

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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PERMIAN GLOBAL INC., AND  
MANTICORE FUELS, LLC  
Petitioners,

v.

FUEL AUTOMATION STATION, LLC,  
Patent Owner.

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Case IPR2023-01237

Patent No. 9,586,805

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**PATENT OWNER RESPONSE**

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Exhibit	Description
Ex. 2004	Expert Report of John Roberts
Ex. 2005	FAS Virtual Marking page ( <a href="https://fluidautomationstation.com/patents/">https://fluidautomationstation.com/patents/</a> )
Ex. 2006	US Patent 2,603,312
Ex. 2007	US Patent 1,829,173
Ex. 2008	US Patent 3,196,982
Ex. 2009	US Patent 3,430,730
Ex. 2010	US Patent 3,216,527
Ex. 2011	US Patent 2,425,848
Ex. 2012	Transcript of Deposition of Robert Durham
Ex. 2013	ASTM D975 Standard Specification for Diesel Fuel Oils
Ex. 2014	Intentionally Omitted
Ex. 2015	AFLAS TM Reg Serial 73310396
Ex. 2016	Rubber Technology, “TFE/P (Aflas®)/FEPM rubber quality” ( <a href="https://web.archive.org/web/20160404102358/http://rubbertechnology.info:80/en/-rubber-compounds/tfep-aflasr--fepm-rubber-quality/">https://web.archive.org/web/20160404102358/http://rubbertechnology.info:80/en/-rubber-compounds/tfep-aflasr--fepm-rubber-quality/</a> )
Ex. 2017	AFLAS technical brochure ( <a href="http://web.archive.org/web/20161221181920/http://agcchem.com/component/jdownloads/finish/9-aflas-fluoroelastomers/7-aflas-fluoroelastomers-technical-brochure?Itemid=0">http://web.archive.org/web/20161221181920/http://agcchem.com/component/jdownloads/finish/9-aflas-fluoroelastomers/7-aflas-fluoroelastomers-technical-brochure?Itemid=0</a> )
Ex. 2018	Intentionally Omitted
Ex. 2019	Brent Oil/Fuel Hose 3106 ( <a href="http://web.archive.org/web/20160713193942/http://www.desihose.com/viewproduct.aspx?pid=192">http://web.archive.org/web/20160713193942/http://www.desihose.com/viewproduct.aspx?pid=192</a> )
Ex. 2020	Atlas Oil’s Rick Shock Named “Industry Leader” At Texas Oil and Gas Awards

Ex. 2021	<i>FAS v. Comanche Gas Solutions</i> Complaint
Ex. 2022	<i>FAS v. Permian Global, et al.</i> Complaint
Ex. 2023	Ortoleva Declaration
Ex. 2024	Rodger's CV
Ex. 2025	Intelligencer article (digital print The Intelligencer, January 31, 2020)
Ex. 2026	Intentionally Omitted
Ex. 2027	Intentionally Omitted
Ex. 2028	Waterman, "Better Safe Than Sorry"
Ex. 2029	Information Disclosure Statement

## **I. INTRODUCTION**

### **A. Mobile fuel delivery**

Hydraulic fracturing, colloquially known as “fracking” or a “frac,” is an orchestration of machinery, horsepower, and manpower. It is a loud, dusty, and busy “factory” that carries out the stimulation operation of a well. On a conventional modern frac site there is a barricade of proppant, water and chemical storage and transport equipment (trailers, cars, ponds and bins), as well as frac blenders to process the powders, chemicals, gels, and liquids pumped downhole. A mobile data acquisition and control center or “data van” serves as the brains of the operation where engineers and supervisors monitor and direct a job as it is being pumped. At the center of the operation, there are tractor trailer-mounted frac pumps parked within inches of each other. The frac pumps provide the brute force that pumps the fracturing fluid (generally a blend of water and sand) downhole at extremely high pressures to fracture the formation. Over 50,000 frac horsepower may be required for modern completions. A maze of flow lines snakes between the pumps and trucks, culminating at the well-head (or multiple well-heads on some sites). The picture below depicts a common frac site plan, though the plan can vary from site to site. Ex. 2004 at ¶50.



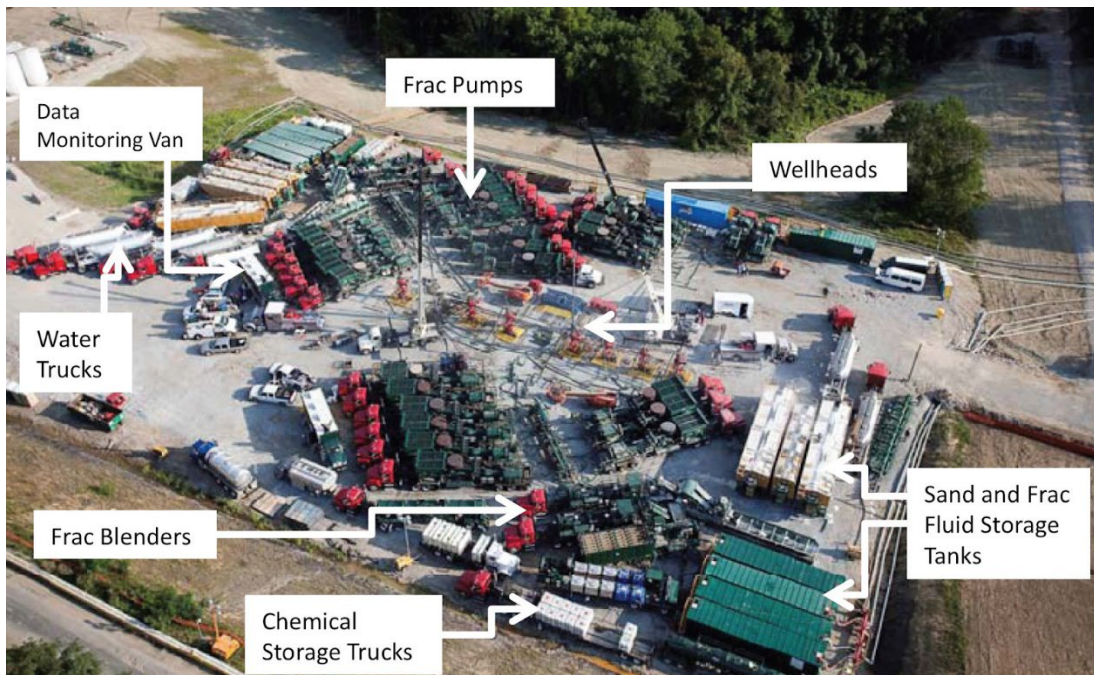


Image Credit: Kansas Geological Survey

The frac pumps are operated 24 hours a day and seven days a week, usually for days or weeks at a time. Ex. 2004 at ¶51. If a frac pump runs out of fuel, it must be taken offline, reducing the total horsepower that is available. If multiple pumps go down, the frac job may have to be shut down, which is costly and inefficient for the well operator. FAS2004 at ¶54-55.

In order to keep the frac pumps fueled and running continuously, a mobile fuel delivery station is used to automatically refuel each frac pump fuel tank when it is low on fuel, which is also known as “hot refueling” because the pumps remain running during the refueling. The *mobile* aspect of the station refers to transportability of the station from wellsite-to-wellsite with each new fracking job.

