. The parties agree that Claim 1 is representative and therefore the Court’s constructions will apply to all claims that contain the disputed terms and phrases.²⁶

1. A method of treating at least a portion of a poultry carcass with peracetic acid, said method comprising the steps of:

²² Enviro Tech applied for the Patent on August 16, 2011. Patent, at [22]. The PTO rejected the original application. Ex. B to Pl.’s Claim Construction Br. (Doc. 40-2) at 299–319. Enviro Tech amended its application. *Id.* at 320–30. The PTO rejected the amended application. *Id.* at 348–60. Enviro Tech amended a second time. *Id.* at 361–95. The PTO again rejected the application. *Id.* at 397–427. Enviro Tech disputed that third rejection. *Id.* at 428–591. The PTO rejected the application for a fourth time. *Id.* at 592–623. Enviro Tech disputed the fourth rejection and enjoyed a short-lived success, *id.* at 624–678, before the PTO reversed course and rejected the application for a fifth time, *id.* at 693–713. That exact process then repeated itself: Enviro Tech disputed the fifth rejection; the PTO decided to issue the patent; then the PTO doubled back and rejected the application for a sixth time. *Id.* at 714–815. Enviro Tech amended its application for a third time. *Id.* at 827–846; Ex. B to Pl.’s Claim Construction Br. (Doc. 40-3) at 1–24. The PTO rejected the third amended application four separate times; Enviro Tech disputed each rejection without success. Ex. B to Pl.’s Claim Construction Br. (Doc. 40-3) at 25–263. Eventually, Enviro Tech amended the application instead of lodging another dispute. *Id.* at 264–96. The PTO rejected the application for a twelfth and final time. *Id.* at 297–319. Enviro Tech appealed to the Patent Trial and Appeal Board, which reversed the PTO and granted Enviro Tech’s application. *Id.* at 320–847. Enviro Tech received the Patent on February 9, 2021. Patent, at [45].

²³ Patent, col. 61 l. 30–col. 65 l. 20.

²⁴ *Mynette Techs., Inc. v. United States*, 139 Fed. Cl. 336, 349 n.16 (2018) (emphasis omitted and alteration adopted) (quoting Amy L. Landers, *Understanding Patent Law* § 4.04[A] (2d ed. 2012)).

²⁵ *Id.* (quoting Landers, *Understanding Patent Law* § 4.04[A]).

²⁶ See Pl.’s Claim Construction Br. (Doc. 40) at 2; Def.’s Claim Construction Br. (Doc. 41) at 6.

providing, in a reservoir, a peracetic acid-containing water, wherein the peracetic acid-containing water comprises water and an *antimicrobial amount* of a solution of peracetic acid;

after the step of providing the peracetic acid-containing water, determining the pH of the peracetic acid-containing water, and altering the pH of the peracetic acid-containing water to a pH of about 7.6 to about 10 by adding an alkaline source;

after the step of determining the pH and altering the pH of the peracetic acid-containing water, placing into the peracetic acid-containing water at least a portion of a poultry carcass;

after the step of placing at least the portion of the poultry carcass into the peracetic acid-containing water, determining the pH of the peracetic acid-containing water in the reservoir with at least the portion of the poultry carcass therein, and altering the pH of the peracetic acid-containing water to a pH of about 7.6 to about 10 by adding an alkaline source; and

after the step of determining the pH and altering the pH of the peracetic acid-containing water having at least the portion of the poultry carcass therein, removing at least the portion of the poultry carcass from the peracetic acid-containing water.

2. The method of claim 1 wherein the providing step includes a step of separately introducing the water and the antimicrobial amount of the solution of peracetic acid into the reservoir to form the peracetic acid-containing water provided in the reservoir.

3. The method of claim 1 wherein the providing step includes a step of combining the water and the antimicrobial amount of the solution of peracetic acid to form the peracetic acid-containing water and a subsequent step of introducing the peracetic acid-containing water into the reservoir for providing, in the reservoir, the peracetic acid-containing water.

4. The method of claim 1 wherein the antimicrobial amount of the peracetic acid is about 1 ppm to about 99 ppm.

5. The method of claim 1 wherein the steps of determining the pH of the peracetic acid-containing water are performed continuously.

6. The method of claim 5 wherein the step of altering the pH after the step of placing at least the portion of the poultry carcass into the peracetic acid-containing water is performed continuously.

7. The method of claim 2 further comprising a step of removing a portion of the peracetic acid-containing water from the reservoir with at least the portion of the poultry carcass therein, and a further step of introducing additional water and additional solution of peracetic acid into the reservoir with at least the portion of the poultry carcass therein.

8. The method of claim 3 further comprising a step of removing a portion of the peracetic acid-containing water from the reservoir with at least the portion of the poultry carcass therein, and a further step of introducing additional peracetic acid-containing water into the reservoir with at least the portion of the poultry carcass therein.

9. The method of claim 1 wherein the step of determining the pH and altering the pH after the step of placing at least the portion of the poultry carcass into the peracetic acid-containing water is performed more than once.²⁷

DISCUSSION

Safe Foods takes issue with five terms or phrases in the Patent's claims. Those terms and phrases are: (1) "determining the pH"; (2) "altering the pH"; (3) "after the step of"; (4) "about"; and (5) "antimicrobial amount."²⁸ Safe Foods says that the meanings of the first three phrases, as they are used in the Patent, are ambiguous and require "claim construction."²⁹ Claim construction is a process through which courts determine the meaning of a word or phrase in the context of that particular patent. As for the last two terms, Safe Foods contends they are "indefinite."³⁰ A patent claim is indefinite when it is written in an unreasonably broad or vague manner, such that it becomes nearly impossible to tell what actions do and do not infringe that patent claim.³¹ If a patent claim is indefinite, then that specific claim is invalid.

²⁷ Patent, col. 61 l. 31–col. 62 l. 30 (emphasis added). There is an errant period in step two of Claim 1. The Court believes this to clearly be a scrivener's error and therefore omitted the period from the quotation.

²⁸ Pl.'s Claim Construction Br. (Doc. 40) at 1–2; Def.'s Claim Construction Br. (Doc. 41) at 2–3, 7, 13, 18, 24.

²⁹ See Def.'s Claim Construction Br. (Doc. 41) at 2–3, 7, 13, 18.

³⁰ *Id.* at 24.

³¹ See *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 908–10 (2014).

I. Claim Construction

Whether Safe Foods is liable for patent infringement is a question of fact.³² That means a jury is responsible for deciding whether Safe Foods’s actions are unlawful because they fall within the scope of the Patent. But to know whether an action is covered by a patent claim, a jury must first know what the words of that patent claim mean. And the parties to a patent-infringement suit rarely agree on the meaning of a patent claim. The Supreme Court, in *Markman v. Westview Instruments, Inc.*, held that judges, not juries, are responsible for resolving disputes as to the meaning of a patent claim.³³ A judge resolves such disputes through claim construction. The judge’s constructions are the foundation for the jury instructions that will be used to determine whether, as a matter of fact, infringement has occurred.³⁴

The Court’s job at the claim-construction stage is to discern the “ordinary meaning” of the disputed patent claims.³⁵ “Ordinary meaning” is a phrase that frequently appears in caselaw. It is most often invoked by courts when interpreting a statute.³⁶ In that context, a term’s “ordinary meaning” is the meaning that a regular member of the public would give it. The claim-construction analysis is similar, but with a twist. Here, “the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention”³⁷

³² *i4i Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 849 (Fed. Cir. 2010).

³³ 517 U.S. 370, 372 (1996).

³⁴ *Kaufman v. Microsoft Corp.*, 34 F.4th 1360, 1370 (Fed. Cir. 2022) (“A proper claim construction provides a legal standard for the jury to apply”).

³⁵ *Sound View Innovations, LLC v. Hulu, LLC*, 33 F.4th 1326, 1332 (Fed. Cir. 2022).

³⁶ *See, e.g., Niz-Chavez v. Garland*, 141 S. Ct. 1474, 1480 (2021) (“When called on to resolve a dispute over a statute’s meaning, this Court normally seeks to afford the law’s terms their ordinary meaning at the time Congress adopted them.”).

³⁷ *Phillips*, 415 F.3d at 1313; *see also Teva Pharms. USA v. Sandoz, Inc.*, 574 U.S. 318, 330 (2015) (“Statutes, in general, address themselves to the general public; patent claims concern a small portion of that public.”).

