IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

SUNOCO PARTNERS MARKETING & TERMINALS L.P.,	)	
Plaintiff,	)	
v.	)	Civil Action No. 17-1390-LPS-CJB
POWDER SPRINGS LOGISTICS, LLC, AND MAGELLAN MIDSTREAM PARTNERS, L.P.,	)	
Defendants.	)	

REPORT AND RECOMMENDATION

In this action filed by Plaintiff Sunoco Partners Marketing & Terminals L.P ("Sunoco" or "Plaintiff") against Powder Springs Logistics, LLC ("Powder Springs") and Magellan Midstream Partners, L.P. ("Magellan" and collectively with Powder Springs, "Defendants"), Sunoco alleges infringement of United States Patent Nos. 6,679,302 (the "'302 patent"), 7,032,629 (the "'629 patent"), 9,207,686 (the "'686 patent"), 9,494,948 (the "'948 patent) and 9,606,548 (the "'548 patent" and collectively with the other patents, "the asserted patents").[1] Presently before the Court is the matter of claim construction. The Court recommends that the District Court adopt the constructions as set forth below.

I. BACKGROUND AND STANDARD OF REVIEW

The Court hereby incorporates by reference the summary of the background of this matter set out in its July 26, 2019 Report and Recommendation ("July 26 R&R"). (D.I. 321 at 1-

[1] Four of the five asserted patents (the '302 patent, '629 patent, '948 patent and '548 patent) are at issue in another litigation (the "Illinois Litigation"). (*See* D.I. 176 at 4; *Sunoco Partners Mktg. & Terminals, L.P. v. U.S. Venture, Inc.*, No. 15-CV-8178 (D.I. 161) (N.D. Ill. Apr. 10, 2017)) Sunoco also asserts United States Patent No. 7,631,671 (the "'671 patent") in the Illinois Litigation. (D.I. 176 at 5 n.7) The '686, '948 and '548 patents are all continuations of the '671 patent. (*Id.*)

2) It additionally incorporates by reference the legal principles regarding claim construction set out in the July 26, 2019 R&R. (*Id.* at 2-5) Because Defendants contend that certain of the disputed claim terms addressed herein are indefinite, (*see, e.g.*, D.I. 171 at 17-20), the Court further includes below the applicable standard for definiteness.

The primary purpose of the definiteness requirement is to ensure that patent claims are written in such a way that they give notice to the public of what is claimed, thus enabling interested members of the public (e.g., competitors of the patent owner) to determine whether they infringe. *All Dental Prodx, LLC v. Advantage Dental Prods., Inc.*, 309 F.3d 774, 779-80 (Fed. Cir. 2002). Put another way, "[a] patent holder should know what he owns, and the public should know what he does not." *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 731 (2002). Even so, the Supreme Court of the United States has recognized that "absolute precision is unattainable" and not required. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014).

"[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Id.* at 901. Definiteness is to be evaluated from the perspective of a person of ordinary skill in the art at the time the patent was filed. *Id.* at 908.

Like claim construction, definiteness is a question of law for the court. *H-W Tech., L.C. v. Overstock.com, Inc.*, 758 F.3d 1329, 1332 (Fed. Cir. 2014); *Pi-Net Int'l Inc. v. JPMorgan Chase & Co.*, 42 F. Supp. 3d 579, 586 (D. Del. 2014). The United States Court of Appeals for the Federal Circuit has stated that "[a]ny fact critical to a holding on indefiniteness . . . must be proven by the challenger by clear and convincing evidence." *Intel Corp. v. VIA Techs., Inc.*, 319

F.3d 1357, 1366 (Fed. Cir. 2003); *see also Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1338 (Fed. Cir. 2008).[2]

II. DISCUSSION

The parties had claim construction disputes regarding five terms or sets of terms (hereinafter, "terms"). The Court has addressed one of these terms in a previously-issued Report and Recommendation. (D.I. 321) The Court addresses three of the four remaining terms herein; the final term ("gasoline") will be addressed in a separate Report and Recommendation.

A. "vapor pressure"

The claim term "vapor pressure" appears in claims of all five asserted patents. (D.I. 166, ex. A at 3-4) The parties' competing proposed constructions for "vapor pressure" are set out in the chart below:

Term	**Plaintiff's Proposed Construction**	**Defendants' Proposed Construction**
"vapor pressure"	Plain and ordinary meaning, or alternatively, "a physical property of volatile liquids"	"volatility of gasoline or butane, including as measured by Reid vapor pressure, true vapor pressure, and vapor/liquid ratio"

(D.I. 171 at 13) The parties have two main disputes with respect to this term: (1) whether "vapor pressure" means the same thing as "volatility" (and relatedly, whether measuring vapor/liquid ratio qualifies as a way to measure vapor pressure); and (2) whether the construction

[2] In *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898 (2014), the Supreme Court left open the question of whether factual findings subsidiary to the ultimate issue of definiteness should, in fact, trigger the application of a "clear-and-convincing-evidence standard[,]" noting that it would "leave th[is] question[] for another day." *Nautilus*, 572 U.S. at 912 n.10. In the absence of Supreme Court precedent to the contrary, the Federal Circuit's case law (utilizing the clear-and-convincing-evidence standard) controls. *See Cal. Inst. of Tech. v. Hughes Commc'ns Inc.*, 35 F. Supp. 3d 1176, 1182 n.4 (C.D. Cal. 2014).

should require a measurement. (*See, e.g.*, Tr. at 95-96, 109-10; D.I. 188 at 8, 10) Defendants believe that the answer to both questions is "yes," as is reflected in their proposal. The Court will first explain why it does not agree, and will then consider the appropriate construction for the term.