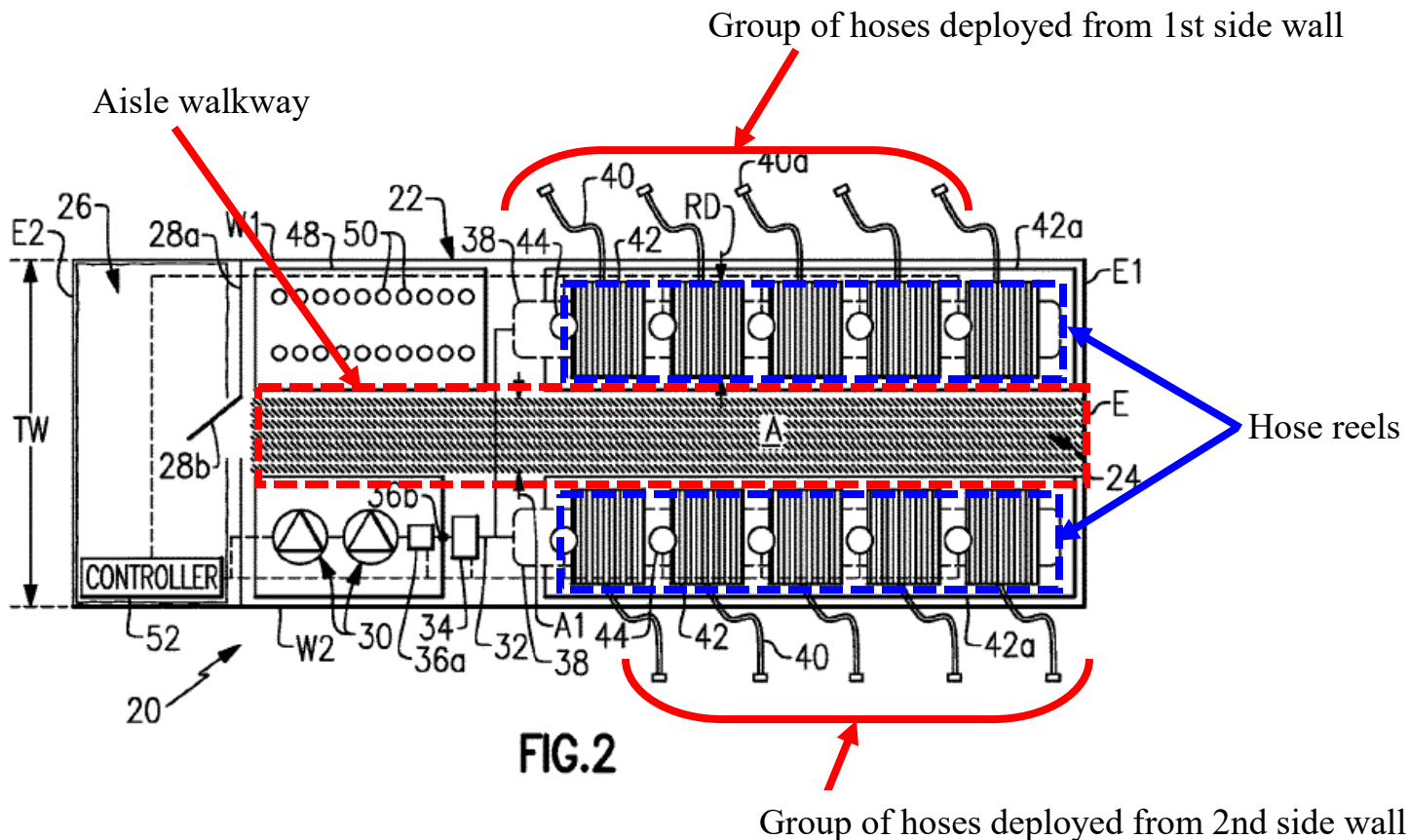
PO has designated its commercial mobile fuel delivery station as a “FAS unit” or simply “FAS,” where “FAS” is an acronym for Fuel Automation Station, which is covered under the ‘805 Patent. Ex. 2005.

FAS’s patented mobile fuel delivery station has fuel hoses that are deployed to each of the fuel tanks of the frac pumps along with level sensors that measure the fuel levels in the tanks. When the level sensors detect that one of the fuel tanks is low on fuel, a controller causes a valve associated with the hose to that fuel tank to open. Fuel is provided from an external fuel source, such as a tanker truck, into the mobile fuel delivery station, where a pump moves the fuel to a manifold and through the valve to the hose to fill the fuel tank. Once the level sensor detects that the tank for that hose has reached a threshold fill level, the controller closes the valve to cease filling the fuel tank. Each time one of the fuel tanks is low on fuel this process is repeated in order to replenish the fuel tanks with fuel, and thus enable the frac pumps to run continuously. Ex. 1001.

#### **B. The invention of the ‘805 Patent**

The ‘805 Patent is directed to a unique configuration of a mobile fuel delivery station (see annotated Fig. 2 below). For instance, independent claim 1 of the ‘805 Patent is directed to a distribution station that has hose reels arranged on opposed sides in a mobile trailer with an aisle walkway down the middle of the trailer, and independent claim 17 is directed to a distribution station that has a first group of

hoses that is deployable from one side wall of the trailer and a second group of hoses that is deployable from another, opposed side wall of the trailer.



The hoses in a mobile fuel delivery station are “multi-serve,” meaning rather than being used once and then stowed away, the hoses are secured to the fuel tanks for multiple cycles of refueling for the duration of the frac job over days or weeks. Workers generally work in 12hr shifts to monitor the refueling, maintain the station, and generally see to it that the station runs smoothly and safely. Ex. 2004 at ¶62. FAS recognized that over the duration of the frac job, the operation would benefit

from the station also serving as a workplace and not just a system to deliver fuel. The challenge, however, was that there was a substantial amount of equipment (e.g., pumps, hoses, hose reels, manifolds, valves, etc.) that would need to be functionally arranged in the station, but space in the station was limited, making it difficult to achieve an arrangement that makes good use of the space and also serves as an effective and safe workplace for the workers. On the other hand, poor planning of an arrangement could result in non-ideal operation or, worse, unsafe work conditions. The aisle walkway and hose deployment through opposed side walls of the trailer as in the '805 Patent were innovations that enabled the mobile fuel delivery station to not just be a system that provides fuel, but to also be a safe and effective workplace that permits workers to carry equipment into and out of the trailer and, if necessary, perform light maintenance. As Patent Owner ("PO") demonstrates herein, the patent examiner of U.S. 9,586,805 got it right in granting the '805 Patent. The FAS mobile fuel delivery station had an innovative configuration and was deserving of patent protection.

### **C. Overview of the prior art.**

The Petition relies on various combinations of prior art references across eight grounds in its attempt to establish that challenged claims 1-22 of the '805 Patent are unpatentable. Petition at 5. The primary prior art reference relied upon in all of the grounds is Van Vliet, which was considered by the patent examiner in prosecution.

Ex. 1001 at 2, “References Cited” listing 9,346,662 to Van Vliet et al. Van Vliet, however, is a flawed reference. It not only lacks the claimed aisle walkway and groups of hoses deployable from opposed sides of the trailer, but it also lacks any guidance that would prompt a person of ordinary skill in the art (hereafter “POSITA”) to modify Van Vliet to include such a configuration. At most, it teaches what would have already been plainly evident – that the equipment in the trailer can be configured in an arrangement. Beyond that, Van Vliet provides no insight that suggests or would have reasonably lead to the claimed aisle walkway and groups of hoses deployable from opposed sides of the trailer. Indeed, there is no dispute in this matter that Van Vliet’s Figure 1 is not meant to show any specific equipment arrangement, as Petitioner’s expert agrees that Fig. 1 of Van Vliet is a schematic, high-level representation that is not intended to depict physical appearance or form.

In fact, Petitioner has not cited any prior art that teaches or suggests an aisle walkway in a fuel delivery station, nor prior art that definitively has groups of hoses deployable from opposed sides of a trailer. For instance, Petitioner relies on Cable for an aisle walkway, but a POSITA would have understood that Cable contains different equipment than Van Vliet and has a configuration that is predicated on concerns with a roadside service vehicle, not a mobile fuel delivery station. Petitioner also relies on AFD for allegedly disclosing groups of hoses deployable from opposed sides of the trailer, but AFD does not conclusively have this feature,

as it is not described and is based on a dubious interpretation from a cropped photograph.

With respect to dependent claims 4, 11, 12, and 20 of the '805 Patent that recite reels and a reel diameter that is the basis of the aisle configuration, Petitioner relies on Coxreels. However, by straightforward evaluation of the manufacturer information, a POSITA would have found the Coxreels reel to be unsuited and unsafe for a mobile fuel delivery station. The further citation of Lowrie in other grounds does not cure any of the above deficiencies.

Accordingly, PO respectfully submits that Petitioner has failed to meet its burden to prove by preponderance of the evidence that any claim of the '805 Patent is unpatentable.

## **II. LEVEL OF ORDINARY SKILL IN THE ART**

For purposes of this proceeding only, PO does not dispute Petitioner's definition of the level of ordinary skill in the art. Petition at 16-17. PO's expert, Dr. Rodgers, is qualified to provide opinions concerning what a POSITA would have known and understood as of Oct. 11, 2016. As reflected in his qualifications, he is more than qualified as a POSITA at all relevant times under the definition. Ex. 2004 at ¶¶66-70.

### III. CLAIM CONSTRUCTION

The Board applies the same claim construction standard used in district court actions under 35 U.S.C. § 282(b), namely that articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b) (2021). In applying that standard, claim terms generally are given their ordinary and customary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips*, 415 F.3d at 1312–13. “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17).

For purposes of this proceeding only, PO submits that no constructions are necessary in order to resolve the issues at hand and that the claim terms be given their ordinary and customary meanings. Insofar as Petitioner offers a construction, or the PTAB finds that a construction is necessary in order to resolve the disputes, PO reserves the right to further address any claim construction issues.