Claim construction of course begins with the words of the claim. But the claims cannot be read in isolation. The claims “are part of a fully integrated written instrument, consisting principally of a specification that concludes with the claims.”³⁸ Accordingly, “the person of ordinary skill in the art is deemed to read the claim term . . . in the context of the entire patent, including the specification.”³⁹ Indeed, the specification “is the single best guide to the meaning of a disputed term.”⁴⁰ That’s because the specification, through the embodiments and experiments, provides the strongest evidence of how the patentee viewed the invention.⁴¹

Prosecution history also “plays various roles in resolving uncertainties about claim scope.”⁴² One such role is to confirm the way in which a patent was understood by the patentee and PTO, which in turn sheds light on how the patent would be read by a person of ordinary skill in the art.⁴³ In this sense, courts resort to prosecution history to double-check their constructions.⁴⁴ Prosecution history can also reveal that a claim’s scope is “narrower than it would otherwise be.”⁴⁵ This narrowing is the result of a “prosecution history disclaimer.”⁴⁶ A disclaimer occurs “when the patentee unequivocally and unambiguously disavows a certain meaning to obtain a patent”⁴⁷ There’s a high bar to establishing a disclaimer: The “disavowing actions or statements made

³⁸ *Phillips*, 415 F.3d at 1315 (internal quotation marks and citation omitted).

³⁹ *Id.* at 1313.

⁴⁰ *Id.* at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

⁴¹ See *supra* notes 16–19 and accompanying text.

⁴² *Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1358–59 (Fed. Cir. 2017) (quoting *SAS Inst., Inc. v. ComplementSoft, LLC*, 825 F.3d 1341, 1349 (Fed. Cir. 2016)).

⁴³ See *Phillips*, 415 F.3d at 1317.

⁴⁴ See *Ancora Techs., Inc. v. Apple, Inc.*, 744 F.3d 732, 739 (Fed. Cir. 2014).

⁴⁵ *Phillips*, 415 F.3d at 1317.

⁴⁶ *Baxalta Inc. v. Genentech, Inc.*, 972 F.3d 1341, 1348 (Fed. Cir. 2020).

⁴⁷ *Aylus Networks*, 856 F.3d at 1359 (quoting *Biogen Idec, Inc. v. GlaxoSmithKline, LLC*, 713 F.3d 1090, 1095 (Fed. Cir. 2013)).

during prosecution [must] be both clear and unmistakable.”⁴⁸ But if that high bar is cleared, then the patentee is precluded “from recapturing through claim interpretation specific meanings disclaimed during prosecution.”⁴⁹

A patent and its prosecution history are “intrinsic evidence.”⁵⁰ Intrinsic evidence is usually sufficient to arrive at the proper construction of a patent claim.⁵¹ There are times, however, where, after reviewing all of the intrinsic evidence, ambiguities remain. In those cases, courts may turn to “extrinsic evidence,” which is “all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.”⁵² When possible, it’s best to avoid extrinsic evidence. It is just as likely to complicate as it is to clarify. There are often fights about which extrinsic sources are worthy of consideration and exactly how the chosen sources should be applied to the terms at issue. Moreover, using extrinsic evidence muddies the waters as to whether a judge is weighing evidence and factfinding or performing the legal function of interpreting a document.⁵³ The point here is that extrinsic evidence comes inside a break-glass-in-case-of-emergency package with a use-with-extreme-care warning label.

With the foregoing principles in mind, the Court now turns to the disputed terms in the Patent’s claims.

⁴⁸ *Id.* at 1359 (quoting *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1325–26 (Fed Cir. 2003)).

⁴⁹ *Id.* (quoting *Omega Eng’g*, 334 F.3d at 1323).

⁵⁰ *Knowles Elecs. LLC v. Cirrus Logic, Inc.*, 883 F.3d 1358, 1361–62 (Fed. Cir. 2018) (“A patent’s specification, together with its prosecution history, constitutes intrinsic evidence” (footnote omitted)).

⁵¹ *E.g., Bell & Howell Document Mgmt. Prods. Co. v. Altek Sys.*, 132 F.3d 701, 705–06 (Fed. Cir. 1997).

⁵² *Phillips*, 415 F.3d at 1317.

⁵³ *See Teva Pharms.*, 574 U.S. 318 (holding that a court’s analysis of intrinsic evidence is “a determination of law,” while analysis of extrinsic evidence is a “subsidiary factual finding[.]”).

A. “Determining the pH”

The parties disagree as to what actions fall within the scope of the word “determining.” The Patent requires “determining the pH” of the peracetic acid-containing water at two separate steps of the process. The pH is first determined before any poultry carcasses are placed in the chill tank.⁵⁴ The pH is next determined after the poultry carcasses are placed in the chill tank.⁵⁵ The point of these “determining” steps is to keep an eye on the pH levels of the peracetic acid-containing water and adjust the proportion of chemicals as necessary to keep the pH level within a specified range.

Enviro Tech’s position is pretty straightforward: “determining” means “determining” and no further construction is necessary.⁵⁶ On the other hand, Safe Foods contends that “determining” in the Patent is narrower than the lay definition. Specifically, Safe Foods argues that “determining” in the Patent means “measuring” the pH level in order to know the peracetic acid-containing water’s real pH level.⁵⁷ The following example illustrates the distinction that Safe Foods draws between “determining” and “measuring.” Imagine that someone estimated the pH level of the peracetic acid-containing water based on a calculation of the proportion of known inputs and conditions (e.g., water, peracetic acid, alkaline source, and temperature).⁵⁸ A rational juror could find that the estimation is a determination of the pH if “determining” is given the full scope of its lay definition.⁵⁹ But Safe Foods says that the Patent clearly requires the person performing the

⁵⁴ Patent, col. 61 ll. 38–42.

⁵⁵ *Id.* at col. 61 ll. 47–53.

⁵⁶ Pl.’s Claim Construction Br. (Doc. 40) at 5–6; Pl.’s Resp. to Def.’s Claim Construction Br. (Doc. 46) at 2–5.

⁵⁷ Def.’s Claim Construction Br. (Doc. 41) at 7–13; Def.’s Resp. to Pl.’s Claim Construction Br. (Doc. 47) at 2–5.

⁵⁸ Oct. 4, 2022 Hr’g Tr. at 33:12–23.

⁵⁹ *Determine*, *Merriam-Webster’s Online Dictionary*, <https://www.merriam-webster.com/dictionary/determine> (last visited Dec. 15, 2022) (“[T]o find out or come to a decision about by investigation, reasoning, or calculation.”).

“determining” step to know the real (not estimated) pH level. And that knowledge can only be ascertained through an actual measurement that takes account of all inputs and conditions, both known and unknown.⁶⁰ So, under the Patent, an estimation based only on known inputs and conditions would not actually be “determining the pH” of the peracetic acid-containing water. To avoid a jury inappropriately broadening the scope of the Patent’s claims, Safe Foods thinks the Court must construe “determining the pH” to mean “measuring the pH.”⁶¹

Enviro Tech agrees that “determining,” if given its lay definition, would encompass more activity than “measuring.”⁶² Enviro Tech argues, however, that it is unnecessary to construe “determining” *because* it is a word with a commonly known lay definition.⁶³ If using that common lay definition would mean that a wider variety of conduct falls within the scope of the Patent, then (according to Enviro Tech) that is simply the upside of using the broader term “determining” in the claims. Enviro Tech’s position runs counter to binding Supreme Court and Federal Circuit precedent. Under those precedents, this Court must consider how a person of ordinary skill in the art would, after reading the entire Patent, understand the “determining” step.⁶⁴ Of course, if the Patent used “determining” in a way that perfectly overlapped with the lay definition, then construction would be simple. But that’s not how this patent uses “determining.” Instead, this patent uses “determining” to mean measuring the pH level through the use of some device, tool, instrument, or other piece of equipment that accounts for all inputs and conditions, both known and unknown.

⁶⁰ See Def.’s Claim Construction Br. (Doc. 41) at 7; Def.’s Resp. to Pl.’s Claim Construction Br. (Doc. 47) at 4.

⁶¹ See *Markman*, 517 U.S. 370.

⁶² See Oct. 4, 2022 Hr’g Tr. at 29:19–30:7.

⁶³ *Id.* at 22:21–23:4, 31:8–13.

⁶⁴ See *Markman*, 517 U.S. 370; *Phillips*, 415 F.3d at 1313.

The structure of the Patent’s claims indicates that measuring the pH level is necessary to perform the “determining” step. If a calculated estimate based on known inputs and conditions was sufficient, then having a “determining” step immediately before and immediately after adding the poultry carcasses to the chill tank would be inefficient, if not superfluous.⁶⁵ One would simply expect that the person performing the method would, on the front end, account for the poultry carcasses’ impact on the peracetic acid-containing water’s pH level. Indeed, there are two embodiments in the specification—neither of which require “determining the pH” at any point—that seem to work this way. The first and second embodiments of the poultry-processing method both indicate that the person performing the method lands in the correct pH range by accurately proportioning the water, peracetic acid, and alkaline source for the peracetic acid-containing water.⁶⁶ The first embodiment never calls for “determining the pH” of the peracetic acid-containing water.⁶⁷ And the second embodiment explicitly says that it is optional to “determin[e] the pH” before placing the poultry carcasses into the chill tank.⁶⁸ The “determining” step can only be optional in the second embodiment because an estimation, such as a calculation based on known inputs and conditions, does not qualify as “determining the pH.”

