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Under pressure: Federal Court finds “hot refuelling” system patent valid and infringed in connection with well-site fracking equipment

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Intellectual Property

The Federal Court awarded accounting of profits and pre-grant compensation for valid and infringed claims of a patent for hot refuelling of fracking equipment, but declined to award punitive damages.

Frac Shack Inc. v AFD Petroleum Ltd. concerned the infringement and validity of claims for a hydraulic fracturing (fracking) equipment refuelling system in the Frac Shack plaintiffs’ Canadian Patent No. 2,693,567 (the ‘567 Patent). Writing for the Federal Court, Mr. Justice Manson rejected the defendant’s argument that the claims of the ‘567 Patent were invalid for insufficiency or obviousness, but agreed that some of the claims were broader than the invention made and disclosed. The court found that a number of the valid claims were infringed by the defendant’s competing product and allowed the plaintiffs’ election for an accounting of profits, but rejected their claim for punitive damages.

The problem and solution addressed by the ‘567 Patent

The invention of the ‘567 Patent was addressed to an operational problem experienced in the fracking business: the need to run equipment at the well site for the extended periods of time sometimes required to complete the fracture treatment. In some cases, this equipment was needed for longer than the onboard fuel supplies would last and when this occurred, well-site personnel were required to engage in “manual hot refuelling” whilst the equipment was running. This practice was considered personally and environmentally dangerous for many reasons.

The invention of the ‘567 Patent was a system and method intended to replace manual hot refuelling with parallel and independent delivery of fuel to individual fuel tanks from a remote and semi-permanent, centrally controlled source. The court’s analysis of the validity issues in the case was closely tied to its conception of the invention as a solution to this particular problem.

Validity issues: insufficiency, overbreadth, and obviousness

No insufficiency of disclosure. The court rejected the defendant’s argument that the ‘567 Patent described the components of the fuel-delivery system in terms too broad and generic to constitute a sufficient disclosure. In fact, all of the experts agreed they would be able to build the invention of the ‘567 Patent based upon the disclosure; the court accepted that the skilled person would have been able to do so as well.

Claims overbroad. The court agreed in part with overbreadth arguments advanced by the defendant:

- *Fuel level sensor.* Claims 1–6 of the '567 Patent lacked a “fuel level sensor” element, which is required to remotely monitor the level of fuel in the tanks of equipment connected to the refuelling system. The court held that the invention did not include embodiments that lacked a remote means of monitoring the equipment fuel level and invalidated these claims on that basis.
- *Work sites, well sites, and elsewhere.* The '567 Patent contains claims that describe the system of the invention (i) “at a well site during fracturing of a well,” (ii) “at a work site,” and (iii) without reference to any location. The court construed the term “work site” as different and broader than the “well site” limitation using claim differentiation and the disclosure, then held that the work site claims were overbroad. The invention, it held, was specifically tied to hot refuelling in the context of a fracking well site. For the same reason, the court also made the same finding for the claims that contained no reference to the location of the system. This resulted in claims 16–18, 20–26, and 32–37 being declared invalid.

Conversely, the court rejected other overbreadth allegations regarding the placement of valves, the presence of threading on the fuel cap, and the use of dry-break connections between the hose and fuel cap. In the case of the valve placement, the court was satisfied the skilled reader would know where to put them; in the case of the latter two allegations, the court held that they were impermissible attempts to limit the inventors to the preferred embodiments of the invention.

Not obvious. Since all of the components of the invention were used in their conventional manner, the defendant took the position that they were obvious. The court disagreed. It held that the state of the art prior to the '567 Patent was manual hot refuelling; at the time, no one was focussed on how to solve problems associated with manual hot refuelling using technologies like the invention of the '567 Patent. The question — and thus the solution — was not obvious. Notably, the court made this finding over the evidence of the defendant's expert who, when asked the question while blinded, designed a similar system to solve the problem. The court found this exercise unpersuasive because the instruction to consider the question was, itself, based upon impermissible hindsight.

Infringement & remedies

Following a fact-driven analysis of infringement in which it found for the plaintiffs on most issues, the court considered monetary relief of three kinds: (i) pre-grant damages, (ii) post-grant accounting of profits, and (iii) punitive damages, each explained further below. The court also granted a permanent injunction restraining further infringement of the '567 Patent and costs in favour of the plaintiffs.

Pre-grant damages. The court awarded compensation for the pre-grant period based upon a reasonable royalty rate of 29%, as proposed by the plaintiffs' expert, and asked the parties to reach an agreement on the resulting quantum.

Post-grant accounting of profits. The defendant disputed the plaintiffs' election to claim profits over damages for the post-grant period; the court held that there was no reason the plaintiffs should not be allowed this election. In connection with this issue, the court made two findings of note. First, Manson J declined to draw an adverse inference from the fact the plaintiffs did not lead expert evidence showing that their Frac Shack System fell within the scope of the '567 Patent's claims. The defendant led no evidence to the contrary. Second, Manson J rejected the defendant's argument that manual hot refuelling was a non-infringing alternative to using the invention of the '567 Patent for the purpose of reducing the profits awarded. Even though many companies continued to use manual hot refuelling, the court found that the significant difference in risk meant they were not interchangeable.

Punitive damages. The court declined to award the plaintiffs punitive and exemplary damages. It held that although the defendant's actions were blameworthy, they did not merit the court's condemnation.

Link to decision:

Frac Shack Inc. v AFD Petroleum Ltd., [2017 FC 104](#)

Christopher A. Guerreiro

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