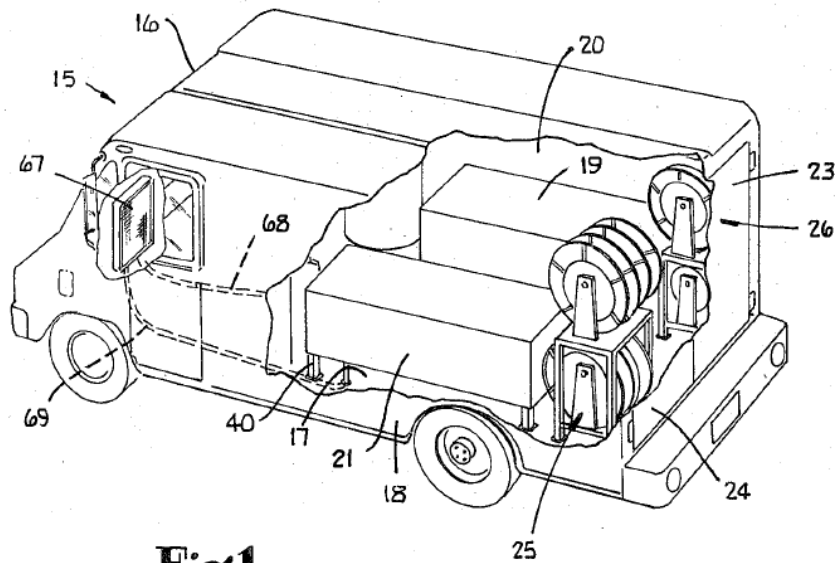
#### **IV. GROUNDS 1, 3, AND 4: THE CHALLENGED CLAIMS ARE NOT OBVIOUS OVER VAN VLIET IN VIEW OF CABLE**

The '805 Patent contains two representative independent claims, i.e., claims 1 and 17. Ex. 1001. As Patent Owner noted in its Preliminary Response, several of the grounds rely on other grounds and are thus interdependent. POPR at 16.

##### **A. A POSITA would not have looked to Cable to modify Van Vliet.**

A POSITA would have understood that the equipment in Cable's truck is configured for fast service in a roadside environment. Cable's truck is a drivable road vehicle. Fig. 1 below; Ex. 1005, col. 2, ll. 50 ("driver compartment") that services other road vehicles likely on or near a road or shoulder of the road. Ex. 2004 at ¶83, 97. A POSITA would have understood this from Cable's explicit disclosure of servicing vehicles (EX. 1005, col. 1, ll. 62-65) and the mentioning in Cable of six prior art patents in the background section that all pertain to servicing automobiles or motor vehicles. Ex. 2004 at ¶84; Ex. 2006, col. 1, ll. 6; Ex. 2007, col. 1, ll. 5; Ex. 2008, col. 1, ll.55-56; Ex. 2009, col. 1, ll. 29]; Ex. 2010, col. 1, ll. 19-21]; Ex. 2011, col. 1, ll. 10.





**Fig.1.**

A POSITA also would have appreciated that there are several reasons that the reels and hoses of Cable are situated at the rear of the truck. First, all of the hoses are deployable from the rear of the truck. A POSITA would have understood that such a configuration with the hoses deploying from the rear would have allowed the truck to be backed up to another vehicle that is to be serviced and that this would thereby avoid a need to pull-up alongside the vehicle being serviced, which could be dangerous in a roadside environment where automobiles are typically used. Ex. 2004 at ¶99. Second, a POSITA would have understood that having all of the hoses deployable from the rear of the truck would have allowed the driver-operator to be at the rear of the truck, out of the way of any traffic passing alongside the truck while in a roadside environment. Ex. 2004 at ¶100. Third, a POSITA would have understood that the aisleway of Cable would have allowed a driver-operator to go

from the driver compartment to the rear of the truck without having to get out of the truck into passing traffic. Taken together, a POSITA would have understood that the configuration of Cable's truck is predicated on its use and function for roadside service. Ex. 2004 at ¶101.

Additionally, Cable is configured to quickly and easily provide lubricant to a vehicle being serviced. Ex. 2004 at ¶102. Because the hoses deploy from the rear of Cable's truck, an operator would back the truck up the vehicle being serviced, extend a hose from the reel through the rear of the truck to reach the vehicle, provide the lubricant through the hose to the vehicle (and/or collect lubricant from the vehicle), and then wind or wrap the hose back onto the reel. A POSITA would have understood that having all of the reels and hoses in Cable at the rear of the truck allows the operator to quickly access and use each of the hoses, without having to move around to other locations of the truck. Ex. 2004 at ¶103. A POSITA would have further understood that having the hoses all deploy from the rear of the truck allows the operator to quickly service the vehicle, which would be desirable in order to minimize the amount of time that the vehicle being serviced is off-line so that the vehicle can be put back into use (and the truck can move on to a next vehicle to be serviced). Ex. 2004 at ¶104. For these reasons, a POSITA would have understood Cable's configuration to be predicated upon roadside safety and rapid servicing.

In contrast, although a mobile automated fueling station as in Van Vliet would be transported on roads from site to site, the system of Van Vliet is not a drivable road vehicle and it is not used to service road vehicles in a roadside environment. The system of Van Vliet, therefore, does not share the same safety concerns of a roadside environment as in Cable. Ex. 2004 at ¶106.

Van Vliet is also not concerned with rapid servicing. In fact, the hoses are *secured* to the fuel tanks by fuel caps in order to reduce the chances of spilling fuel during refueling, indicating that rapid service is not the goal. Ex. 2004 at ¶107. In a fracking job, which is the environment of use of Van Vliet's system, the hoses would be secured to the fuel tanks during "rigging up" of the mobile automated refueling station and remain secured to the fuel tanks until the end of the job, usually several days or weeks later when the hoses are removed during "rigging down." Ex. 2004 at ¶108. Thus, unlike in Cable, there would have been no immediate benefit or need in Van Vliet to quickly deploy, use, and collect hoses. In fact, *quick* is the opposite of what a POSITA would have desired in a fracking environment where Van Vliet is used. The hoses are deployed for days or weeks at a time and must be carefully and safely routed around other equipment at the well site to reach the fuel tanks. Ex. 2004 at ¶109. When the job is completed, hundreds of feet of multiple hoses are carefully collected under the supervision of the operators to avoid "catching" on

other equipment and damaging the hoses. Safe hose deployment and damage avoidance are the chief considerations, not speed. Ex. 2004 at ¶110.

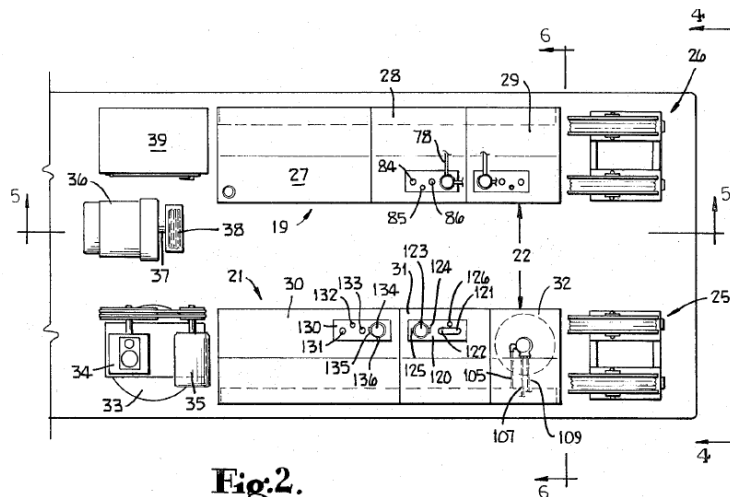
The system of Van Vliet is not a drivable road vehicle like Cable's truck and does not share Cable's desire for rapid servicing. As a result, even though Van Vliet and Cable both have reels and hoses, a POSITA would have understood that they are sufficiently different such that a mere presence of reels and hoses in both would not have motivated their combination. Furthermore, to the extent that there is *design choice* as Petitioner contends (Petition at 34-35), since Cable's configuration is predicated on a drivable truck for rapid servicing in a roadside environment, a POSITA would have been discouraged from looking to Cable for a physical arrangement in Van Vliet, which is not a drivable vehicle and is not concerned with rapid servicing in a roadside environment. Ex. 2004 at ¶111.

**B. Cable is not informative of a practical arrangement for Van Vliet.**

There is different equipment in Cable than there is in Van Vliet. For instance, Cable includes a storage cabinet 39, a generator 36, an air compressor 34, an air tank 33, an electric motor 35, a water/anti-freeze tank 27, motor oil tanks 28/29, a waste oil tank 30, a transmission oil tank 31, and a lubrication storage cabinet 32. None of these pieces of equipment of Cable are found in Van Vliet. Van Vliet also includes equipment that is not found in Cable, such as fuel sources 18/20, fuel pumps 32/34, manifolds 36/38, dry connections 60, and a control station 56. Ex. 2004 at ¶113-115.