The Patent addresses the “determining” step eight times across five examples and three embodiments.⁶⁹ In the five examples, Enviro Tech reported taking actual measurements of the pH

⁶⁵ See, e.g., *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 801, 810 (Fed. Cir. 2021) (“It is highly disfavored to construe terms in a way that renders them void, meaningless, or superfluous.” (quoting *Wasica Fin. GmbH v. Cont’l Auto. Sys., Inc.*, 853 F.3d 1272, 1288 n.10 (Fed. Cir. 2017))).

⁶⁶ See Patent, col. 29 l. 56–col. 33 l. 15.

⁶⁷ *Id.* at col. 29 l. 56–col. 30 l. 40.

⁶⁸ *Id.* at col. 32 l. 43–col. 33 l. 15.

⁶⁹ The Patent has four total embodiments of the poultry-processing method, but the first embodiment never calls for a “determining” step. *Id.* at col. 29 l. 56–col. 30 l. 40. There are also a total of twenty-four examples throughout the Patent. But only five discuss the “determining” step of the patented method in any way. See *id.* at col. 43 l. 6–col. 48 l. 19 (providing Examples 18 and 19); *id.* at col. 51 l. 65–col. 61 l. 28 (providing Examples 22 through 24).

levels when performing the “determining” steps.⁷⁰ And in each of the three embodiments, the Patent provides that the pH can be “determined by any method, including the use of a glass electrode, indicator solutions, and pH test strips.”⁷¹ Although the phrase “by any method” (if considered in isolation) might indicate a much broader definition that includes calculated estimates, the narrow term “measuring” fits better once the list of potential methods of determination are considered. *Noscitur a sociis*: a word “is known by its associates.”⁷² That’s a fancy way of saying that “the meaning of an unclear word or phrase, esp[ecially] one in a list, should be determined by the words immediately surrounding it.”⁷³ And all of the specification’s potential methods of determination fall within the world of measurement (not calculated estimation). Moreover, the “preferred embodiment” goes so far as to say that the best way to perform the “determining” step is “continuously and in an automated fashion” by combining “a glass electrode, a pH meter, a controller, and a pump.”⁷⁴ That system continuously monitors the peracetic acid-containing water’s real pH level and makes instant adjustments as necessary.⁷⁵ It’s clear from all of this that the “determining” step requires taking a measurement of the real pH level in a way that accounts for all inputs and conditions, both known and unknown.

⁷⁰ Enviro Tech even used the word “measured” to describe the action taken to learn the pH level. *Id.* at col. 43 ll. 49–61, col. 43 l. 67–col. 44 l. 10 (Example 18); *id.* at col. 46 ll. 39–46 (Example 19); *id.* at col. 52 ll. 49–56 (Example 22); *id.* at col. 55 ll. 56–67 (Example 23); *id.* at col. 58 l. 57 (“The pH was measured daily . . .”).

⁷¹ *Id.* at col. 32 ll. 43–49 (second embodiment); *id.* at col. 33 ll. 49–51, col. 34 ll. 32–34 (third embodiment); *id.* at col. 36 ll. 14–16, col. 37 ll. 29–30 (fourth embodiment).

⁷² *Noscitur a sociis*, *Black’s Law Dictionary* (11th ed. 2019).

⁷³ *Id.*

⁷⁴ Patent, col. 37 l. 63–col. 38 l. 16; Pl.’s Resp. to Def.’s Claim Construction Br. (Doc. 46) at 8–9 (describing this continuous process as the “preferred embodiment”). Enviro Tech was required by law to provide “the best mode contemplated by the inventor . . . of carrying out the invention.” 35 U.S.C. § 112(a). “[D]isclosing the inventor’s preferred embodiment of the claimed invention” is how Enviro Tech “compli[ed] with the best mode requirement” *Bayer AG v. Schein Pharms., Inc.*, 301 F.3d 1306, 1316 (Fed. Cir. 2002). To be plain about it, the preferred embodiment is what Enviro Tech considered to be the best way to perform the patented method.

⁷⁵ Patent, col. 37 l. 63–col. 38 l. 16.

The prosecution history confirms that “determining” means “measuring.”⁷⁶ During prosecution, Enviro Tech argued that its method was not an obvious innovation because it would substantially change the poultry-processing industry’s standard practices. Specifically, Enviro Tech said that implementing its method would require processors to incur “significantly increase[d] costs” necessary to “set[] up . . . and maintain” the “additional equipment to measure and monitor the pH”⁷⁷ There would be no need for the expensive equipment if processors could perform the “determining” step through relatively simple, and comparatively cheap, estimations or calculations. Thus, Enviro Tech’s arguments before the PTO show that everyone involved with the creation of the Patent understood the “determining” step to require measurement of the peracetic acid-containing water’s real pH level through the use of some device, tool, instrument, or other piece of equipment like those listed in the embodiments and examples. There’s no reason to think a person of ordinary skill in the art would read the Patent differently.

B. “Altering the pH”

The Patent calls for “altering the pH of the peracetic acid-containing water . . . by adding an alkaline source” if the pH is “determin[ed]” to be outside of a specified range.⁷⁸ Here again, Enviro Tech says the words of the Patent are sufficiently clear and in need of no construction. According to Enviro Tech, to “alter” simply means to “adjust” or “change”—whether upward or

⁷⁶ Safe Foods takes the more aggressive position that Enviro Tech disclaimed any definition of “determining” broader than “measuring.” Def.’s Claim Construction Br. (Doc. 41) at 9–12; Def.’s Resp. to Pl.’s Claim Construction Br. (Doc. 47) at 4–5. That’s a step too far. Prosecution disclaimer comes into play when a court must give a claim term a narrower definition than is otherwise supported by the specification. *See Phillips*, 415 F.3d at 1317; *Ancora Techs.*, 744 F.3d at 739. In this case, the Court is not giving “determining” a narrower definition than is supported by the Patent itself. Instead, the Court is holding that the Patent uses the word “determining” in a narrower way than the common lay definition would allow.

⁷⁷ Ex. B to Pl.’s Claim Construction Br. (Doc. 40-2) at 434.

⁷⁸ *E.g.*, Patent, col. 61 ll. 40–42, 51–53.

downward—and any rational lay juror is capable of understanding and applying that definition.⁷⁹ On the other side of the ledger, Safe Foods contends that the “altering” step is performed only by raising the pH into the specified range.⁸⁰ Enviro Tech contends that, by limiting the “altering” step solely to raising the pH, Safe Foods’s construction improperly narrows the scope of the Patent’s claims.

Safe Foods’s proposed construction is neatly broken down into two components. First, there is the argument that “altering” only occurs when the pH level of the peracetic acid-containing water is brought from outside to inside the specified range. Nobody really argues with that. And nobody should: It makes perfect sense—both in light of the Patent’s specification and as a matter of the English language—that one wouldn’t “alter” the pH into a specified range if it’s already in that range.⁸¹ The second, and strongly contested, component of Safe Foods’s construction is that the “altering” step is performed only by raising the pH of the peracetic acid-containing water.⁸² But Safe Foods is right about that, too.

The Patent is littered with evidence that “altering the pH . . . by adding an alkaline source” means raising the pH of the peracetic acid-containing water. In the embodiments that discuss the “altering” step, the Patent provides the following directions:

If the pH is determined to be lower than [the specified range], then a source of alkali is added to the [peracetic acid]-containing water to raise the pH of the [peracetic acid]-containing water to [the specified range]. . . . If the pH is determined to be higher than [the specified range], then a source of acid is added to the [peracetic

⁷⁹ Pl.’s Claim Construction Br. (Doc. 40) at 6–7; Oct. 4, 2022 Hr’g Tr. at 48:1–22.

⁸⁰ Def.’s Claim Construction Br. (Doc. 41) at 13; Def.’s Resp. to Pl.’s Claim Construction Br. (Doc. 47) at 5.

⁸¹ See Patent, col. 32 ll. 49–50, col. 33 ll. 51–52, col. 34 ll. 34–35, col. 36 ll. 16–17, col. 37 ll. 30–32 (stating that “no pH-altering step is performed” when “the pH is determined to be” in the specified range); see also Oct. 4, 2022 Hr’g Tr. at 48:20–22 (Enviro Tech’s counsel stating that “[t]he idea behind” the “altering” step is “to alter, adjust, [or] change the pH if it’s outside of the [specified] range”).