1. Why Defendants' Proposed Limitations Are Not Appropriate

Is "vapor pressure" the exact same thing as "volatility," as Defendants' construction suggests? In the Court's view, the answer (pursuant to the intrinsic record) is "no."

Rather, the specification of the '302 patent explains with respect to volatility that "[a] significant physical property of gasoline is its volatility, or its ability to combust[,]" and that measuring the vapor pressure of gasoline *is a way to assess* the volatility of the gasoline. ('302 patent, col. 1:28-34) To that end, the specification states that:

> There are two principle *methods for assessing* the volatility of gasoline: (1) measuring the vapor-liquid ratio, and (2) measuring the vapor pressure. The Reid method is the standard test for measuring the vapor pressure of petroleum products. Reid vapor pressure (sometimes "RVP") is related to true vapor pressure, but is a more accurate assessment for petroleum products because it considers sample vaporization as well as the presence of water vapor and air in the measuring chamber.

(*Id.*, col. 1:29-37 (emphasis added)) With respect to the relationship between vapor pressure and volatility, this portion of the specification conveys that "[t]he Reid vapor pressure of gasoline affects the ease with which gasoline is combusted[,]" (*id.*, col. 1:38-40 (emphasis added)), and that gasoline marketers blend agents including butane into gasoline "to increase the Reid vapor pressure *and* volatility of the gasoline[,]" (*id.*, col. 1:44-48 (emphasis added)). This all suggests that, according to the patents, while vapor pressure is something that, when measured, can help one assess the volatility of gasoline, vapor pressure and volatility are not the same thing. (D.I.

315 ("Tr.") at 100-01, 123 (Defendants' counsel acknowledging that measuring vapor pressure is a "method[] of measuring volatility"))

Relatedly, does measuring "vapor/liquid ratio" qualify as a way to measure "vapor pressure" and are "vapor/liquid ratio" and "vapor pressure" the same thing (as Defendants suggest)? Again, in the Court's view, the answer is "no."

In support of their position to the contrary, Defendants point to a portion of the '302 patent specification that they contend "[e]xpressly define[s]" the term vapor pressure as reflected in their proposal. (D.I. 171 at 13 (emphasis omitted); *see also* D.I. 188 at 8; Tr. at 104-05) That portion of the specification states that:

> In the description of the embodiments of the invention and the claims that follow, measuring the vapor pressure will refer generally to the volatility of the gasoline or butane. Indeed, the term vapor pressure is meant to encompass both Reid vapor pressure as measured by applicable ASTM procedures, and other measures of vapor pressure such as true vapor pressure and vapor/liquid ratio.

('302 patent, col. 5:47-53) Defendants' counsel asserts that this description tells us that when the patentee uses "vapor pressure" in the claims, the patentee is "referring to all three of those volatility measurements [i.e., vapor/liquid ratio, Reid vapor pressure, and true vapor pressure]." (Tr. at 102; *see also id.* at 103 ("I think generally [with respect to the term] vapor pressure, [the patentee] equate[s] it to volatility and volatility can be measured [in these three ways].")) And the Court acknowledges that this portion of the specification, read in isolation, is helpful to Defendants' position. Indeed, even Sunoco concedes that the above sentence "is perhaps confusing" with respect to the definition of vapor pressure. (*Id.* at 117)

But ultimately, the Court agrees with Sunoco that when the entire intrinsic record is considered, that record demonstrates that "vapor pressure" and "vapor/liquid ratio" do not mean

the same thing. This is seen by examining other portions of the patent specifications as well as certain of the patents' claims.

With regard to the patent specifications, it is for example notable that in the very next sentences following the '302 patent excerpt referenced above, the patentee explains that:

> It should be understood that *vapor pressure measurements can also include a measurement of the vapor-liquid ratio at a certain temperature*. In certain embodiments of the present invention measurements may be taken *for both vapor pressure and vapor-liquid ratio*.