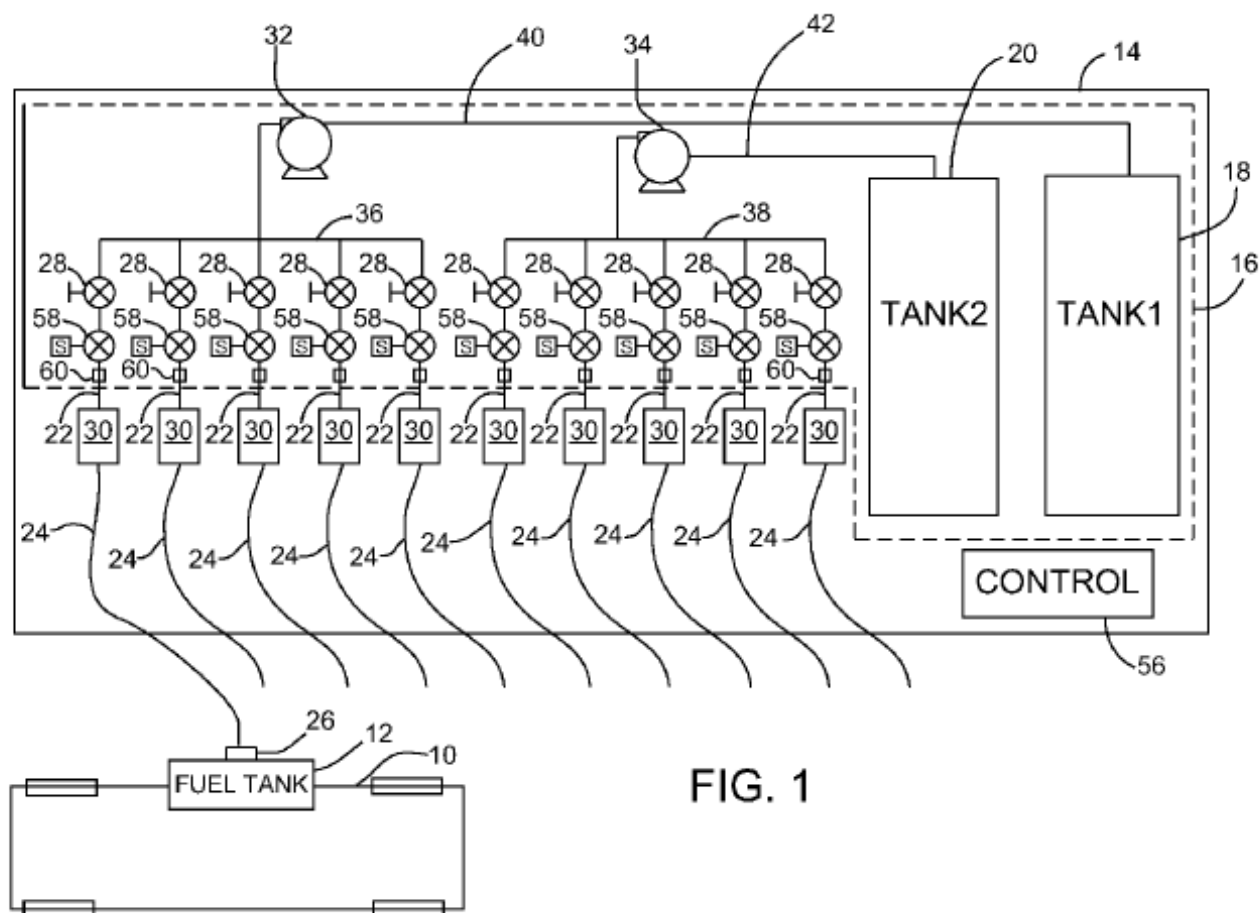
A POSITA would have understood that because there is different equipment between Cable and Van Vliet, Cable's arrangement would not represent a viable option for arranging Van Vliet's equipment (for reference, Fig. 2 of Cable and Fig. 1 of Van Vliet copied below). Ex. 2004 at ¶116. In fact, the equipment in Van Vliet cannot be arranged according to Cable's arrangement because Van Vliet has different equipment that would differ in size and shape from Cable's. Therefore, a POSITA would not have expected the arrangement of equipment in Cable to improve Van Vliet in the same way, i.e., the combination would not have yielded predictable results. Ex. 2004 at ¶117.

Additionally, a POSITA would have further understood Cable's arrangement to be detrimental to Van Vliet. For instance, Dr. Durham states that reels deployed on opposing sides of an aisle walkway adjacent to the sidewalls in Van Vliet would make Van Vliet's system more easily traversable for maintenance and repairs. Petition at 34; EX1003 at ¶172. However, such an arrangement would more likely impede access to the reels for maintenance and repairs, because only portions of the reels that face the aisle would be accessible and the other sides of the reels would back to a wall and thus be inaccessible. Ex. 2004 at ¶118-119.



**Fig.2.**

Cable Fig. 2



**FIG. 1**

Van Vliet Fig. 1

Moreover, counter to a POSITA's desire for safety, Petitioner's proposed arrangement of reels deployed on opposing sides of an aisle walkway would not be likely to make Van Vliet's system more traversable. The Coxreels 1125 Series reel that Dr. Durham contends would be used in refueling has a width of 41.5 inches. Ex. 2004 at ¶120-121. Given the 8 ft. width (96 inches) of Van Vliet's container, two reels across from each other on opposed sidewalls, oriented as in Cable, would take up at least 83 inches (41.5 x 2) of the trailer width, leaving only 13 inches for an "aisle," which by Dr. Durham's own admission would not meet the OSHA safety requirement of being at least 28 inches. Ex. 2004 at ¶122. Not only would Petitioner's arrangement be unsafe and violate OSHA standards, but a 13 inch width would not be an *aisle walkway* since it would be difficult or impossible to traverse. Ex. 2004 at ¶122. Four Coxreels reels with two on each side across from each other on opposed sidewalls, oriented as in Cable, would not even fit in Van Vliet's container, as four reels would require 166 inches of space, which well exceeds Van Vliet's 96 inch wide container. Ex. 2004 at ¶125. Additionally, the 13 inches does not even account for spacing that would be needed between the reels for the hand crank or reel motor. Thus, 13 inches is the maximum amount of space that would be available for the "aisle," but providing spacing between the reels would take up a portion of the 13 inches. Therefore, factoring in this practical consideration, the "aisle" is would likely be less than 13 inches. Ex. 2004 at ¶123.

Furthermore, arranging the reels of Van Vliet as in Cable would be likely to put undue wear and stress on the hoses and reels. The reels of Cable are oriented such that the axes of the spindles about which the reels rotate are transverse (i.e., perpendicular) to the length of the aisle between the reels in Cable's truck. Ex. 1003, Figs. 2 and 4; Ex. 2012 at 117-118. Arranging the reels of Van Vliet according to Cable, with the axes of the spindles transverse to the length of an aisle down the middle, means that the reels of Van Vliet would all face toward the rear of Van Vliet's container (to the right or left end of the container in Fig. 1). Therefore, in order to be deployed out of the sidewalls in Van Vliet, each hose would need to turn approximately 90° from its reel. This would cause the hose to come into the reel at a steep angle, which would be likely to i) cause the hose to rub/wear on the edge of the spindle, ii) interfere with the winding of the hose, iii) increase stress on the hose from being pulled around a 90° bend, and/or iv) increase winding resistance and stress on the reel. Ex. 2004 at ¶127. A POSITA would have desired the hose to come straight into and out of the reel. As a result, a POSITA would not have had an expectation of success for employing the reel arrangement of Cable in Van Vliet because Cable's arrangement is impractical and dangerous for Van Vliet.

There is also a gap in Petitioner's analysis. Petitioner asserts that "a POSITA would have recognized the benefits *Cable's* arrangement so that reel [sic] equipment on one side of the well (e.g., the passenger's side of the vehicle) are fed from reels



on the same side of the vehicle, while equipment on the other side of the well is fed from reels on the opposite side of the vehicle.” Petition at 23.

However, neither Van Vliet nor Cable teach a configuration in which equipment on one side of the vehicle is fed from reels on one side of the vehicle, while equipment on the other side of the vehicle is fed from reels on the opposite side of the vehicle. It is Petitioner’s burden to explain how a challenged claim is construed and how the prior art teaches that claim. *World Bottling Cap, LLC v. Crown Packaging Tech., Inc.*, Case IPR2015-00296, slip op. at 5 (PTAB May 27, 2015) (Paper 8). Petitioner has not met its burden.