⁸² See Def.’s Resp. to Pl.’s Claim Construction Br. (Doc. 47) at 6 (criticizing Enviro Tech’s proposed construction because it “could include the lowering of the pH . . .”).

acid]-containing water to lower the pH of the [peracetic acid]-containing water to [the specified range].⁸³

And that’s not all. Over the course of four experiment examples, Enviro Tech found it necessary to perform the “altering” step of the patented method a total of eleven times. Of those, six were downward alterations performed by adding an acidic source and five were upward alterations performed by adding an alkaline source.⁸⁴ In a fifth example, Enviro Tech stressed the importance of maintaining an “elevated” pH level by adding an alkaline source.⁸⁵ There is not a single time where the Patent directs, recommends, or even contemplates that someone performing the patented method lower the pH of the peracetic acid-containing water by adding an alkaline source.⁸⁶ Thus, the Patent itself establishes that performing the “altering . . . by adding an alkaline source” step requires raising the pH.

The prosecution history further confirms that the “altering” step is performed by raising the pH. On at least seven different occasions during the patent-prosecution process, Enviro Tech

⁸³ Patent, col. 32 l. 54–col. 33 l. 2 (second embodiment); *id.* at col. 33 l. 56–col. 34 l. 4, col. 34 ll. 37–52 (third embodiment); *see also id.* at col. 36 ll. 19–38, col. 37 ll. 34–51 (fourth embodiment). The first embodiment of the poultry-processing method does not provide for an “altering” step. *See id.* at col. 29 l. 56–col. 30 l. 40.

⁸⁴ *Id.* at col. 43 ll. 49–59 (two downward alterations performed with acidic source); *id.* at col. 44 ll. 6–8 (one upward alteration performed with alkaline source); *id.* at col. 46 ll. 39–46 (two downward alterations performed with acidic source; one upward alteration performed with alkaline source); *id.* at col. 52 ll. 49–56 (two upward alterations performed with alkaline source); *id.* at col. 55 ll. 56–63 (two downward alterations performed with acidic source; one upward alteration performed with alkaline source).

⁸⁵ *See id.* at col. 58 l. 11–col. 61 l. 28.

⁸⁶ The Patent’s examples also record Enviro Tech “altering” the pH of a solution at least ten additional times. Those other alterations, however, technically are not representations of the “altering” step of the patented method. Instead, they record Enviro Tech altering the pH of a solution in order to test the peracetic acid-containing water’s antimicrobial efficacy at various pH levels. So these examples are somewhat less relevant than the experiments that actually test the patented method itself. Still, these examples further support the Court’s construction that “altering . . . by adding an alkaline source” means “raising the pH.” Of these ten additional alterations, seven were downward alterations performed with an acidic source and three were upward alterations performed with an alkaline source. *See id.* at col. 39, Table XX (two downward alterations performed with acidic source; two upward alterations performed with alkaline source); *id.* at col. 41 ll. 44–52 (two downward alterations with acidic source; one upward alteration performed with alkaline source); *id.* at col. 41 l. 65–col. 42 l. 9 (three downward alterations performed with acidic source).

explained to the PTO or PTAB that the “altering” step requires raising the pH.⁸⁷ It isn’t necessary to go through those examples in any detail. They all point to the same conclusion: Enviro Tech, the PTO, and the PTAB understood the “altering” step to require raising the pH. A person of ordinary skill in the art would read the Patent the same way.

In addition to the intrinsic evidence, Safe Foods’s construction simply makes sense. As a matter of grade-school chemistry, it seems unavoidable that “altering . . . by adding an alkaline source” means “raising the pH.”⁸⁸ Moreover, it’s helpful to keep in mind exactly what the invention is that the Patent protects. It isn’t the overarching poultry-processing method. And it isn’t the use of a chill tank, generally. Enviro Tech’s invention is an improvement on the way that poultry processors use chill tanks. Specifically, Enviro Tech improved on industry practice by adding alkaline sources to the chill tank and raising the pH from the standard pH level of 4.5–5.5 to a pH level of 7.6–10.⁸⁹ The protected invention is therefore quite specific: the use of a peracetic acid-containing water with an “elevated” pH level.⁹⁰ That context—coupled with the Patent’s specification and prosecution history—makes it easy to see that the step of “altering the pH . . . by adding an alkaline source” is performed by raising the pH of the peracetic acid-containing water from outside to inside of the specified range.

⁸⁷ See Def.’s Claim Construction Br. (Doc. 41) at 16–17; Def.’s Resp. to Pl.’s Claim Construction Br. (Doc. 47) at 6–8.

⁸⁸ It is of course theoretically possible that someone could lower the pH of a solution by adding an alkaline source that has a lower pH than the solution’s current pH level (e.g., adding an alkaline source with a pH of 11 to a solution with a pH of 13). But there’s no evidence—intrinsic or extrinsic—that suggests such alterations occur with any regularity, if at all. The more common-sense conclusion is the one supported by the Patent itself: If you want to lower pH, add an acidic source; if you want to raise pH, add an alkaline source.

⁸⁹ See Patent, col. 6 ll. 17–26; *id.* at col. 61 ll. 41–42, 52–53.

⁹⁰ See *id.* at col. 6 ll. 34–39, col. 60 ll. 25–47.

C. “After the step of . . .”

The Patent lays out a series of steps that one must take to perform the patented method. The claims are written in a way that conditions performance of each step on the performance of the previous step: “[A]fter the step of [previous recited step], [perform next step].”⁹¹ The parties (somehow) disagree as to whether these steps have to be performed in order. Enviro Tech says no; Safe Foods says yes. Safe Foods is right.

Enviro Tech at least agrees that, if one were to read only the independent claims, the recited steps must be performed in their recited order.⁹² The independent claims provide the following steps: (A) create the peracetic acid-containing water; (B) “after the step of” creating the peracetic acid-containing water, “determin[e] the pH” and “alter[] the pH” of the peracetic acid-containing water to the specified range; (C) “after the step of determining . . . and altering the pH” of the peracetic acid-containing water, add the poultry carcass(es) to the chill tank; (D) “after the step of” adding the poultry carcass(es) to the chill tank, re-determine and re-alter the peracetic acid-containing water’s pH level to the specified range; and (E) “after the step of” re-determining and re-altering the peracetic acid-containing water’s pH level, remove the poultry carcass(es).⁹³ The independent claims could hardly seem more clear.

But Enviro Tech says that things are complicated by the dependent claims (i.e., variations on the patented method).⁹⁴ In the Patent, some of the dependent claims require that certain actions in the independent claims’ steps be performed “continuously.”⁹⁵ And other dependent claims add

⁹¹ *E.g., id.* at col. 61 ll. 31–58.

⁹² Oct. 4, 2022 Hr’g Tr. at 68:6–13 (Enviro Tech’s counsel agreeing that “on the independent claims . . . where they say ‘after the step of,’ that is in order”).

⁹³ Patent, col. 61 ll. 31–58, col. 62 ll. 31–58, col. 63 ll. 31–58, col. 64 ll. 5–33, col. 64 l. 47–col. 65 l. 7.

⁹⁴ Pl.’s Resp. to Def.’s Claim Construction Br. (Doc. 46) at 8.

⁹⁵ *E.g.,* Patent, col. 62 ll. 6–12.

new steps to be performed in between the steps laid out in the independent claims.⁹⁶ Enviro Tech thinks that construing the independent claims to contain an order-of-performance requirement would mean that performing the continuous processes or intervening steps described in the dependent claims takes one outside the scope of the Patent.⁹⁷ If Enviro Tech’s position was right, that would be a major red flag for Safe Foods’s argument. It is a basic rule of claim construction that courts should be wary of construing independent claims in a way that conflicts with the dependent claims.⁹⁸ Moreover, two of the Patent’s dependent claims represent the “preferred embodiment” of using an automated system to constantly monitor and instantly adjust the pH level as necessary.⁹⁹ If the independent claims foreclose such continuous processes, then the preferred embodiment wouldn’t be covered by the Patent. Construing a patent in a way that “excludes the preferred embodiment is rarely, if ever, correct and would require highly persuasive evidentiary support.”¹⁰⁰ So, to repeat myself, if Enviro Tech is correct about a conflict between the independent and dependent claims, that would all but prove that there is no order-of-performance requirement in the independent claims. But Enviro Tech is wrong.

Enviro Tech’s concern originates from a false premise. Indeed, its argument is a bit of a straw man. Safe Foods is simply saying that performance of the steps recited by the independent claims must be performed in their recited order.¹⁰¹ Safe Foods has gone to great pains to make

⁹⁶ *E.g., id.* at col. 62 ll. 13–26.

⁹⁷ Pl.’s Claim Construction Br. (Doc. 40) at 7–9; Pl.’s Resp. to Def.’s Claim Construction Br. (Doc. 46) at 8–9.