('302 patent, col. 5:53-58 (emphasis added))[3] If "vapor pressure" and "vapor/liquid ratio" meant the exact same thing, and if measuring "vapor pressure" and measuring "vapor/liquid ratio" described the exact same process, then these sentences would not make sense. (Tr. at 116-18 ("[I]f vapor pressure was the same as vapor to liquid ratio, why would you say include a measurement of the vapor to liquid ratio [at] certain temperatures with vapor pressure measurement.")) Moreover, the '302 patent and '548 patent specifications explain that "[i]n an alternative embodiment of the invention, the *vapor-liquid ratio of the gasoline may be measured instead of, or in conjunction with the vapor pressure*, to assess the volatility of the gasoline. Other embodiments of the invention may measure other physical characteristics to determine the volatility of the gasoline." ('302 patent, col. 11:12-17 (emphasis added); '548 patent, col. 16:52-57 (emphasis added); *see also* '302 patent, col. 3:23-31 (noting that the ratio of gasoline and

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[3] It does not appear to be in dispute that one can determine the Reid vapor pressure from the vapor-to-liquid ratio if one also knows "the gasoline's distillation measurements at 10°F ('T_{10}') and 50°F ('T_{50}')[.]" (*See* D.I. 193 at 5; D.I. 28 at ¶ 30)

butane to be blended can be varied to "achieve any desired vapor pressure *or* vapor/liquid ratio") (emphasis added))[4]

The '302 patent's claims also indicate that "vapor pressure" and "vapor/liquid ratio" are not the same thing. (D.I. 176 at 9-10; D.I. 191 at 7) For example, independent claim 27 of the '302 patent recites, *inter alia*, "[a] method for blending butane and gasoline using a processor" that includes "receiving a gasoline *volatility* measurement at the processor." ('302 patent, col. 15:54-65 (emphasis added)) Claim 33 then recites "[t]he method of claim **27** *wherein the gasoline volatility measurement is the vapor-liquid ratio* of the gasoline." (*Id.*, col. 16:14-15 (emphasis added)) Claim 34 then recites "[t]he method of claim **27** *wherein the gasoline volatility measurement is the vapor pressure* of the gasoline." (*Id.*, col. 16:17-18 (emphasis added)) The Court agrees with Sunoco that these claims indicate that "while 'volatility' includes 'vapor-liquid ratio' and 'vapor pressure,' the term 'vapor pressure' does not include 'vapor-liquid ratio.'" (D.I. 176 at 10); *see also, e.g.*, *Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.*, 672 F.3d 1335, 1349 (Fed. Cir. 2012) ("The fact that the two adjacent claims use different terms

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[4] Figure 4 of the '302 patent, and the specification's accompanying description thereof, also seem to support the conclusion that a vapor/liquid ratio measurement is not the same thing as a vapor pressure measurement. Figure 4 is a diagram illustrating the steps of the blending process. The analyzer first draws a sample of gasoline and a sample of butane. ('302 patent, FIG. 4) Then, the patent explains that at step 415: "the analyzer **250** assesses the volatility of the butane sample and gasoline sample. The volatility of the samples is determined by measuring the vapor pressure of both the butane and the gasoline. The Reid vapor pressure test is generally employed when measuring the volatility of petroleum products. In step **420**, the analyzer **250** measures the vapor-liquid ratio of the gasoline. *The lower of the vapor-liquid ratio or the Reid vapor pressure of the gasoline* will be used in calculating the amount of butane that can be safely blended." (*Id.*, col. 12:4-14 (emphasis added); *see also, e.g.*, *id.*, col. 3:40-43 ("In a preferred embodiment, the process control unit determines the blending ratio from the *vapor pressure and vapor/liquid ratio assessments*, adopting the lowest rate of butane blending from the two methods.") (emphasis added))

in parallel settings supports the district court's conclusion that the two terms were not meant to have the same meaning[.]").

Therefore, in the Court's view, the patents as a whole convey that: (1) vapor pressure and vapor/liquid ratio are two physical characteristics of gasoline; and (2) measuring these physical characteristics constitutes two separate, principle methods of assessing the volatility of gasoline.[5]

Lastly, the Court further agrees with Sunoco that Defendants' proposal wrongly includes a limitation that the "vapor pressure" must be "measured." Defendants fail to show that the term "vapor pressure" alone imposes a requirement that an actual measurement be performed; rather, the term, standing alone, appears to simply describe a particular physical property of volatile liquids. (D.I. 176 at 9 & ex. A at ¶ 5.1) Of course, the intrinsic record makes clear that "vapor pressure" is something that *can be* measured. For example, the specification of the '302 patent explains that one of the principle methods for assessing the volatility of gasoline is "measuring the vapor pressure." ('302 patent, col. 1:29-31) It is just that the use of the term "vapor pressure" itself does not inherently require a measurement.

