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Court Case Now On: It's Packers Plus Versus The World – Here's What's at Stake for Multi-stage Horizontal Completion Companies – David Yager

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It is surely the most interesting oilfield services (OFS) intellectual property (IP) court case nobody but those directly affected knows about. Starting February 6 in a federal courtroom inconspicuously situated in a downtown Calgary office building, a month-long trial began pitting Packers Plus Energy Services Inc. (PPES) against five major and minor oil tool companies PPES alleges have infringed on its Canadian patent 2412072 titled, "Method and Apparatus for Wellbore Fluid Treatment".

PPES is suing alleged Canadian patent infringers Weatherford International PLC., Baker Hughes Canada Company, Essential Energy Service Ltd., Resource Well Completions Technology Inc. and Canuck Completions Ltd. The day this writer visited the trial there were some 18 lawyers in attendance which, at a \$600 per hour average, would cost over \$100,000 daily based on 10 billing hours each (preparation plus courtroom time). This four-week trial would cost the tool companies over \$2 million (plaintiff plus defendants) in addition to years of offense and defense by the various parties, surely millions more.

Based on a prior judgement/settlement early last year of \$7.7 million PPES was awarded against Canuck, the smallest defendant, if PPES wins the financial stakes would surely be in the tens if not hundreds of millions of dollars. Who knows? Where this trial will go is unknown. While the courtroom portion of the lawsuit will be over in early March, the judge's decision will not be rendered for months thereafter. Stay tuned. This story won't be over anytime soon.

The issue is the legendary Packers Plus multi-stage horizontal wellbore completion system that played a key role in the development of the shale gas and light tight oil boom that revolutionized the North American oil and gas industry in the past 15 years. Called the "open hole

multistage ball drop system”, it was a proven and reliable method of setting multiple packers in an uncased wellbore to isolate sections of the reservoir from one end to the other to perform multiple fracs. It took Calgary-based PPES from obscurity to international fame in a short period and played a pivotal role in moving the entire process forward. PPES sold a minority interest to Schlumberger in 2005.

While this system has largely been eclipsed by plug and perforate systems in cemented liners and coiled tubing activated sliding sleeves, it was indeed pioneering plumbing that helped commercialize extended reach horizontal completions in reservoirs that would not otherwise yield commercial quantities of hydrocarbons. The PPES ball drop system was what the investing community calls a “disruptive technology”, something so useful and necessary the macroeconomic forces it unleashes creates new and powerful problems and challenges. The full commercial impact of where this system would take the inventors, competitors and customers – or even the industry as a whole – was likely not anticipated at the time. The upstream oil and gas industry is not gifted at predicting its future.

For OFS, disruptive technologies are a blessing and a curse. The good news is the inventor gets to make a whack of money in the short term and much more thereafter. The bad news is success attracts attention and competition. Once every exploration and production (E&P) company decides they need it the focus is on price and availability, not who controls the IP, patent protection or not. When demand explodes the first salesman in the door with a product that does the same thing at a lower price or with faster delivery is always welcome.

E&P companies encourage competition simply defined as multiple suppliers. The relationship between OFS and E&P is such that should vendors one day go to war over who owns the IP, E&P has already enjoyed the benefit but will bear little or none of the risk. Competition goes up. Prices go down. And the good news for E&P is OFS rarely sues its customers regardless of what role they may have played in the purchase, use and benefit of patented products or services.

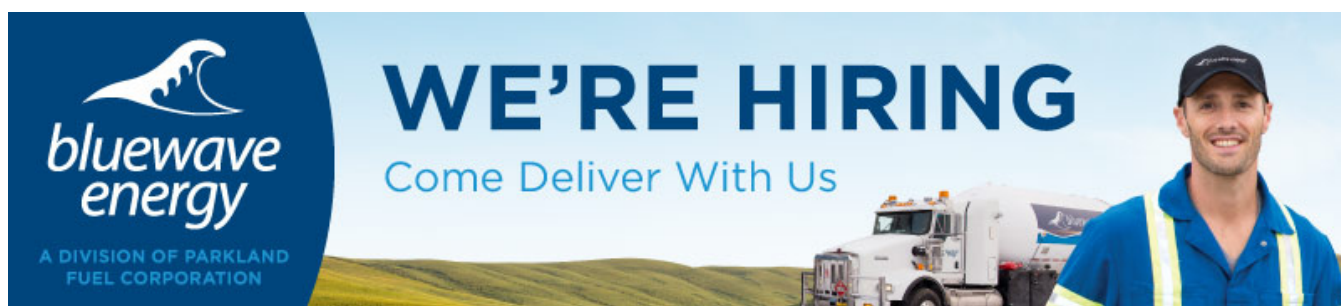
According to the Canadian Intellectual Property Office website, Canadian patent 2412072 was filed by Jim Fehr and Daniel Themig on November 19, 2002. A U.S. patent under the same title was filed exactly a year earlier. Themig is best known as the founder and CEO of PPES. The application was open for public inspection as a “patent pending” after six months but was not actually issued until June 19, 2012, almost ten years later. The Daily Oil Bulletin reported on July 17, 2013 that PPES had filed its first statement of claim against Canuck Completions, perhaps a strategy to try its luck on the smallest player it believed was infringing on its newly issued patent.