In Cable, all of the reels are arranged to feed the hoses out of a single side, the rear side of the truck. Ex. 1005, Figs. 1, 2, and 4. In Van Vliet, the hoses, at least schematically, are all on one side of the trailer. Ex. 1004, Fig. 1. Petitioner does not explain how it makes the jump from Van Vliet and Cable to a configuration in which equipment on one side of the vehicle is fed from reels on one side of the vehicle, while equipment on the other side of the vehicle is fed from reels on the opposite side of the vehicle. Such features are not present in either of Van Vliet or Cable.

Insofar as Petitioner relies on assertions made with regard to claim 17[h] that a POSITA would have understood Van Vliet to describe first and second groups of hoses deployable through, respectively, first and second opposed side walls, Petitioner’s reliance on Van Vliet is misplaced. Petition at 47. Ex. 2004 at ¶129.

Petitioner points to a quote from [0024] of Van Vliet.<sup>1</sup> However, for several reasons, a POSITA would not understand this quote to mean what Petitioner and its expert contend -- that Van Vliet discloses an embodiment in which there are first and second groups of hoses deployable respectively through first and second opposed side walls. Ex. 2004 at ¶130-131.

First, Petitioner's contention is inconsistent with the quote itself. The quote explicitly states that "The hoses 24 are run out to equipment 10 through an opening in *the trailer wall*" (emphasis provided). Notably, the term "the trailer wall" is singular, not plural. Yet, contrary to the singular phrase "the trailer wall," Petitioner contends that the quote would somehow be understood to mean that hoses are deployable through opposed side *walls*. Ex. 2004 at ¶132. For this reason, Petitioner's interpretation of the quote is misplaced and does not support a conclusion that Van Vliet describes first and second groups of hoses that are deployable, respectively, through two opposed side walls.

Nor has Petitioner shown that either of the phrases "arrangement of the well" or "one manifold 36 may supply fluid to equipment 10 lined up on one side of a well,

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<sup>1</sup> "The hoses 24 are run out to equipment 10 through an opening in the trailer wall in whatever arrangement the well operator has requested that the fracturing equipment be placed around the well. For example, one manifold 36 may supply fluid to equipment 10 lined up on one side of a well, while another manifold 38 may supply fluid to equipment 10 lined up on the other side."

while another manifold 38 may supply fluid to equipment 10 lined up on the other side” would inherently require that Van Vliet has first and second groups of hoses that are deployable, respectively, through two opposed side walls. For instance, the phrases “arrangement of the well” and “one manifold 36 may supply fluid to equipment 10 lined up on one side of a well, while another manifold 38 may supply fluid to equipment 10 lined up on the other side” do not mention hoses and are indeterminate as to the location where the hoses are deployed from the trailer. Furthermore, no matter where the well equipment is located with respect to the trailer, deploying hoses from two opposed sidewalls would not be necessary or even suggested because the hoses could reach the same destinations if deployed from one sidewall by either routing the hoses underneath the trailer to the other side, routing the hoses around the end of the trailer to the other side, or routing the hoses so that some hoses coming out of the sidewall are routed to the left and other hoses coming out of the sidewall are routed in the opposite direction to the right. Ex. 2004 at ¶133-134. It is undisputed that one could have one manifold to supply fluid to equipment lined up on one side of a well and another manifold supplying fluid to equipment on the other side of the well with all hoses deploying out of one side of the trailer, as Dr. Durham answers in the affirmative when asked, “You could have one manifold supply fluid to equipment lined up on one side of a well and another manifold supplying fluid to equipment on the other side of the well with all hoses coming out

of one side of the trailer?” Ex. 2012 at 94-95. Van Vliet simply does not disclose or suggest first and second groups of hoses that are deployable, respectively, through two opposed side walls. Ex. 2004 at ¶135.

Ground 1 as to claim 17 relies on Ground 2. Petition at 46. For the reasons above, Van Vliet does not disclose or suggest claim 17[h] “a first group of the hoses are deployable from the first trailer side wall and a second group of the hoses are deployable from the second trailer side wall.”

**C. Cable teaches that the walkway is also a storage area.**

Petitioner does not address Cable’s teaching that the walkway is also a storage area. Cable teaches, “a first row of storage tanks mounted to the truck and extending along one side thereof ... a-second row of storage tanks ... extending along the opposite side thereof and being spaced from said first row of tanks with *a storage area and a walkway therebetween*” (emphasis provided). The teaching of the space between the storage tanks as a storage area would discourage a POSITA from looking to Cable to modify Van Vliet. In particular, the Occupational Health and Safety Administration (OSHA) promulgates safety regulations applicable to workplaces. OSHA does not promulgate specific standards for a mobile automated refueling station that is on a well site, but OSHA’s “General Industry and Health Standards” are most applicable. One of these standards dictates “exit routes” in the workplace. A walkway that doubles as a storage area would not be acceptable, as

items stored in the aisle walkway would block the emergency exit route, which is also likely to draw the attention of a site safety supervisor that inspects the equipment before a frac operation starts. Ex. 2004 at ¶¶136-137, 141-142. Petitioner did not address this teaching of Cable, which would discourage a POSITA from modifying Van Vliet according to Cable. . A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

**V. GROUND 2: VAN VLIET DOES NOT DISCLOSE OR RENDER OBVIOUS CLAIMS 17(h).**

For the reasons earlier above, Van Vliet does not disclose or suggest the features of claim 17[h].

Petitioner and its expert alternatively speculate that the features of claim 17[h] would be the "most obvious" arrangement. Petition at 48; Ex. 1003 at ¶233. Petitioner has unmistakably made this assertion based on impermissible hindsight. MPEP §2142 states that impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art. Although any judgment on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning, it cannot include knowledge gleaned only from Applicant's disclosure (*In re McLaughlin*, 443 F.2d 1392, 1395 (CCPA 1971)).

Neither Petitioner nor its expert articulate why the features of claim 17[h] would be the "most obvious" arrangement in view of Van Vliet, especially since the claimed features are missing from the cited prior art. Petitioner jumps right to the conclusion that the *most obvious* arrangement for a POSITA seeking to connect each of *Vliet*'s manifolds to a respective opposite side of a well would be an arrangement in which the trailer *faces* directly toward or away from the well and the hoses extend from each side of the trailer to a corresponding side of the well. Petition at 48. In this "explanation," however, the location of the trailer with respect to the well is arbitrary and it is unclear what it even means when a trailer "faces" toward or away from a reference point. Ex. 2004 at ¶144-149. In other words, Petitioner has selected a trailer location and an undefined direction the trailer "faces" in order to recreate in Van Vliet the features of 17[h]. None of Petitioner's explanation for the allegedly "most obvious" arrangement is based in facts gleaned from the prior art. Rather, it is based on an arbitrary, self-serving analysis that is without factual support. Therefore, due to the lack of teaching of the features of claim 17[h] in the cited art, and the fact that this feature is only present in the '805 Patent, it logically follows that the proposed "most obvious" arrangement has been gleaned from the '805 Patent in an exercise of impermissible hindsight.

**VI. GROUNDS 4, 7, AND 8: A POSITA WOULD NOT MODIFY VAN VLIET WITH COXREELS**

**A. The Coxreels 1125 Series reel is not for fracking or automated fuel delivery.**

Coxreels may have been marketed for the oil industry, but it is not directed in particular to automated fuel delivery, let alone fracking. For instance, Coxreels provides a bullet point list of 14 different “Possible Fields of Application” of the 1125 Series reel. EX1015 at 1. The list does not explicitly include automated fuel delivery. Insofar as Coxreels suggests use of the 1125 Series in the oil industry, a POSITA would understand that the “oil industry” is too broad to be of practical guidance. The “oil industry” covers a wide variety of areas, such as exploration, extraction, refining, and transportation, and each of these areas would have its own sub-categories with unique technological challenges. A POSITA would, therefore, have drawn the reasonable conclusion that the marketing by Coxreels of the 1125 Series reel in the oil industry was not a representation that the reel is suited to every possible application across the entire oil industry, or to automated fuel delivery in particular. FAS2004 at ¶151-153. In fact, each of the 14 fields listed are themselves so enormously broad that it would be virtually impossible for a POSITA to have determined from the list whether the 1125 Series reel would have been suited for a particular field that is not listed. For instance, the listing of “Chemical Fluid Transfer” is unhelpful to determining whether the reel would be suited for automated fuel delivery. All fluids are necessarily “chemicals” and such a broad reference does

not particularly inform a POSITA that the 1125 Series reel is suited for an automated fueling station. Likewise, the other listed categories are so broad that they do not particularly inform a POSITA that the 1125 Series reel is suited for automated fuel delivery. FAS2004 at ¶154-156.