⁹⁸ *Littlefuse, Inc. v. Mersen USA EP Corp.*, 29 F.4th 1376, 1380 (Fed. Cir. 2022) (“We must not interpret an independent claim in a way that is inconsistent with a claim which depends from it.” (alteration adopted) (quoting *Wright Med. Tech., Inc. v. Osteonics Corp.*, 122 F.3d 1440, 1445 (Fed. Cir. 1997))).

⁹⁹ *See supra* notes 74–75; Patent, col. 62 ll. 6–12.

¹⁰⁰ *E.g., Eko Brands, LLC v. Adrian Rivera Maynez Enters., Inc.*, 946 F.3d 1367, 1373 (Fed. Cir. 2020) (internal quotation marks omitted) (quoting *SynQor, Inc. v. Artesyn Techs., Inc.*, 709 F.3d 1365, 1378–79 (Fed. Cir. 2013)).

¹⁰¹ Def.’s Claim Construction Br. (Doc. 41) at 18–19; Def.’s Resp. to Pl.’s Claim Construction Br. (Doc. 47) at 9–10.

clear that it is not arguing for an order-of-performance requirement that prohibits (1) intervening steps not recited by the independent claims, or (2) continuous performance of various actions within the independent claims' steps.¹⁰² Given that clarification, it's clear that the independent claims' order-of-performance requirement is compatible with the dependent claims.

Consider, for example, the preferred embodiment. The dependent claims that represent the preferred embodiment require the “determining” and “altering” steps to be performed “continuously.”¹⁰³ That doesn't require performing any recited steps out of order. The chill tank is first filled with peracetic acid-containing water. Some kind of equipment is then continuously “determining” the pH level of the peracetic acid-containing water as other chemicals are added in order to “alter” the pH level into the specified range. Poultry carcasses are added to the chill tank only after the pH has been altered to the specified range. This can occur through either a batch method, with a large number of carcasses added at once, or a conveyor-belt method, with an unprocessed carcass entering the chill tank on one end as a processed carcass exits the chill tank on the other side. Under either method, this step is considered to have been performed as soon as the first poultry carcass enters the chill tank.¹⁰⁴ From that point on, the automated system continuously performs the post-poultry-carcass-addition “determining” and “altering” steps by monitoring the pH level and making instant adjustments as necessary.¹⁰⁵

In short, the Patent is clear. Each recited step of the independent claims, except the first, requires performance of the previous recited step to have occurred. That construction is perfectly

¹⁰² Def.'s Resp. to Pl.'s Claim Construction Br. (Doc. 47) at 9–11.

¹⁰³ *E.g.*, Patent, col. 62 ll. 6–12.

¹⁰⁴ *See id.* at col. 61 ll. 43–46 (requiring the person performing the method to “plac[e] into the [chill tank] at least a portion of a poultry carcass”); Oct. 4, 2022 Hr'g Tr. at 82:20–84:5 (Safe Foods's counsel agreeing that the order-of-performance requirement is satisfied under either the batch method or the conveyer-belt method).

¹⁰⁵ Oct. 4, 2022 Hr'g Tr. at 81:20–82:19.

compatible with the dependent claims and does not foreclose continuous processes or unrecited intervening steps.

II. Indefinite Terms

Safe Foods says that there are two indefinite terms in the Patent's claims. The first is the word "about" when used to describe the target pH range of the peracetic acid-containing water.¹⁰⁶ The second is "antimicrobial amount," which is used to describe the "amount of a solution of peracetic acid" in the chill tank.¹⁰⁷ A patent claim is indefinite if, "viewed in light of the specification and prosecution history," it fails to "inform those skilled in the art about the scope of the invention with reasonable certainty."¹⁰⁸ The indefiniteness inquiry starts with the same general mode of analysis as claim construction.¹⁰⁹

A. "About"

The Patent repeatedly uses the term "about" to delineate the outer boundaries of the specified pH ranges. Claim 1, for example, provides that the pH level of the peracetic acid-containing water must be "about 7.6 to about 10."¹¹⁰ Enviro Tech says this particular term is easy to define because the Patent is simply using "about" in its ordinary meaning of "approximately."¹¹¹ In other words, "slightly less than, slightly greater than, or equal to the pH target all falls within . . . 'about.'"¹¹² In one sense, Enviro Tech is right. Courts regularly construe "about" to mean

¹⁰⁶ Def.'s Claim Construction Br. (Doc. 41) at 25.

¹⁰⁷ *Id.* at 34; Patent, at col. 61 ll. 34–37.

¹⁰⁸ *Nautilus*, 572 U.S. at 910.

¹⁰⁹ See *Niazi Licensing Corp. v. St. Jude Med. S.C., Inc.*, 30 F.4th 1339, 1349 (Fed. Cir. 2022); *HZNP Meds. LLC v. Actavis Lab's UT, Inc.*, 940 F.3d 680, 688 (Fed. Cir. 2019).

¹¹⁰ Patent, col. 61 ll. 41, 52.

¹¹¹ Pl.'s Claim Construction Br. (Doc. 40) at 11–12.

¹¹² Pl.'s Resp. to Def.'s Claim Construction Br. (Doc. 46) at 15.

“approximately” when it is used to modify a numerical amount or range.¹¹³ But—and this is a serious but—it’s not good enough to simply define a claim term: “Even if a claim term’s definition can be reduced to words, the claim is still indefinite if a person of ordinary skill in the art cannot translate the definition into meaningfully precise claim scope.”¹¹⁴ As explained below, the Court concludes that any claim in this patent using “about” to describe the pH range is indefinite.¹¹⁵

In the context of the patent at issue, “about” is properly described as a “word of degree” or “term of degree.”¹¹⁶ Patent claims with terms of degree run an especially high risk of being declared indefinite.¹¹⁷ That’s because using a term of degree, as opposed to specifying a numerical range, necessarily increases the level of ambiguity in a patent claim. Of course, that doesn’t mean a patent claim that uses a term of degree is indefinite *per se*. Terms of degree are definite so long as the claims, specification, and prosecution history “provide[] enough certainty to one of skill in the art when read in the context of the invention.”¹¹⁸

¹¹³ *Merck & Co., Inc. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1369 (Fed. Cir. 2005); *see also Card-Monroe Corp. v. Tufico Corp.*, Case No. 1:14-cv-292, 2016 WL 3212085, at *4–7 (E.D. Tenn. June 9, 2016); *Cipher Pharms. Inc. v. Actavis Lab’ys FL, Inc.*, 99 F.Supp.3d 508, 518–19 (D.N.J. 2015).

¹¹⁴ *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014) (quoting *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1251 (Fed. Cir. 2008)).

¹¹⁵ Enviro Tech cites *Merck & Co.*, *Card-Monroe*, and *Cipher Pharms.* to argue that “about” is so clearly used to mean “approximately” that it cannot be indefinite. Pl.’s Claim Construction Br. (Doc. 40) at 12; Pl.’s Resp. to Def.’s Claim Construction Br. (Doc. 46) at 12–15. Enviro Tech’s argument neglects the slight, but important, distinction between claim construction and the indefiniteness inquiry. Claim construction is the *meaning* of the claim. Here, there’s really no dispute that “about” means “approximately.” But the indefiniteness inquiry goes one step further: Even if the claim has a defined meaning, is the *scope* of that claim reasonably clear? *See Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014); *Cipher Pharms.*, 99 F.Supp.3d at 514, 518. So even if everyone agrees that “about” means “approximately,” it is still unclear when a certain pH level is no longer “approximately” 7.6 pH or 10 pH. Each case that Enviro Tech cites stopped at the claim-construction question. That wouldn’t resolve the dispute here because Enviro Tech has disputed the scope, not merely the meaning, of “about.” *See O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351, 1361 (Fed.Cir. 2008).

¹¹⁶ *See Seattle Box Co., Inc. v. Indus. Crating & Packing, Inc.*, 731 F.2d 818, 826 (Fed. Cir. 1984) (treating the word “substantially” in the phrase “substantially equal to” as “a word of degree”); *see also Card-Monroe*, 2016 WL 3212085, at *4.

¹¹⁷ *See Niazi*, 30 F.4th at 1347 (“[T]he problem patentees face by using [terms of degree] in their claims . . . is whether the use of [terms of degree] in the claim results in a claim that ‘fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of invention.’” (quoting *Nautilus*, 572 U.S. at 901)).

¹¹⁸ *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1363 (Fed. Cir. 2018) (quoting *Interval Licensing*, 766 F.3d at 1370).