Certain claims of the asserted patents also bear this out. For instance, claim 14 of the '302 patent recites a method for blending gasoline and butane at a tank farm "wherein the blend ratio is determined from a *vapor pressure* of the gasoline stream and a *vapor pressure* of the

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[5] The Court notes that the United States Patent and Trademark Office's Patent Trial and Appeal Board ("PTAB") construed "vapor pressure" in line with Defendants' proposal here. (D.I. 277 at 1 & ex. A at 15-17) But the PTAB utilized a different standard (the "broadest reasonable interpretation" standard) than the standard the Court uses here (the *Phillips* standard). (D.I. 278 at 1) The Court is confident, having reviewed the PTAB's analysis, (D.I. 277, ex. A at 15-17), that had the PTAB utilized the *Phillips* standard, the PTAB would not have adopted the position Defendants advocate here.

butane stream." (*Id.*, col. 14:19-21 (emphasis added)) This claim does not expressly recite a requirement that the vapor pressure actually be measured. (*See* D.I. 191 at 9) Meanwhile, in contrast, claim 15 of the '302 patent recites a method for blending gasoline and butane at a tank farm wherein a vapor pressure of the gasoline stream and a vapor pressure of the butane are "determined" by "drawing a sample of gasoline [and] measuring the vapor pressure of the sample of gasoline" (and doing the same for the sample of butane). ('302 patent, col. 14:22-31) When the claims require an actual measurement of vapor pressure, they make that clear through the use of express measurement limitations. (*See* D.I. 176 at 11)

2. The Proper Construction for the Term

With all of the above established, the Court must now consider the proper construction for "vapor pressure." Sunoco's proposal, "a physical property of volatile liquids," addresses the meaning of vapor pressure at a very high level, but fails to explain what vapor pressure *actually is*—i.e., what physical property of such liquids is vapor pressure describing? (*See* D.I. 188 at 10) It would be helpful to a factfinder to have some substantive explanation on that front.

Defendants have described vapor pressure as constituting "the pressure exerted by vapor as it evaporates." (D.I. 179, Slide 110) And the American Society for Testing and Materials ("ASTM") Standard Test Method for Vapor Pressure of Petroleum Products, cited by Sunoco in its brief, defines vapor pressure as "'pressure exerted by the vapor of a liquid when in equilibrium with the liquid.'" (D.I. 176 at 9 (quoting *id.*, ex. A at ¶ 3.1.5))[6] Thus, the parties seem to have similar understandings with respect to what "vapor pressure" actually is.

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[6] The ASTM and its publications are referenced and relied upon repeatedly in the patents. (*See, e.g.*, '302 patent, col. 6:35-55)

Therefore, the Court recommends that "vapor pressure" be construed to mean "pressure exerted by the vapor of a liquid when in equilibrium with the liquid."

B. Other terms related to "vapor pressure": "vapor pressure of the gasoline stream" / "gasoline vapor pressure(s)"; "vapor pressure of the butane stream" / "butane vapor pressure"; "vapor pressure of the volatility modifying agent stream" / "vapor pressure of the volatility modifier stream" / "agent vapor pressure"; "gasoline volatility measurement"; "butane volatility measurement"

The other disputed vapor pressure-related terms are found in asserted claims of the '302 patent, '629 patent and '686 patent. (D.I. 166, ex. A at 4-7) The use of some of the disputed terms in claim 27 of the '302 patent, claim 1 of the '686 patent, and claim 31 of the '629 patent are exemplary. (*See, e.g.*, D.I. 171 at 15) These claims are reproduced below, with the disputed terms highlighted:

> **27.** A method for blending butane and gasoline using a processor comprising:
> a) receiving a *gasoline volatility measurement* at the processor;
> b) receiving a *butane volatility measurement* at the processor;
> c) receiving a target gasoline volatility value at the processor; and
> d) calculating a butane blend rate from the *gasoline volatility measurement*, the *butane volatility measurement* and the target gasoline volatility value.

('302 patent, col. 15:54-65 (emphasis added))

> **1.** A method for in-line blending of gasoline and a volatility modifying agent comprising:
> a) providing a continuously flowing gasoline stream that comprises:
> i) a plurality of batches of different gasoline types;
> ii) a gasoline flow rate that varies over time; and
> iii) a plurality of gasoline vapor pressures;
> b) providing an allowable vapor pressure;
> c) providing a stream of said agent that comprises an *agent vapor pressure*;
> d) periodically determining said *gasoline vapor pressure*;
> e) periodically determining said gasoline flow rate;

f) calculating a blend ratio based upon said *agent vapor pressure*, said *gasoline vapor pressure*, and said allowable vapor pressure; and
g) blending said agent stream and said gasoline stream at a blending unit at said blend ratio to provide a blended gasoline stream having a blended vapor pressure less than or equal to said allowable vapor pressure.

('686 patent, cols. 15:62-16:13 (emphasis added))

31. A computer-implemented method for blending a butane stream and a gasoline stream comprising the steps of:
receiving a first measurement indicating a *vapor pressure of the gasoline stream*;
calculating a blend rate at which the butane stream can be blended with the gasoline stream;
transmitting an instruction to a programmable logic controller for adjusting the butane stream to the calculated blend rate for blending with the gasoline stream and distributing at a rack; and
receiving a second measurement indicating a vapor pressure of the blended gasoline stream and butane stream.