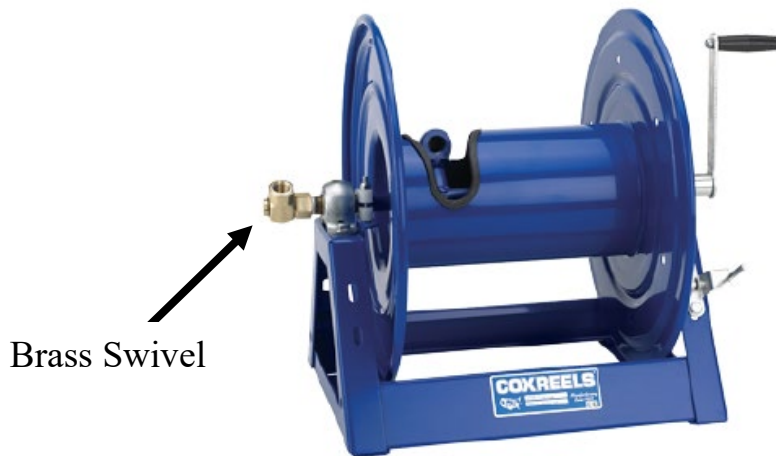
**B. A POSITA would have recognized that the Coxreels 1125 Series reel would have been unsuited for an automated fueling station as in Van Vliet been unsuited for an automated fueling station as in Van Vliet unsuited for an automated fueling station as in Van Vliet.**

In selecting components such as a reel for an automated fueling station, a POSITA would have at least conducted an initial analysis of the reel to determine whether it is likely to work or not. This would have included preliminary evaluation of the information and design details provided by the manufacturer. Ex. 2004 at ¶157. In particular, a POSITA would not have relied solely on manufacturer representations, as the manufacturer would not have been likely to be familiar with the design, requirements, and operation of an automated fueling station. This is especially true where, as here, the manufacturer representations are so broad. Ex. 2004 at ¶158.

From a preliminary evaluation, a POSITA would have found that the Coxreels 1125 Series reel would have been unsuited for an automated fueling station as in Van Vliet. The Coxreels 1125 Series reel uses a solid brass swivel inlet. EX1015 at 1, see also annotated picture below. Copper and copper-containing alloys,



i.e., brass (a copper-zinc alloy), should not be used with fuel. Ex. 2004 at ¶159-160. Copper can promote fuel degradation and can produce mercaptide gels, and zinc can react with water or organic acids in fuel to form gels. These gels can form deposits in downstream equipment that can plug lines, orifices, filter screens, and the like. Ex. 2004 at ¶161. Additionally, metals such as copper and zinc (brass) promote fuel degradation. Fuel degradation can lead to the formation of insoluble gums and particulate materials that can adhere to surfaces, limit fuel flow, or clog small clearances in fuel systems, causing problems such as injector malfunction or seizures. Ex. 2004 at ¶162. Therefore, a POSITA would have understood that the brass swivel would have made the Coxreels 1125 Series reel an unacceptable choice for a mobile fuel delivery station, such as in Van Vliet, because it could have led to formation of gels, insoluble gums, and particulates that could interfere with operation of downstream equipment. Ex. 2004 at ¶163. Accordingly, a POSITA would have found the Coxreels 1125 Series reel to have been an unacceptable choice to use or to even try in a mobile fuel delivery station such as in Van Vliet because of the risk of forming gels, insoluble gums, and particulates that could interfere with operation of downstream equipment. Ex. 2004 at ¶164.



The Coxreels 1125 Series reel also comes in a 1 inch model that has a nickel-plated steel swivel instead of a brass swivel. However, a POSITA would not have found that option to be acceptable either. As indicated in Coxreels, the swivel seals of the 1 inch models have seals made with AFLAS material (Ex. 1015 “AFLAS on 1" models”). AFLAS is a registered trademark of AGC INC. for heat and chemical resistant fluororubber. Ex. 2015. AFLAS was known to have a service temperature range of -5 °C to 200 °C and a glass transition temperature of -3 °C or -13 °C, depending on the exact grade. Ex. 2004 at ¶165-166 . A mobile fuel delivery station may be used in extreme conditions, such as North Dakota in the winter where well site temperatures can fall below -30 °F (-34 °C). A POSITA would have found a reel with an AFLAS seal to have been unacceptable because use in an environment of -30 °F (-34 °C) would have been lower than the minimum service temperature and glass transition temperature of the AFLAS seal, which suggests that the seal would

be likely to fail. Ex. 2004 at ¶167. Accordingly, a POSITA would have found the Coxreels 1125 Series 1 inch model reel to also have been an unacceptable choice to use or to even try in a mobile fuel delivery station such as in Van Vliet. Ex. 2004 at ¶169.

**C. The Coxreels 1125 Series reel would have resulted in an undesirable operating configuration.**

The Coxreels 1125 Series reels were available in 24 different models, which are shown in the table in Coxreels. Ex. 2004 at ¶170. Neither the Petition nor Dr. Durham's declaration appear to identify a particular model, but in his deposition, when discussing the models and hose lengths, Dr. Durham asserts, "I think 700 feet probably would be a good number for a maximum length [of hose] at a fracturing site." Ex. 2012 at 68. There are two models of the 1125 Series reel that have 700 ft capacity, which are models 1125-4-500 and 1125-4-500-C. Ex. 1005 at 1-2. Both of these models are configured for a 700 ft. long, 3/8 in. inner diameter hose (hereafter the "Durham configuration" refers to model 1125-4-500 or 1125-4-500-C with a 700 ft. long, 3/8 in. inner diameter hose). Ex. 2004 at ¶171. The Durham configuration, however, if implemented in Van Vliet would lead to an undesirable operating configuration.

A "small" frac operation may require 7,500 gallons of diesel in a 12-hr period, a "large" frac operation may require 12,000 gallons in a 12-hr period, and a

“superfrac” may require 24,000 gallons or more in a 12 hour period. Ex. 2004 at ¶172-173. The flow rates that would be required to meet such fuel volumes for a mobile fuel delivery station such as Van Vliet can be calculated based on the hose diameter, a pump pressure, and an assumption of a “duty cycle.” Ex. 2004 at ¶174]

A “duty cycle” is the percentage of time of a 12 hour period that the pump is ON and pumping fuel through the hoses at maximum flow rate in order to meet a given fuel demand. For instance, a 90% duty cycle means that the pump is operating to supply the maximum flow rate for 90% of the 12 hour period. In the remaining 10% of the time (i.e., “off-duty time”) there is little or no fuel flow through the hoses, which accounts for start-up and shut-down transients and switching valves between different output hoses. A 90% duty cycle would be extreme because any downtime that causes the off-duty time to exceed 10% would prevent the station from meeting the given fuel demand, and a frac pump would then likely need to be taken offline (at the least). A 90% duty cycle would have represented a highly undesirable operating configuration. Ex. 2004 at ¶175-176.

For a given flow rate, there is also a required pump pressure that would be needed in order to achieve the that flow rate. For safety purposes, pump pressure should be limited to approximately 60 psi. Limiting the pump pressure limits the rate at which fuel, if it spills, would leak out in the event of damage to a hose. Additionally, the number of hoses that are open and providing fuel simultaneously

should also be limited, for safety and practical considerations. Ex. 2004 at ¶177. For instance, the greater the number of hoses that are open simultaneously, the greater the burden on the operator(s) to safely monitor and manage those hoses. As an example, a limit of three simultaneously open hoses means that once three hoses are open and providing fuel, if there is demand for a fourth hose to open and provide fuel, the opening of the valve for the fourth hose would be delayed until one of the first three hoses has completed filling a tank and the valve is closed. A limit of three open hoses would be considered very safe. A limit of five or six hoses would be considered marginally safe, and a limit of seven hoses or more would likely be a safety risk. Some of the safety risk could be mitigated with a greater number of operators - but at the expense of increasing safety risks elsewhere (e.g., more personnel on the well site, more opportunity for human error, etc.). Ex. 2004 at ¶178.

A pressure loss for a desired flow rate through the internal plumbing of the station from the pump, through a fuel filter, a manifold, an elbow fitting, and a hose can also be determined based on a pump outlet pressure limit. Ex. 2004 at ¶179.