The Patent's claims are entirely unhelpful to a skilled artisan. The Court cannot simply adopt Enviro Tech's construction of "about" to mean "approximately" and call it a day. Neither "about" nor "approximately" inform competitors of the Patent's scope. There's no way to know, for example, at what point a pH level is high enough to no longer be considered "about 10."¹¹⁹ Thus, the claims themselves give no indication as to how far one may deviate from the target pH level and stay within the scope of the Patent.¹²⁰

The Patent's specification adds little, if any, clarification. The Patent can be saved from an indefiniteness ruling if the specification "provides a standard for measuring the meaning of the

¹¹⁹ See *Amgen, Inc. v. Chugai Pharm. Co., Ltd.*, 927 F.2d 1200, 1218 (Fed. Cir. 1991). The Court acknowledges that "a patentee need not define his invention with mathematical precision in order to comply with the definiteness requirement." *Sonix Tech. Co., Ltd. v. Publ'ns Int'l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017) (citation omitted). Sometimes, inventors use terms of degree not for the purpose of claiming a numerical range itself, but instead as a form of shorthand to designate "a result achieved." *Zoltek Corp. v. United States*, 48 Fed. Cl. 290, 300 (2000). The patentee's intent in that context is to place any numerical range that produces said result within the scope of the patent. See *id.*; cf. *Exmark Mfg. Co., Inc. v. Briggs & Stratton Power Prods. Grp., LLC*, 879 F.3d 1332, 1346 (Fed. Cir. 2018) (holding that term of degree did not require "numerical precision" because the disputed claim was written using "[f]unctional language" that "provide[d] further guidance regarding the scope of the claim language"). So, with an invention like this, the Patent could have been written in a way that tied the claimed pH range, even if imprecise, to the function it serves, i.e., causing poultry carcasses to gain a significant amount of weight during processing. But that's not this case. Enviro Tech has been very clear that "about" is meant to describe a numerical range. And, because there must be "reasonable certainty" of a patent claim's scope, there must be "reasonable certainty" as to the boundaries of that numerical range. *Nautilus*, 572 U.S. at 910.

¹²⁰ Part of Safe Foods's argument is that the claim language, the specification, and the prosecution history provide multiple, and conflicting, potential claim scopes. See Def.'s Claim Construction Br. (Doc. 41) at 25. It's true that the specification and prosecution history essentially make the scope of "about" a moving target. See *infra* pp. 25–28. But the Court disagrees that the claim language itself provides any evidence of claim scope, conflicting or otherwise. Safe Foods says the claim language, standing alone, would require reading "about" to mean a deviation of "less than 0.3" pH. Def.'s Claim Construction Br. (Doc. 41) at 28. Safe Foods reaches that conclusion by comparing the various pH ranges in the independent claims. *Id.* Safe Foods's primary example is a comparison of Claim 19 ("about 7.6 to about 9") with Claim 10 ("about 7.6 to about 9.3"). *Id.* Safe Foods argues that if "about" is read to allow for a deviation of 0.3 pH or greater, then Claims 19 and 10 "would overlap or be so close [that they] lack meaningful differentiation." Def.'s Resp. to Pl.'s Claim Construction Br. (Doc. 47) at 19 (citing *Versa Corp. v. Ag-Bag Int'l, Ltd.*, 392 F.3d 1325, 1329 (Fed. Cir. 2004)). That argument is unpersuasive. There's no rule that claims in a patent can't overlap. The *Versa* case that Safe Foods cites stands for the much more mundane proposition that each claim in a patent is presumed to have a different scope, such that neither claim is superfluous. 392 F.3d at 1330. If Safe Foods was right, and overlap itself was prohibited, then every independent claim in the Patent besides Claim 1 would be invalid because all of the other pH ranges fall within Claim 1's range of "about 7.6 to about 10." Not even Safe Foods has taken a position that aggressive. The real takeaway from the language of the claims is that there is nothing to take away at all.

term [“about”],’ even without a numerical claim construction.”¹²¹ That can be achieved by “provid[ing] a general guideline and examples sufficient to enable a person of ordinary skill in the art to determine the scope of the claims”¹²² Such guidance is sufficient when it “allow[s] a skilled artisan to compare a potentially infringing product with the examples in the specification to determine whether” the potentially infringing product falls within the scope of the claims.¹²³ But the claim doesn’t have to be defined with such precision that potential competitors are “able to determine *ex ante* if a particular act infringes the claims”¹²⁴ The specification need only provide “guideposts” that allow “a skilled artisan” to draw “meaningfully precise” “objective boundaries” with “reasonable certainty.”¹²⁵

At no point does the specification explicitly attempt to define the permissible level of deviation. The example experiments in the specification do report numerous instances in which Enviro Tech set a target pH, measured the pH, and decided to proceed with the experiment even though the measured pH was not at the exact target level. These experiments are the only “guideposts” in the specification.¹²⁶ But they give conflicting directions.

The great majority of the time, a variation of less than or equal to 0.3 pH was deemed acceptable and the experiment moved forward.¹²⁷ Deviations of 0.4 or greater were almost always

¹²¹ *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1335 (Fed. Cir. 2010) (quoting *Young v. Lumenis, Inc.*, 492 F.3d 1336, 1346 (Fed. Cir. 2007)).

¹²² *Id.* (alteration adopted) (quotation marks and citation omitted).

¹²³ *Sonix*, 844 F.3d at 1377 (quotation marks and citation omitted); *see also Niazi*, 30 F.4th at 1346–49.

¹²⁴ *Niazi*, 30 F.4th at 1347 (quoting *Nevro Corp. v. Bos. Sci. Corp.*, 955 F.3d 35, 40 (Fed. Cir. 2020)).

¹²⁵ *Id.* at 1347–48; *Interval Licensing*, 766 F.3d at 1370–71. One could be forgiven for thinking that the indefiniteness standard is itself somewhat indefinite. *See Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1379 (Fed. Cir. 2015) (criticizing the “reasonable certainty” standard).

¹²⁶ *Niazi*, 30 F.4th at 1348.

¹²⁷ There are at least fifty-three instances in which a deviation from the target pH was deemed permissible. Forty-four times, the permissible deviation was less than or equal to 0.3 pH. *See* Patent, col. 39, Table XX (deviations of 0.02, 0.04, 0.04, 0.09, and 0.12 pH); *id.* at col. 41 l. 47–col. 42 l. 8 (deviations of 0.05, 0.09, 0.12, and 0.28 pH); *id.* at col. 43 l. 44–col. 44 l. 8 (deviations of 0.06, 0.15, 0.2, 0.2, 0.22, 0.3 and pH); *id.* at col. 46 ll. 41–45 (deviations of 0.06

deemed too large and prompted Enviro Tech to alter the pH level before proceeding with the experiment.¹²⁸ Based on that, it would seem that the specification provides pretty clear guidance: a deviation of 0.3 pH or less is okay; anything more is too much. But the remaining evidence negates that inference. At one point, Enviro Tech permitted a deviation of 0.35 pH.¹²⁹ So that makes 0.3–0.4 pH a bit of a gray area. Far more troubling is that at eight other points, deviations of 0.4, 0.44, or 0.5 pH were allowed.¹³⁰ And there’s no obvious explanation as to why 0.4 pH was too much of a deviation at one point, while deviations of 0.4, 0.44, and 0.5 pH were permissible at other points.

One experiment is of particular importance. Enviro Tech took over the plant of a “major U.S. processor of poultry” for twenty-nine days and tested the patented method on a total of “5,800,000 birds”¹³¹ Every other experiment recorded in the Patent was extremely scaled back in comparison, involving approximately two-dozen or so carcasses being chilled and sanitized in “bins.”¹³² So this experiment is the most instructive as to what level of deviation Enviro Tech considered permissible in practice. On seven of the twenty-nine days, the pH deviated from the target pH by 0.35–0.5 pH.¹³³ On four consecutive days, the pH was 0.4 or 0.5 pH above

and 0.3 pH); *id.* at col. 51, Table XXXV (deviations of 0.04 and 0.07 pH); *id.* at col. 52 ll. 48–55 (deviations of 0.2 and 0.2 pH); *id.* at col. 55 ll. 56–62 (deviations of 0.1 and 0.1 pH); *id.* at col. 59, Table XXXXVII (deviations of 0.1, 0.12, 0.2, 0.2, 0.2, and 0.2 pH); *id.* at col. 59, Table XXXXVIII (deviations of 0.01, 0.02, 0.02, 0.05, 0.05, 0.05, 0.1, 0.1, 0.1, 0.1, 0.11, 0.13, 0.15, 0.27, and 0.3 pH).

¹²⁸ *E.g.*, *id.* at col. 43 l. 58 (deviation of 0.7 pH prompted alteration); *id.* at col. 44 l. 7 (deviation of 0.4 pH prompted alteration).

¹²⁹ *Id.* at col. 59, Table XXXXVIII.