('629 patent, col. 16:8-20 (emphasis added))

The parties' competing proposed constructions for these other terms related to "vapor pressure" are set out in the chart below:

Term	**Plaintiff's Proposed Construction**	**Defendants' Proposed Construction**
"vapor pressure of the gasoline stream" / "gasoline vapor pressure(s)"	Plain and ordinary meaning, or alternatively, "a physical property of the gasoline stream's volatility" / "gasoline's physical property of volatility"	"vapor pressure of the gasoline to be blended"
"vapor pressure of the butane stream" / "butane vapor pressure"	Plain and ordinary meaning, or alternatively, "a physical property of the butane stream's volatility" / "butane's physical property of volatility"	"vapor pressure of the butane to be blended"
"vapor pressure of the volatility modifying agent stream" / "vapor pressure of the volatility modifier	Plain and ordinary meaning, or alternatively, "a physical property of the volatility modifying agent stream's	"vapor pressure of the volatility modifying agent to be blended"

stream" / "agent vapor pressure"	volatility" / "a physical property of the volatility modifier stream's volatility" / "agent's physical property of volatility"	
"gasoline volatility measurement"	Plain and ordinary meaning, or alternatively, "a measurement of gasoline volatility"	"volatility measurement of the gasoline to be blended"
"butane volatility measurement"	Plain and ordinary meaning, or alternatively, "a measurement of butane volatility"	"volatility measurement of the butane to be blended"

(D.I. 176 at 11-12) The crux of the parties' dispute with respect to these terms relates to whether, "every time a 'vapor pressure' or 'volatility' is referenced, the claims require actively sampling and measuring the vapor pressure" or volatility of the individual gasoline and butane streams (as Defendants assert), or not (as Sunoco asserts). (D.I. 191 at 10; *see also* D.I. 188 at 11)

Here, the Court again sides with Sunoco. It does so for a few reasons.

First, looking to the claims themselves, certain of the claims expressly specify how, when, and whether vapor pressure or volatility measurements must be taken. (D.I. 176 at 13-14; D.I. 191 at 10-12; Sunoco's Markman Presentation, Slide 43; Tr. at 150) For example, looking at claim 1 of the '686 patent reproduced above, it recites providing "a continuously flowing gasoline stream that comprises[,]" *inter alia*, "a plurality of gasoline vapor pressures" and "providing a stream of said [volatility modifying] agent that comprises an agent vapor pressure." ('686 patent, cols. 15:62-16:4) The claim then expressly recites "periodically determining said gasoline vapor pressure" but does not contain a limitation requiring that the vapor pressure of the volatility modifying agent be periodically determined. (*Id.*, col. 16:5) The blend ratio is then calculated "based upon said agent vapor pressure, said gasoline vapor pressure, and said

allowable vapor pressure[.]" (*Id.*, col. 16:7-9) Thus, as Sunoco points out, for this claim "[w]hile gasoline vapor pressure must be periodically determined, agent vapor pressure does not[.]" (Sunoco's Markman Presentation, Slide 43; *see also* D.I. 191 at 10) Claims such as this one, then, appear to reflect the inventors' recognition that "a vapor pressure or volatility exists for respective volatile liquids (whether that property be already known or measured)[.]" (D.I. 176 at 14)

An examination of claims 27 and 28 of the '302 patent provides another example of why Defendants' position is problematic. Claim 27, reproduced above, only requires "receiving a gasoline volatility measurement" and "a butane volatility measurement" at the processor; the claim does not specify how, when or whether such measurements are calculated. ('302 patent, col. 15:56-59; *see also* D.I. 191 at 11; Sunoco's Markman Presentation, Slide 45)[7] Yet dependent claim 28 explicitly recites "[t]he method of claim **27** wherein an analyzing instrument determines a) the gasoline volatility measurement and b) the butane volatility measurement." ('302 patent, cols. 15:66-16:2) Thus, while claim 28 expressly tells us that the volatility of the gasoline and butane must be measured (with an analyzing instrument), claim 27 has no such specific limitations regarding the claimed gasoline and butane volatility measurements. And so claim 27 would seem to allow for a known or inherent value to be used for such volatility measurements, for example, instead of requiring that a value be taken as a result of an active sampling and measurement of the respective streams. These claims further reinforce that when

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[7] Defendants assert that "[t]hat the . . . volatility measurements must be . . . 'received' by a processor to calculate a blend ratio indicates that these values are not merely inherent or known values of gasoline and butane, but instead are actual measurements of the gasoline and butane streams identified in the claims." (D.I. 188 at 14) However, it is not clear to the Court why a "method for blending butane and gasoline using a processor" could not require inherent or known volatility values to also be received by the processor.

the inventors wished to specify how, when and whether vapor pressure or volatility must be measured, they expressly did so in the claims.[8]

The specification of the '302 patent also counsels against reading in limitations requiring an actual measurement of the streams to be blended. The specification explains that:

> To calculate the blend ratio one must first have knowledge of the respective vapor pressures of the gasoline and butane streams. Therefore, the vapor pressures of the gasoline and butane streams are *preferably* measured in order to generate the data used in the blending ratio calculation. The measurement can be carried out in a number of ways. Because of the variability in[]vapor pressure of gasoline (due to the varying composition of gasoline delivered through pipelines) and butane (due to the difference in vapor pressure of n-butane and isobutane), the vapor pressure is *preferably measured directly*, by a unit specifically designed to make such measurements from samples of gasoline and butane.