A news report covering the \$7.7 million Canuck decision early last year indicates a similar action was filed against Essential in October 2013. Essential issued a news release January 5, 2016 stating, “Essential believes that the lawsuit is without merit and is not only defending against the infringement allegations but also seeking a declaration that the Packers patent is invalid. The trial date has been set for February 2017”. This is the trial currently underway.

Essential continued, “Unlike the consent judgement that was issued in that (Canuck) case, Essential remains of the view that once the Federal Court has the benefit of hearing evidence and argument in a contested proceeding, it will conclude that the Packers’ patent is not being infringed by Essential and, in any event, is invalid.”

What this means is that although in the Canuck case the judge ruled there was infringement, the validity of the patent was not contested. The patent itself is the foundation of the defense of the multiple defendants.

Ten years without a patent is a long time for a disruptive invention to be in the marketplace, particularly when it includes the formative years of what would become a horizontal drilling and completion boom of mind-boggling proportions. Every single horizontal well drilled – tens of thousands of them – needed something in it that did something like what the original PPES system delivered. It was fabulously profitable. Demand was exploding. These are the market forces disruptive technological advances unleash.



This new drilling and completion technique has radically changed the packer business. In the old days of vertical wells tool companies got to sell one packer. A \$10,000 invoice was high for most completions, a small fraction of that more common. A dual zone completion with sour

service metallurgy might jack the invoice to \$50,000. This was a mature and highly competitive business with no major advancements in decades.

Extended-reach horizontals changed all that. Instead of selling one packer you could sell 10 or 20. Today horizontal completions are commonly done in 40 or 50 stages with one report indicating a Bakken well last year employed 93 stages. A packer or tool of some sort is sold for each stage. In the early days of the process industry sources say suppliers could fetch \$50,000 per stage often resulting in an invoice of \$1 million per well. Good or bad, that same tool today goes for about \$7,000; good for the client, bad for the supplier. And there are other methods of achieving the same outcome as the process is refined.

The drastically reduced cost of all elements of horizontal drilling and completion are good for the business, particularly now that oil only fetches half what it once did. Because of the enormity of shale gas and light tight oil resources, this new market is for the most part elastic. When OFS cuts the price in half E&P will drill twice as many wells at a given commodity price. Having oil companies make more money and produce more oil and gas is beneficial for OFS because it expands the market and ensures commercial longevity. Regrettably, many OFS owners and executives don't see it that way.

Finding information on the statements of claim and defense for this trial is not easy. Because the case is before the court as this is written nobody wants to say much about anything.

But a key element of the defense case appears to be public in the form of an SPE paper delivered in March, 1997 at a conference in Oklahoma City. Titled, "Design and Installation of a Cost Effective Completion System for Horizontal Chalk Wells Where Multiple Zones Required Acid Stimulation", Halliburton employee D.W. Thompson described a series of packers employing balls and seats and sliding sleeves that seems similar to the legacy PPES system.

Designed to stimulate a horizontal well in multiple stages in one trip, the abstract reads, "Each sleeve contains a threaded ball seat with the smallest ball set in the lowest sleeve and the largest ball seat in the highest sleeve. With this system, stimulation of 10 separate zones is accomplished in 12 to 18 hours by a unique procedure that lubricates varying sized low-specific gravity balls into the tubing and then pumps them to a mating seat in the appropriate MSAF (packer), thus sealing off the stimulated zone and allowing stimulation of the next zone which is made accessible by opening the sleeve".

The paper's procedure predates the PPES U.S. patent application by about four years, and is what the defendants are in part citing as "prior art" in their assault on the PPES patent. Halliburton never thought to patent the process as it seems to have done largely with existing components and was just another day at work for a global service giant.

The day this writer was in the courtroom an expert witness who had described this Halliburton assembly as similar to the PPES system was being cross examined by the plaintiff's counsel. Among other things, the witness was forced to admit acidizing was not the same as hydraulic fracturing, and cased hole was different than open hole. How much this matters legally won't be known for months.

The judge, undoubtedly a normal human being before being indoctrinated into the highly-specialized world of oil and gas well completion and stimulation systems, will be forced to become a downhole tool expert prior to rendering a decision. One can only assume the judge is already well versed in IP and patent law.

Sealing off wellbores in open and cased vertical wells is hardly new. A 1971 edition of the textbook History Of Oil Well Drilling cites the 1912 invention of a cement retainer by R.C. Baker (founder of Baker Oil Tools), "to pack off between the casing and tubing when pumping cement through tubing". Open hole packers to isolate and test producing reservoirs date back to 1867 and were, of course, patented. The first lawsuits about who invented what in the area of open hole zone isolation date back to the 1930s, Halliburton versus what would later become Johnston Testers. According to a Wikipedia website on hydraulic fracturing this process was invented in 1947 and was in broad commercial use in the 1950s.