¹³⁰ *Id.* at col. 42 ll. 3–8 (deviation of 0.44 pH); *id.* at col. 55 ll. 56–62 (deviation of 0.4 pH); *id.* at col. 59, Table XXXXVII (three deviations of 0.4 pH and three deviations of 0.5 pH).

¹³¹ *Id.* at col. 58 l. 19–col. 60 l. 46.

¹³² *Id.* at col. 43 ll. 12–31 (twenty chickens soaked in two thirty-gallon bins); *id.* at col. 46 ll. 11–24 (thirty chickens soaked in three thirty-gallon bins); *id.* at col. 52 ll. 4–17 (forty-five chickens soaked in three thirty-gallon bins); *id.* at col. 55 ll. 11–24 (fifteen chickens soaked in three thirty-gallon bins).

¹³³ *Id.* at col. 59, Table XXXXVII (days 2, 4–7, and 13); *id.* at col. 59, Table XXXXVIII (day 3).

the target.¹³⁴ Yet, there is no indication that Enviro Tech found the deviations to be an issue. There's no mention of "altering" the pH to get closer to the target level.

A person of ordinary skill in the art could read the entire Patent and reasonably reach two conflicting conclusions. Relying on the vast majority of the examples in the specification teaches that the Patent's scope ends when someone deviates more than 0.3 pH from the target. But relying on the most instructive example (and some other minor examples) would tell you that the scope of the Patent extends to deviations up to 0.5 pH. Thus, the specification does not provide "reasonable certainty" of the Patent's scope.

The prosecution history only adds to the uncertainty. As with the Patent itself, Enviro Tech never explicitly defined the limits of "about" during prosecution. Instead, the prosecution history indicates that Enviro Tech did not contemplate any objective, "meaningfully precise" standards for "about."¹³⁵ There are times when Enviro Tech implicitly took the position that "about" means a deviation of less than 0.3 pH.¹³⁶ At other points, Enviro Tech essentially conceded that "about" could in fact extend to a deviation of 0.3 pH.¹³⁷ And Enviro Tech sometimes ignored the word

¹³⁴ *Id.* at col. 59, Table XXXXVII (days 4–7).

¹³⁵ *Interval Licensing*, 766 F.3d at 1371 (quoting *Halliburton*, 514 F.3d at 1251).

¹³⁶ In the original patent application, the claimed pH range was "about 6 to about 9." Ex. B to Pl.'s Claim Construction Br. (Doc. 40-2) at 120. The PTO examiner rejected that claim because of prior art that disclosed processing poultry with chill tanks up to a pH level of 7. *Id.* at 304. To stand a chance of receiving its patent, Enviro Tech needed to amend the claims in a way that avoided overlapping with that prior art. So Enviro Tech changed the claimed range to "about 7.3 to about 10." *Id.* at 321. This amendment would have been pointless if "about" covered a deviation of 0.3 pH or more because the new claimed range would still have overlapped with the prior art.

¹³⁷ The PTO examiner rejected "about 7.3" because it was still too close to the prior art's disclosure of 7 pH. *Id.* at 352–53. So the PTO examiner understood "about 7.3" to cover a deviation of at least 0.3 pH. Enviro Tech did not dispute this understanding. Instead, it amended a second time and raised the claimed range to "about 7.6 to about 10." *Id.* at 369. If "about 7.3" would not have overlapped with the prior art, then it's fair to expect that Enviro Tech would have said as much instead of immediately surrendering claim scope.

“about” entirely when describing the scope of the Patent.¹³⁸ There’s simply no way to know what—if any—limits rein in “about.”

Enviro Tech agrees—indeed, it affirmatively argues—that the intrinsic evidence doesn’t provide an objective standard for measuring the scope of “about.”¹³⁹ Enviro Tech just thinks the issue is a jury question. As Enviro Tech sees it, the jury will hear competing expert testimony as to whether Safe Foods’s actions fall within the scope of a claim containing the phrase “about.”¹⁴⁰ That’s wrong. The result of Enviro Tech’s theory is that the jury would be deciding not only the fact question of infringement, but also the scope of the Patent itself. And it is black-letter law that “[w]hen the parties raise an actual dispute regarding the proper scope” of a patent, “the court, not the jury, must resolve that dispute.”¹⁴¹

In short, all the intrinsic evidence is hopelessly conflicting as to the scope of “about”—in a way that renders the claims in this patent using “about” to define a pH range indefinite. And extrinsic evidence is of no help here, either. Typically, extrinsic evidence is most useful to determine whether the allegedly indefinite patent claim is using a term of art with a well understood

¹³⁸ After amending to “about 7.6 to about 10,” the PTO examiner again rejected the claims because of the prior art. *Id.* at 418. Enviro Tech disputed the examiner’s conclusion. *Id.* at 428–43. In some portions of that dispute, Enviro Tech included “about” when discussing the claimed range. *See id.* at 431 (“The claimed pH range of about 7.6 to about 10 . . .”). At other points, it dropped “about” and described the claimed range as simply “7.6 to 10 . . .” *See id.* at 441 (discussing “a step of adjusting the pH to the range of 7.6 to 10”); *id.* (describing “the lower end of the claimed range, pH 7.6” and “[t]he upper end of the claimed range, pH 10”). One could try to squint and see this as some kind of prosecution-history disclaimer. *See* Def.’s Claim Construction Br. (Doc. 47) at 19. And that may actually be the best-case scenario for Enviro Tech: The term “about” could simply be struck from the Patent and the claims containing the pH ranges would become definite because they have precise boundaries. But that’s not a real option. Nothing in the prosecution history on this point comes close to a “clear and unmistakable” “disavowing action[] or statement[]” by Enviro Tech. *Aylus Networks*, 856 F.3d at 1359 (citation omitted). Applying a relaxed standard here would be an improper effort to preserve the Patent’s validity. *See Free Motion Fitness, Inc. v. Cybex Int’l, Inc.*, 423 F.3d 1343, 1349 n.4 (Fed. Cir. 2005). The prosecution history proves the same thing as the Patent itself—“about” has no discernable boundaries.

¹³⁹ Pl.’s Resp. to Def.’s Claim Construction Br. (Doc. 46) at 13–16; Oct. 4, 2022 Hr’g Tr. at 99:3–13.

¹⁴⁰ Oct. 4, 2022 Hr’g Tr. at 94:13–96:3.

¹⁴¹ *O2 Micro*, 521 F.3d at 1360.

meaning in the relevant industry or field.¹⁴² For example, it's possible that, in the poultry-processing industry, it is so common to approximate pH levels that a person of ordinary skill in the art would know when a certain pH level is "about 7.6" or "about 10" pH. But this Court has no way of knowing that. Enviro Tech, consistent with its position that "about" cannot have and does not need to have a defined scope, doesn't present any extrinsic evidence on this point at all. Neither does Safe Foods. And the Court has found none on its own.

B. "Antimicrobial Amount"

The Patent's independent claims each require filling the chill tank with "water and an antimicrobial amount of a solution of peracetic acid."¹⁴³ The Patent uses "antimicrobial amount" as a "functional" claim term.¹⁴⁴ That means it is "defined 'by what it does rather than what it is.'"¹⁴⁵ Functional language is inherently ambiguous.¹⁴⁶ But "'there is nothing intrinsically wrong with' using" it.¹⁴⁷ A patentee writing with functional language just needs to take extra care "to provide a clear-cut indication of the scope of subject matter embraced by the claim"¹⁴⁸ A functional claim is definite when the patent (1) defines the function to be performed and (2) provides guidance as to methods of achieving the defined function.¹⁴⁹ If those two boxes are

¹⁴² See *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335, 1339 (Fed. Cir. 2015); *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980–81 (Fed. Cir. 1995).

¹⁴³ Patent, col. 61 ll. 35–37; *id.* at col. 62 ll. 36–37; *id.* at col. 63 ll. 36–37; *id.* at col. 64 ll. 10–11, 52–53.

¹⁴⁴ Pl.'s Claim Construction Br. (Doc. 40) at 12–13; Def.'s Resp. to Pl.'s Claim Construction Br. (Doc. 47) at 23.

¹⁴⁵ *Halliburton*, 514 F.3d at 1255 (quoting *In re Swinehart*, 439 F.2d 210, 212 (C.C.P.A. 1971)).

¹⁴⁶ *Nevro Corp.*, 955 F.3d at 39.

¹⁴⁷ *Halliburton*, 514 F.3d at 1255 (quoting *In re Swinehart*, 439 F.2d at 212–13).

¹⁴⁸ *Id.* (quoting *In re Swinehart*, 439 F.2d at 212–13).