(*Id.*, col. 7:15-26 (emphasis added)) These statements, taken together, first make clear that a person of ordinary skill in the art must have knowledge of the respective vapor pressures of the gasoline and butane streams, and then describe a *preferred embodiment* in which the vapor pressures of the gasoline and butane streams to be blended are directly measured. (D.I. 191 at 13; Tr. at 141-42) But, of course, claims are generally not limited in scope to a preferred embodiment. *See, e.g.*, *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1370 (Fed. Cir. 2003); *see also* (Tr. at 142 (Sunoco's counsel explaining that this portion of the specification demonstrates that "you can carry out a measurement in a number of ways, nothing in the specification is

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[8] Claims 14 and 15 of the '302 patent also demonstrate this concept. (*See* D.I. 176 at 13; Sunoco's Markman Presentation, Slide 50) Claim 14 recites determining the blend ratio from "a vapor pressure of the gasoline stream" and "a vapor pressure of the butane stream." ('302 patent, col. 14:18-20) As Sunoco points out, this claim is silent as to how, when, or whether "a vapor pressure" is determined, instead requiring only that "a vapor pressure" be used. (D.I. 176 at 13) Claim 15, meanwhile, recites how the vapor pressure of the gasoline and butane are determined (i.e., by drawing samples of gasoline and butane, respectively, and "measuring" the vapor pressure of such samples). ('302 patent, col. 14:21-31)

forcing you to limit it to taking an actual measurement right before you[are] blending those streams")). And as Sunoco asserts, the "corollary" to the vapor pressure "preferably [being] measured directly" may be that "if one already knows the gasoline vapor pressure (e.g., from a recent measurement) or whether the butane is 'n-butane' or 'isobutane,' then there is no need to directly measure the vapor pressure prior to blending." (D.I. 191 at 14; *see also* Tr. at 142)

The intrinsic record, then, counsels against adoption of Defendants' proposals for these vapor pressure-related terms. The Court will thus decline to construe these terms, as its rejection of Defendants' proposal appears to resolve the dispute between the parties.

C. "optimizing" and "simplifying"

The term "optimizing" is found in the preamble of claim 18 of the '302 patent, and the term "simplifying" is found in the preamble of claim 23 of the '302 patent. (D.I. 166, ex. A at 8-9) These claims are reproduced below, with the disputed terms highlighted.

> **18.** A method for *optimizing* butane purchase decisions for a petroleum products tank farm comprising:
> a) in an information processing unit, setting a value for the quantity of butane in a tank at time zero;
> b) drawing a butane stream from the tank of butane;
> c) blending the butane stream with gasoline for a first interval of time from time zero until time one;
> d) monitoring the consumption of butane blended with the gasoline during the first interval of time, and transmitting data regarding the consumption during the first interval of time to the information processing unit; and
> e) transforming the consumption data during the first interval of time, and the butane quantity at time zero, to an output of data comprising the butane consumption rate during the first interval of time, and the quantity of butane in the tank at time one.

('302 patent, col. 14:51-67 (emphasis added))

> **23.** A method for *simplifying* record keeping requirements for butane use at a petroleum products tank farm comprising:
> a) drawing a gasoline stream from a tank of gasoline;
> b) drawing a butane stream from a tank of butane;

c) blending the butane stream and the gasoline stream to form a blend;
d) monitoring the volatility of the gasoline stream and the butane stream;
e) monitoring the rate at which the butane stream is blended with the gasoline stream;
f) inputting the monitored volatilities and monitored blend rate to an information processing unit; and
g) generating a report that tabulates the monitored volatilities and monitored blend rate, or a summary thereof.

(*Id.*, col. 15:31-46 (emphasis added))

The parties' competing proposed constructions for "optimizing" and "simplifying" are set out in the chart below:

Term	**Plaintiff's Proposed Construction**	**Defendants' Proposed Construction**
"optimizing"	Not limiting, but if a construction is necessary, then "more accurately forecasting"	Defendants contend that this term is indefinite.
"simplifying"	Not limiting, but if a construction is necessary, then "reducing the complexity of"	Defendants contend that this term is indefinite.