For the Durham configuration operating with 3 hoses delivering fuel simultaneously and a comfortable 50% duty cycle, the estimated pressure required to meet the fuel delivery for even a small frac job with 7,500 gallons in 12 hours would be 440 psi. This configuration would pose a higher safety risk because, if there were to be a leak, the higher pump pressure would cause more fuel to be leaked

(than 60 psi) and at that pressure the leak may also spew fuel into the air, adding risk of spraying onto an operator or onto a hot surface that could ignite the fuel. Additionally, the pressure would exceed the maximum pressure rating of Brent Hose 3106 that Dr. Durham indicated in IPR2023-01236 to be “designed for use on engines and fuel lines.” This is clearly not an acceptable operating configuration due to the high pressure, the limited fuel delivery, and the risk of hose burst. Ex. 2004 at ¶180-182.

With increase to seven simultaneously open hoses and a 90% duty cycle, the Durham configuration could achieve delivery of 7,500 gallons in a 12 hr period with a pump pressure under 60 psi. The use of seven simultaneously open hoses at the 90% duty cycle would have been considered a “redline” operating configuration because there would be a safety risk associated with having seven of Van Vliet’s ten hoses being simultaneously open and the use of the extreme 90% duty cycle. There would be no margin for error with this configuration, as a problem with any hose would immediately risk a fuel shortfall and, consequently, a frac pump having to be taken offline. More importantly, even at this “redline” configuration, the fuel volume output could only barely meet the fuel requirement of a small frac job and would, without pressing the limits more, be unable to deliver enough fuel for a large frac or a superfrac. Ex. 2004 at ¶183-184.

In order to deliver 12,000 gal. for a large frac, the pump pressure for the Durham configuration would have to be increased to 85 psi with seven simultaneously open hoses and a 90% duty cycle - still at *redline* operation for number of hoses and duty cycle. The pump pressure of this configuration would also pose a higher safety risk if there were to be a leak, as discussed earlier above. Additionally, the pressure would be approaching the maximum pressure rating of Brent Hose 3106 (discussion above). This too is clearly not an acceptable operating configuration due to the high pressure, extreme duty cycle, and risk of hose burst. Ex. 2004 at ¶185-186.

In order to provide 24,000 gal. of fuel required for a superfrac over 12 hours, the pump pressure for the Durham configuration would have to be increased to 280 psi, with seven simultaneously open hoses and a 90% duty cycle. This would be an extreme safety risk due to the use of seven simultaneously open hoses at the 90% duty cycle, the capacity for a large volume leak, and likelihood of leaked fuel spraying into the air. Moreover, such a pressure level would also be several multiples in excess of the hose pressure rating (discussion above), resulting in a likely hose burst. Ex. 2004 at ¶187.

The Durham configuration with the Coxreels 1125 Series reel and the 3/8 inch hose would lead to undesirable, unsafe operating configurations. A POSITA would

have understood this and therefore would have found the Durham configuration to be unacceptable in a mobile fuel delivery station such as Van Vliet. Ex. 2004 at ¶188.

**VII. GROUNDS 5-8: PETITIONER’S CHALLENGE FAILS BECAUSE VAN VLIET AND AFD DO NOT TEACH AN AISLE WALKWAY**

Claim 1[h] recites “wherein the reels are arranged on first and second opposed sides in the mobile trailer, with an aisle walkway down the middle of the mobile trailer.” Claims 18-22 also recite these features. Petitioner offers three reasons that an aisle walkway is obvious from AFD and Van Vliet. First, Petitioner asserts that because AFD has hoses coming out of both sides of its trailer and AFD describes a hose associated with each reel, a POSITA would have recognized that 12 reels are arranged along the near wall of AFD’s trailer and 12 reels are arranged along the far wall of AFD’s trailer. Petition at 64-65. Next, Petitioner posits that a POSITA would have recognized that AFD must be arranged to have an aisle walkway for maintenance and safety. Petition at 65. And third, Petitioner alternatively asserts that, if not disclosed in AFD, an aisle walkway would be obvious to incorporate in view of Van Vliet. Petition at 66. Each of these reasons, however, is fatally flawed.

**A. AFD does not definitively disclose hoses deployed from both sides**

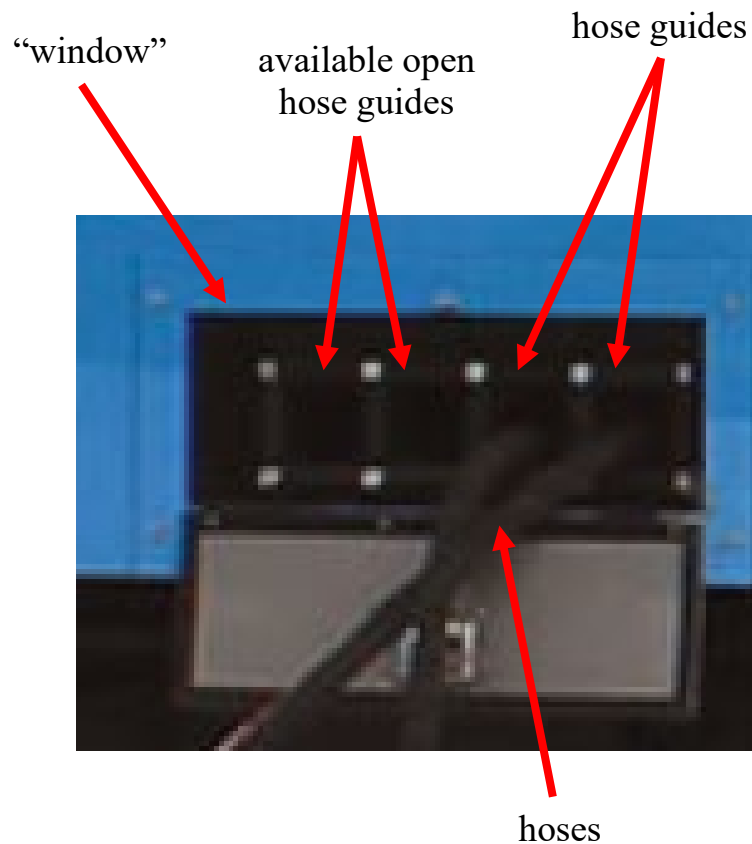
Petitioner claims that the AFD unit has hoses deployed from both sides of the unit and relies on the photograph of the refueling system in AFD at 2. Petition at 63-66, 71-72. In particular, Petitioner contends that AFD's system has hoses coming out



of the far side of the main body. *Id.* However, the far side is not visible, and it is therefore not clear where those hoses are deployed from. In fact, the photo was modified/cropped to at least remove the background, as is evident from the lack of any background in the photo of AFD's system at p. 2, in which other equipment on the site should be visible. Ex. 2004 at ¶189-192. Indeed, the other two photos on pgs. 3-4 of AFD show other equipment and structures in the background. Since no background is shown in the p. 2 photo, it is possible that there was another system or piece of equipment behind the depicted trailer that was removed when the photo was modified. *Id.* Accordingly, a POSITA would have understood that just because the hoses are visible underneath the system in the first photo, this does not mean that those hoses are coming out of the depicted trailer. Ex. 2004 at ¶193-194.

Additionally, the AFD photo suggests that all 24 hoses would be deployed from the one (visible) side. Ex. 2004 at ¶195. In the annotated excerpt below there is a "window" where hoses exit through the trailer wall. Each window has rectangular "hose guides" through which the hoses deploy. In each window there are four hoses guides, two with hoses coming out and two without hoses coming out. Ex. 2004 at ¶195. This indicates that additional hoses could be deployed through the unused hose guides in each of the six windows, which would be a total of 24 hoses (as AFD discloses) all deployed from one side. The 24 hoses guides all on one side

is indicative of deployment of all of the hoses from one side, not opposed sides as Petitioner concludes. Ex. 2004 at ¶194-196.



The hose guides are also inconsistent with Petitioner’s assertion that AFD deploys hoses from the far (non-visible) side. AFD advertises that it can accommodate 24 hoses. On the visible side in the photograph, there are 24 hose guides, which would have been understood to accommodate 24 hoses. *Id.* If the AFD unit in fact had hoses deployed from the far, non-visible side, then one would expect there to also be the same configuration of hose guides on the far side, which with the hose guides on the visible side, makes for a total of 48 hose guides. If there were 48

hose guides, AFD would have touted the benefit of being able to accommodate more than 24 hoses. Petitioner does not explain why AFD would not have disclosed the additional capacity.

Simply put, AFD does not by a preponderance of evidence disclose hoses deployed from both sides of the unit.