¹⁴⁹ See *id.* at 1254 (stating that the failure to define the function to be performed is a failure to "answer the fundamental question"); *United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 228, 234 (1942) (holding claims indefinite when they were "but inaccurate suggestions of the functions of the product"); *Nevro Corp.*, 955 F.3d at 39 (holding that a patent claim wasn't indefinite because it "teaches how to generate and deliver the claimed signals using the recited parameters").

checked, then “all embodiments performing the recited function” fall within the scope of the patent.¹⁵⁰ Here, the problem for Enviro Tech is that the Patent fails to define the function with “reasonable certainty.”¹⁵¹

The Patent at least attempts to define the function. In each of the four embodiments, the Patent instructs: “An antimicrobial amount of [peracetic acid] is used. The amount is sufficient to prevent cross-contamination of bacteria between the poultry carcasses and to eradicate or reduce any pathogenic or spoilage microorganisms still resident on the carcasses.”¹⁵² So, at least at the surface level, the Patent gives a pretty clear definition: To be “antimicrobial,” the amount of peracetic acid used must (1) allow absolutely no cross-contamination of bacteria, *and* (2) cause a reduction (of any level) in pathogenic or spoilage microorganisms.¹⁵³

The Patent’s relatively clear definition doesn’t hold up to closer scrutiny. The experiment examples in the specification establish that Enviro Tech didn’t consider a solution “antimicrobial”

¹⁵⁰ *Geneva Pharms., Inc. v. GlaxoSmithKline PLC*, 349 F.3d 1373, 1384 (Fed. Cir. 2003).

¹⁵¹ *Nautilus*, 572 U.S. at 910.

¹⁵² Patent, col. 30 ll. 8–12 (first embodiment); *see also id.* at col. 31 ll. 11–14 (second embodiment); *id.* at col. 33 ll. 30–34 (third embodiment); *id.* at col. 35 ll. 46–50 (fourth embodiment). Enviro Tech proposes a second possible definition of the function: Passing federal government food safety inspections. Oct. 4, 2022 Hr’g Tr. at 128:17–20. There’s certainly common-sense appeal to that definition, considering this is a food-processing-method patent intended for use by American poultry processors. Indeed, the Patent makes a few references to Food Safety Inspection Service (FSIS) regulations. *See* Patent, at col. 5 l. 66–col. 6 l. 26, col. 58 ll. 62–65. There are two problems with adopting this definition, however. First, one can only arrive at this definition by way of inference, while the Patent provides an explicit definition for “antimicrobial amount.” It would seem odd to substitute the provided definition for a sporadically referenced, but unspecified, government regulatory standard. Second, the FSIS-based definition would likely prove indefinite, too. Safe Foods has outlined what FSIS “testing” entails, and it isn’t a simple pass-or-fail inspection. Instead, it is more of a way for the federal government to know where to focus its regulatory resources. *See* Def.’s Claim Construction Br. (Doc. 41) at 47–48. Whether a processor “passes” FSIS testing is linked more to that processor’s subjective tolerance for being regulated than to any objective standards. That is, a processor can simply decide it is okay with being subjected to more government oversight later on and therefore hold itself to lower food-safety standards in the present. *Id.* So Enviro Tech’s backup definition wouldn’t solve its indefiniteness problem because infringement would depend on a processor’s subjective goals. *See Geneva Pharms.*, 349 F.3d at 1384 (holding claim term indefinite when “a given embodiment would simultaneously infringe and not infringe the claims, depending on the particular bacteria chosen for analysis”); *Sonix*, 844 F.3d at 1378 (stating that a claim is indefinite when it is “completely dependent on a person’s subjective opinion” (citation omitted)).

¹⁵³ Oct. 4, 2022 Hr’g Tr. at 131:19–132:19.

simply because it led to any level of reduction in microorganisms. The Patent reports seven experiments in which Enviro Tech tested the antimicrobial efficacy of various concentrations of peracetic acid at various pH levels.¹⁵⁴ During these experiments, Enviro Tech would periodically measure how much the solution had reduced the amount of a particular microorganism. Over the course of the seven experiments, the Patent records ninety-four times at which there was a reduction of microorganisms.¹⁵⁵ But the Patent doesn't identify (implicitly or explicitly) each reduction as proof of antimicrobial efficacy. If any reduction amount was sufficient, then all of these results would have been examples of antimicrobial amounts of peracetic acid. So it appears that a solution must cause some minimum amount of reduction to be "antimicrobial." But the Patent doesn't disclose the minimum amount. Nor is there a consistent trend from which a person of ordinary skill in the art could infer that minimum amount. Reductions of $\log_{10}$ 0.21, 0.36, and 0.6 (38.02%, 56.12%, and 74.88%, respectively) were deemed effective.¹⁵⁶ Reductions of $\log_{10}$ 0.3, 0.4, 0.44, 0.47, and 0.61 (49.88%, 60.19%, 63.69%, 66.12%, and 75.45%, respectively) were not.¹⁵⁷ In short, "nothing in [the Patent] suggests what degree of such [reduction] is sufficient."¹⁵⁸

¹⁵⁴ Patent, col. 28 l. 6–col. 29 l. 52; *id.* at col. 38 l. 51–col. 41 l. 7; *id.* at col. 41 l. 11–col. 43 l. 2; *id.* at col. 48 l. 23–col. 50 l. 59; *id.* at col. 50 l. 59–col. 51 l. 61; *id.* at col. 51 l. 65–col. 55 l. 2; *id.* at col. 55 l. 6–col. 58 l. 7; *see also id.* at col. 58 ll. 62–65 (stating that a rate of 1 positive *Salmonella* test for every 51 processed birds displayed "antimicrobial efficacy").

¹⁵⁵ *Id.* at col. 29, Table XVIII (four reductions); *id.* at col. 29, Table XIX (four reductions); *id.* at col. 40, Table XXII (eighteen reductions); *id.* at col. 42, Table XXIII (twelve reductions); *id.* at col. 42, Table XXIV (six reductions); *id.* at col. 50, Table XXXIII (fifteen reductions); *id.* at col. 50, Table XXXIV (sixteen reductions); *id.* at col. 51, Table XXXV (seven reductions); *id.* at col. 53, Table XXXVII (six reductions); *id.* at col. 56, Table XXXXII (six reductions).

¹⁵⁶ *Id.* at col. 29 ll. 46–47; *id.* at col. 56 ll. 50–53 (stating that a solution was "effective at reducing" the spoilage microorganism when it caused a $\log_{10}$ 0.6 (74.88%) reduction).

¹⁵⁷ *Id.* at col. 29 ll. 46–47; *id.* at col. 40 ll. 63–66 (stating that the tested solution was "effective" at all tested pH ranges except the one pH level that produced reductions of $\log_{10}$ 0.1 and 0.3); *id.* at col. 42 ll. 37–42 (excluding $\log_{10}$ reductions of 0.4 (60.19%), 0.44 (63.69%), 0.47 (66.12%), and 0.61 (75.45%) from discussion of peracetic-acid doses that were "effective at reducing" the spoilage microorganism).

¹⁵⁸ *Halliburton*, 514 F.3d at 1254.

There's nothing to glean from the extrinsic evidence, either. Enviro Tech only uses extrinsic evidence in an attempt to bolster its argument that “antimicrobial amount” is self-explanatory.¹⁵⁹ But that misses the point. Nobody disputes that an “antimicrobial amount” is supposed to reduce microorganisms. The question is by how much. No evidence—intrinsic or extrinsic—answers that question. And Safe Foods's extrinsic evidence actually makes the Patent's use of “antimicrobial amount” seem more ambiguous than the intrinsic evidence alone would lead one to believe.¹⁶⁰ In the end, the scope of the independent claims cannot be determined with “reasonable certainty” because the term “antimicrobial amount” is indefinite.

CONCLUSION

The Court directs the parties to file simultaneous briefs (of no more than five pages each) that propose the proper procedural disposition of the case, or next step in the case, given the Court's conclusions in today's Order. Those briefs must be filed within fourteen days from the date of today's Order. This is not a chance for re-argument. Rather, it is a chance to weigh in on what the Court should do next in this case.

IT IS SO ORDERED this 15th day of December 2022.



LEE P. RUDOFSKY
UNITED STATES DISTRICT JUDGE

¹⁵⁹ Pl.'s Claim Construction Br. (Doc. 40) at 12; *see also* Pl.'s Resp. to Def.'s Claim Construction Br. (Doc. 46) at 16–21.

¹⁶⁰ Ex. D (Mills Decl.) to Def.'s Claim Construction Br. (Doc. 41-30) ¶ 44 (Safe Foods's proffered expert witness testifying that “one of ordinary skill in the art would recognize that ‘an antimicrobial amount’ . . . would have varied depending on a multiplicity of subjective interactive and competing factors”); *see id.* ¶¶ 43–52 (discussing those “other factors” in detail).