(D.I. 171 at 17) Defendants contend that these terms are indefinite because: (1) the concepts of "optimizing" purchasing decisions and "simplifying" record keeping are subjective; and (2) the patent specification provides no guidance on how to determine whether something has been sufficiently optimized or simplified. (*Id.*) For its part, Sunoco retorts that these preamble terms are not limiting and therefore need not be construed (and that, accordingly, Defendants' indefiniteness argument fails). (D.I. 176 at 16; D.I. 191 at 15) Even if these terms are deemed limiting, however, Sunoco further argues that their plain and ordinary meanings (i.e., "more accurately forecasting" and "reducing the complexity of") should be adopted. (D.I. 191 at 15)

The question of whether language in a preamble constitutes a claim limitation is a question of law. *Rotatable Techs. LLC v. Motorola Mobility LLC*, 567 F. App'x 941, 943 (Fed. Cir. 2014). "While it is true that preamble language is often treated as nonlimiting in nature, it is not unusual for [the United States Court of Appeals for the Federal Circuit] to treat preamble language as limiting[.]" *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 952 (Fed. Cir. 2006). Generally, "a preamble limits the invention if it recites essential structure or steps, or if it is necessary to give life, meaning and vitality to the claim." *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (internal quotation marks and citation omitted); *see also Intellectual Ventures I LLC v. AT & T Mobility LLC*, C.A. No. 12-193-LPS, 2015 WL 1393386, at *24 (D. Del. Mar. 24, 2015). A preamble may also be construed as limiting when: (1) the claim limitations in the body of the claim "rely upon and derive antecedent basis from the preamble[,]" *Eaton Corp. v. Rockwell Int'l Corp.*, 323 F.3d 1332, 1339 (Fed. Cir. 2003), or (2) when the patent applicants clearly relied on the benefits or features recited therein as patentably significant, *Catalina*, 289 F.3d at 808-09. On the other hand, when the claim body recites a structurally complete invention and the preamble language is used merely to state the purpose or intended use of the invention, the preamble is generally not treated as limiting the scope of the claim. *Id.* at 808.[9]

As to this issue, Defendants do not assert that claim limitations in the body of the claim derive antecedent basis from the preamble terms "optimizing" and "simplifying." (*See* D.I. 191

[9] There is no "litmus test" for determining whether preamble language is limiting. *Catalina*, 289 F.3d at 808. Rather, whether such language is limiting is assessed in regard to "the facts of each case in light of the claim as a whole and the invention described in the patent." *Storage Tech. Corp. v. Cisco Sys., Inc.*, 329 F.3d 823, 831 (Fed. Cir. 2003); *Catalina*, 289 F.3d at 808 ("Whether to treat a preamble as a limitation is a determination resolved only on review of the entire . . . patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim.") (internal quotation marks, brackets and citation omitted).

at 15) Nor do Defendants argue that the patent applicants relied on these terms as patentably significant during prosecution of the '302 patent. (*Id.*) Instead, Defendants' sole argument as to why these preamble terms should be deemed limiting is that they are "essential to understand the claim terms and are 'necessary to give life, meaning, and vitality to the claims.'" (D.I. 171 at 18 (citing *Cadence Pharm., Inc. v. Paddock Labs. Inc.*, 886 F. Supp. 2d 445, 460-61 (D. Del. 2012)); D.I. 188 at 18; *see also* Tr. at 160) To that end, Defendants assert that the limitations in the bodies of claims 18 and 23 set forth ways to measure butane consumption over time and record and generate a report of volatility during a blend, respectively, and that the preamble terms explain the purposes for doing so—to optimize butane purchase decisions and to simplify record keeping requirements, including those imposed by the Environmental Protection Agency. (D.I. 171 at 18; D.I. 188 at 18 ("[O]nly after reading the preambles does it become clear what the claims are directed to."))

The Court is not persuaded that the preamble terms are necessary to give life and meaning to these claims. Defendants do not explain how or where the patentee made it clear that the concepts of "optimizing butane purchase decisions" or "simplifying record keeping requirements" was so essential to the claimed inventions that excluding them from the claims' requirements would amount to losing the "essence of the invention[.]" *Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp.*, 320 F.3d 1339, 1345 (Fed. Cir. 2003). Instead, the preambles of claims 18 and 23 appear to simply "stat[e] a purpose or intended use and employ[] the standard pattern of such language: the words 'a method for a purpose or intended use comprising,' followed by the body of the claim, in which the claim limitations describing the invention are recited." *TomTom, Inc. v. Adolph*, 790 F.3d 1315, 1324 (Fed. Cir. 2015). Here, the bodies of the claims recite structurally complete methods; the preambles simply provide context,

indicating a use that one could put those fully-articulated, linguistically-complete methods to. (D.I. 191 at 17; Tr. at 163-64)

For example, the body of claim 18 recites a method for blending butane in which one is monitoring the consumption of butane blended, transmitting that data to an information processing unit and transforming that data to an output of data. That you could utilize this output to optimize butane purchase decisions merely states an intended use of the invention. (Tr. at 163-64) Likewise, the body of claim 23 recites a method of blending butane and gasoline, monitoring the volatility and rate at which the butane is blended into the gasoline, inputting this data into an information processing unit and generating a report summarizing this data. (*Id.* at 165) That such a method could simplify record keeping requirements for butane use at a tank farm merely recites an intended use for this method.[10]

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[10] Defendants compare the circumstances here to those in cases like *Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp.*, 320 F.3d 1339, 1345 (Fed. Cir. 2003) and *Griffin v. Bertina*, 285 F.3d 1029 (Fed. Cir. 2002), where the Federal Circuit found the preamble terms at issue to be limiting. (D.I. 188 at 17-18) The circumstances of these cases are distinguishable, however.