**B. AFD's hoses do not require that there must be an aisle walkway down the middle of the trailer for maintenance and safety.**

Petitioner's argument that there *must* be an aisle walkway is an inherency argument. The fact that a certain result or characteristic *may* occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). There must be a basis in fact and/or technical reasoning to reasonably support a determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). MPEP 2112IV. Petitioner has failed to meet that burden because it has not provided any explanation of how an aisle walkway down the middle of the trailer in AFD is *necessarily* present from the configuration of hoses -- or anything else in

AFD for that matter. In fact, Dr. Durham admitted in his deposition that the hoses in AFD do not necessitate that there be two rows or reels or that there would be an aisle. Ex. 2012 at 56-57. Therefore, there does not seem to be any dispute that AFD does not necessarily have an aisle walkway.

Additionally, Petitioner has failed to explain how AFD teaches or suggests an aisle walkway down the middle of the trailer. A POSITA would recognize that an aisle walkway down the middle of the trailer would not be needed for maintenance and safety. Replacement of reels, attachment of the hoses, and the operation of the reels to retract the hoses would only require access to the reels, not that there is an aisle walkway down the middle of the trailer. Ex. 2004 at ¶200-203. As discussed earlier, reels deployed on opposing sides of an aisle walkway adjacent to the sidewalls would impede access to the reels for maintenance and repairs, because only one side of the reels facing the aisle would be accessible since the other side would back to the trailer sidewall and thus be inaccessible. Ex. 2004 at ¶204. Accordingly, maintenance and safety do not require an aisle walkway, let alone one that is “down the middle of the trailer” as claimed. *Id.*

Petitioner also contends that AFD's stairs and flap for access to the main body of the trailer would be interpreted by a POSITA to mean that AFD has an aisle walkway down the middle. Petition at 65. However, Petitioner has read too much into the presence of these features. The presence of stairs and a flap does not

particularly require that there be an aisle walkway down the middle of the trailer. Ex. 2004 at ¶205-206. Rather, the stairs and flap at best suggest that there might be access to the main trailer body. Even if there is access, mere access does not require any particular arrangement in the trailer, let alone an aisle walkway down the middle. Moreover, since the control room is elevated, the most evident reason for the stairs is to provide access to control room rather than suggest any particular kind of access to the main trailer. Ex. 2004 at ¶207.

**C. An aisle walkway down the middle of the trailer is not obvious from Van Vliet.**

Petitioner relies on its analysis of section VII.B.2 of its petition to conclude that to the extent that AFD does not disclose an aisle walkway down the middle of the trailer, it would have been obvious in view of Van Vliet to incorporate. Petition at 66. However, as discussed above with respect to Ground 2, Van Vliet does not disclose or render obvious an aisle walkway down the middle of a trailer.

**D. Petitioner’s challenge of claims 7-10 should be dismissed for additional reasons.**

Claim 7 recites “wherein the mobile trailer includes trailer end wall that has an outside door, an inside wall that defines *first and second compartments in the mobile trailer*, the outside door opening into the first compartment, and at least the manifolds and the reels are in the first compartment” (emphasis provided).

Petitioner's challenge should be dismissed because it has not made a *prima facie* case of obviousness. First, Petitioner alleges that the flap in AFD maps to the claimed outside door. Petition at 66. Per claim 7, it is the trailer end wall that has the outside door. Petitioner has failed in its challenge to claim 7 to identify a trailer end wall or explain how a flap is considered to be a door in an end wall (if that is what it intended to allege), especially since AFD does not show any wall where the flap is located. Ex. 2004 at ¶210-212. Second, Petitioner fails to even mention in its analysis the claimed "inside wall that defines first and second compartments in the mobile trailer." Petition at 66. Lastly, Petitioner alleges that AFD's control room maps to the claimed second compartment. However, Petitioner fails to explain how the control room is "in the mobile trailer," particularly when it is an "inside wall" that *defines* the second compartment "in the mobile trailer." *Id.* A POSITA would not have understood the control room of AFD to be "in" the trailer or to be a compartment that is defined by an inside wall because, from the photo in AFD, the control room is very evidently outside of the trailer from which the hoses deploy. Ex. 2004 at ¶213. For these reasons, Petitioner has not met its burden of alleging a *prima facie* case of obviousness.

## **VIII. SECONDARY CONSIDERATIONS**

The nonobviousness of the challenged claims is strongly supported by a number of objective indicia of nonobviousness, including industry praise,

commercial success, licensing, and copying by others. When present, secondary considerations of nonobviousness must be considered. To be given weight, there must be some nexus between the secondary consideration and a novel feature of the claimed invention. However, secondary considerations are presumptively attributed to the patented invention where a marketed product embodies the claimed features and is coextensive with them. *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1328 (Fed. Cir. 2008) (citation omitted). As it relates to the products discussed below, including the FAS Unit, the secondary considerations should presumptively apply.

**A. The Claimed Technology Has Received Industry Praise**

The FAS Unit, embodying claim elements, has received praise and recognition within the United States oil and gas industry in connection with its safety. Specifically, in 2018, the inventor of the FAS Unit, Ricky Dean Shock, was named an Industry Leader at the Texas Oil & Gas Awards for the FAS Unit's improvements in safety. Ex. 2023 at ¶5.

The FAS Unit is covered by the challenged claims, creating a presumption that this secondary consideration of nonobviousness should apply. Dr. Rodgers has testified that the FAS Unit meets each and every limitation of at least the challenged claims. Ex. 2004 at ¶214. Patent Owner marks each of its FAS Units with the '118, '805, and '955 patents. Ex. 2005.

**B. The Claimed Technology Was Copied by Others, Including  
Petitioner**

Multiple entities have copied the claimed configuration. First, Petitioner is the owner of US Patent No. 11,305,979. During prosecution of the '979 patent, on December 26, 2019, Petitioner filed an Information Disclosure Statement citing the '805 Patent as prior art. (Ex. 2029 at 1). In spite of this knowledge of the '805 Patent, Petitioner offered its CORE Automated Fueling Solution commercially, complete with the claimed features in the '805 Patent – a mobile trailer, a pump, manifolds, a set of reels on each side of the trailer, and an aisle walkway between the sets of reels. A first group of the hoses are deployable from the first trailer side wall and a second group of the hoses are deployable from the second trailer side wall.







The publicly available photos above showing these claimed features in Petitioner's product were included in the Complaint Patent Owner filed against Petitioner for patent infringement, *Fuel Automation Station, LLC. V. Permian Global, Inc.*, Case No. 1-22-cv-008001 (WDTX Aug. 10, 2022). Ex. 2022.

Patent Owner also asserted the '118 and '955 patents in litigation against Comanche Gas Solutions, LLC in connection with their Comanche fuel distribution system. This matter was captioned 21-cv-01007-MN in the District of Delaware.

The Comanche fuel distribution system included a mobile trailer, first and second manifolds on the trailer, reels on opposing sides of the trailer, with an aisle walkway between the sets of reels. Ex. 2021.





### **C. Licensing**

Patent Owner has granted licenses under the '118, '805, and '955 patents to Comanche Gas Services LLC, in which Comanche pays Patent Owner a royalty for the use of automated fracking fuel delivery systems. Ex. 2023 at ¶4.

### **D. Commercial Success**

The invention has also achieved significant commercial success, demonstrating market demand and consumer approval that is directly attributable to the inventive features of the patented fuel delivery system. Indeed, a total of more than 60 FAS units have been used to deliver over 800,000,000 gallons of fuel on well sites in Texas, Oklahoma, Colorado, North Dakota, New Mexico, and Pennsylvania, as well as internationally in Canada, Saudi Arabia, and Argentina. Ex.

2023 at ¶6. Again, each FAS Unit embodies the claim elements of the ‘118, ‘805, and ‘955 patents.

## **IX. CONCLUSION**

For the foregoing reasons, Patent Owner respectfully submits that Petitioner has not established by preponderance of evidence that any claims of the ‘805 Patent are unpatentable.

Respectfully Submitted,

**CARLSON, GASKEY & OLDS, P.C.**

Dated: May 31, 2024

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**STATEMENT OF COMPLIANCE**

Pursuant to 37 C.F.R. § 42.24(b)(1), the undersigned hereby certifies that the foregoing document is produced using a 14-point Times New Roman font and contains 9,915 words (excluding a table of contents, table of authorities, certificate of service, and appendix of exhibits), which is fewer than the 14,000 words permitted by PTAB rules. Counsel relies on the word count of the computer program used to prepare the brief.

Respectfully Submitted,

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Dated: May 31, 2024

**CERTIFICATE OF SERVICE**

I HEREBY CERTIFY that on May 31, 2024, a true and correct copy of the foregoing document was served electronically via e-mail in its entirety on counsel identified below by Petitioner for service at [DLPermianIPR@bakerbotts.com](mailto:DLPermianIPR@bakerbotts.com).

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