So, whether you can take 150 years of wellbore sealing and isolation tools and 70 years of pressure pumping and a zillion patents citing prior art and determine everything is new because it being employed in horizontal not vertical wells will require an exhaustive and detailed examination of patents and intellectual property law.

Before it went down the path of litigation, PPES must have surely pondered long and hard about the value of a patent if the owner did not protect it. An option is licensing to ensure the inventor of the IP gets a share of all applications of its technology. Licensing also ensures the patent is not challenged. That the matter is in court indicates licensing was never considered or negotiations never successfully concluded.

The defendants in Packers Plus versus the world must have figured the ten-year absence of a patent in the face of skyrocketing demand made entering the market acceptable; PPES should never have received a patent in the first place; the reward was worth the risk if a patent was issued; or that PPES would never risk an exhaustive court case that might render its patents invalid.

Meanwhile, the E&P companies that provide packer and completion tool suppliers with enough money to sue each other and defend themselves are able to purchase cheaper and better multi-stage completion systems every day. Seemingly without guilt nor legal repercussions. And so it goes in the oil and gas business. Oil companies get the mine and too often the suppliers get the shaft.

About David Yager – Yager Management Ltd.

Based in Calgary, Alberta, David Yager is a former oilfield services executive and the principle of Yager Management Ltd. Yager Management provides management consultancy services to the oilfield services industry in a number of areas including M&A, Strategic Planning, Restructuring and Marketing. He has been writing about the upstream oil and gas industry and energy policy and issues since 1979.

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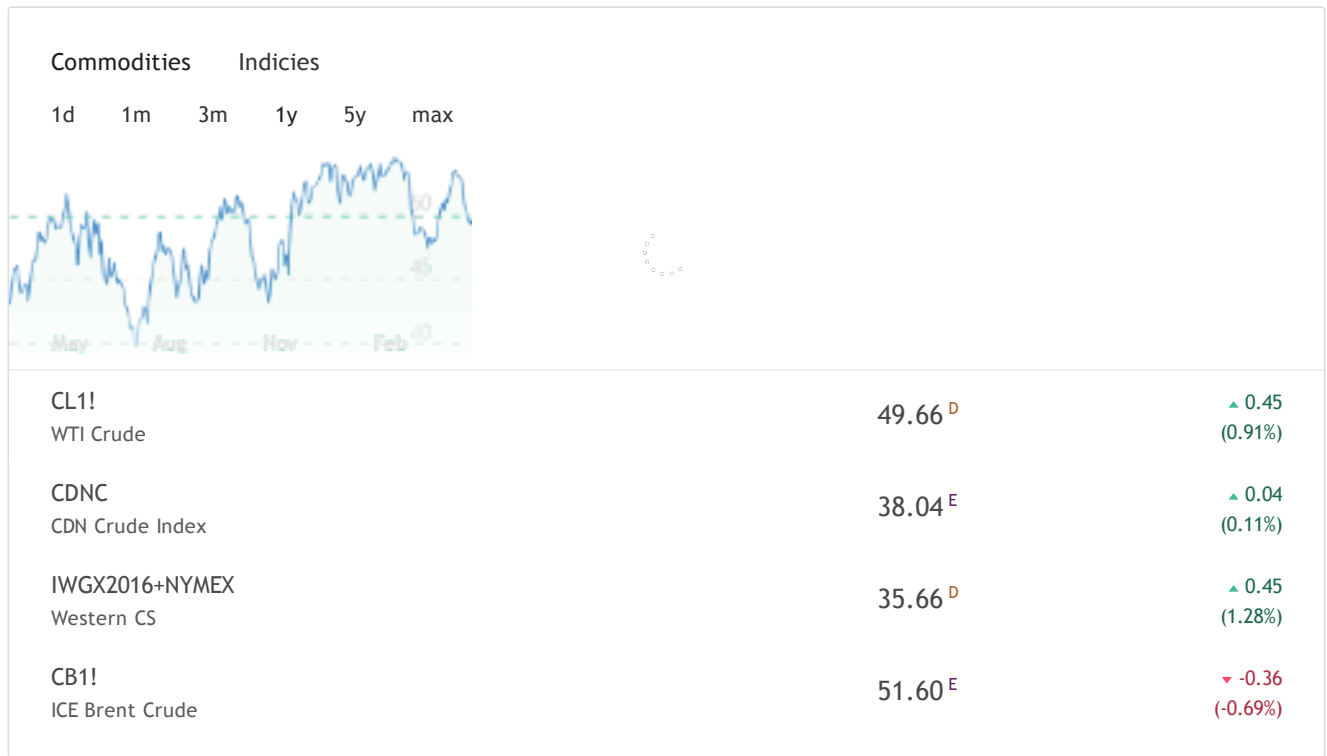
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