In *Boehringer*, the claim at issue recited a "method of growing and isolating swine infertility and respiratory syndrome virus" which comprised "inoculating the virus on a full or partial sheet of simian cells in the presence of serum in a suitable grown medium and incubating the inoculated cell sheet at about 34 C. to 37 C. until CPE is observed." *Boehringer*, 320 F.3d at 1344-45. In finding the preamble to be limiting, the Federal Circuit explained that "growing" and "isolating" were not "merely circumstances in which the method may be useful" but instead were the "*raison d'être* of the claimed method itself." *Id.* at 1345 (emphasis in original). In other words, without the preamble, the process recited in the body of the claim conveyed no "fathomable utility" and suggested merely an "academic exercise." *Id.*; (*see also* Tr. at 166 (Sunoco's counsel noting that in *Boehringer*, "you actually have to grow and isolate this virus"—without the preamble language, "you just really are left not knowing what the essence of the invention is. Why are you inoculating the virus on a full or a partial sheet, why do you incubate a cell sheet at about 35 degrees Celsius")) Here, however, while the preambles provide context for how to use the methods recited in the claim bodies, they do not constitute the "essence" of the invention in this way. Put differently, even without the preamble language, the claims themselves convey processes that have understandable utility. It is not hard to see how, even in the absence of the guidance provided by the preamble, the utilization of the claimed

In light of the Court's conclusion that these preamble terms are not limiting, no further construction (or consideration of Defendants' indefiniteness argument) is required. *See Alcohol Monitoring Sys., Inc. v. Actsoft, Inc.*, 414 F. App'x 294, 298 (Fed. Cir. 2011) (finding that the preamble of a method claim was not limiting where it merely gave a descriptive name to the set of limitations in the body of the claim that set forth a structurally complete invention, and therefore did not further limit the scope of the claims); *Warner Chilcott Co. v. Mylan Inc.*, Civil Action No. 11-3262 (JAP), 2013 WL 1410005, at *4 (D.N.J. Apr. 8, 2013) (finding that the method claim's preamble did not constitute a limitation (and thus did not require construction) where the claim body itself described a complete invention and where the prosecution history did not demonstrate clear reliance on the preamble as rendering the invention patentably significant).

III. CONCLUSION

For the foregoing reasons, the Court recommends that the District Court adopt the following constructions:

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methods goes beyond an "academic exercise"; the claim bodies clearly articulate what the point of these claimed inventions are (blending butane and gasoline in certain ways, monitoring aspects of that process and generating data regarding that process so that it can be evaluated).

In *Griffin*, the claim at issue recited a "method for diagnosing an increased risk for thrombosis or a genetic defect causing thrombosis" comprising steps of obtaining "from a test subject" test nucleic acid and "assaying for the presence of a point mutation[,]" the presence of which "indicates an increased risk for thrombosis or a genetic defect causing thrombosis." *Griffin*, 285 F.3d at 1031. In concluding that the preamble was limiting, the Federal Circuit observed that the aspect of the invention recited in the preamble (diagnosing an increased risk for thrombosis or a genetic defect causing thrombosis) "is again stated in the body of the count" and that "[d]iagnosis is thus the essence of this invention[.]" *Id.* at 1033. Furthermore, the *Griffin* Court explained that in the absence of the preamble's stated objective to diagnose thrombosis, certain terms in the body of the claim such as "test subject" and "assaying for the presence of point mutation" constituted "empty language" with no purpose. *Id.* Here, the "optimizing" and "simplifying" terms are not repeated in the body of the claim. And Defendants have pointed to no language in the claims that would amount to "empty language" were the preamble not limiting.

1. "vapor pressure " should be construed to mean "a pressure exerted by the vapor of a liquid when in equilibrium with the liquid"

2. No constructions are necessary for the other terms related to "vapor pressure." These terms should be given their plain and ordinary meaning.

3. The preamble terms "optimizing" and "simplifying" are not limiting and therefore no construction is required.

This Report and Recommendation is filed pursuant to 28 U.S.C. § 636(b)(1)(B), Fed. R. Civ. P. 72(b)(1), and D. Del. LR 72.1. The parties may serve and file specific written objections within fourteen (14) days after being served with a copy of this Report and Recommendation. Fed. R. Civ. P. 72(b)(2). The failure of a party to object to legal conclusions may result in the loss of the right to de novo review in the district court. *See Henderson v. Carlson*, 812 F.2d 874, 878-79 (3d Cir. 1987); *Sincavage v. Barnhart*, 171 F. App'x 924, 925 n.1 (3d Cir. 2006).

The parties are directed to the Court's Standing Order for Objections Filed Under Fed. R. Civ. P. 72, dated October 9, 2013, a copy of which is available on the District Court's website, located at http://www.ded.uscourts.gov.

Dated: August 28, 2019

Christopher J. Burke
UNITED STATES MAGISTRATE JUDGE