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4-2014

## Oil and Gas Law: From *Habendum* to Patent Law

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### Recommended Citation

Emir Crowne and Barbero C. Michael, *Oil and Gas Law: From Habendum to Patent Law*, 5 Wash. & Lee J. Energy, Climate & Env't. 295 (2014), <https://scholarlycommons.law.wlu.edu/jece/vol5/iss2/3>

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# Oil and Gas Law: From *Habendum* to Patent Law

Dr. Emir Crowne & Michael C. Barbero\*

## *Abstract*

*This article outlines and addresses the specific patent issues affecting the oil and gas industry. In so doing, it argues that the business realities of the industry, coupled with its fast-paced environment, make it a perfect example of why the current patent prohibition against professional skills and business methods must be reformed.*

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## *I. Introduction*

Oil and gas are vital resources to the functioning of industrial economies.<sup>1</sup> More germane to most people is the necessity of these

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hydrocarbons in daily life.<sup>2</sup> From the way we power automobiles to the manner in which we heat homes and offices, oil and gas play an important role.<sup>3</sup> In smaller ways, modern life also depends upon these fossil fuels.<sup>4</sup> Plastic bags, coffee mugs, clothing, toothbrushes, and refrigeration are directly tied to the use of oil and gas.<sup>5</sup> As such, this commodity has attracted extensive corporate attention and has led to an immense industry.<sup>6</sup> Entire cities and nations depend upon the ability to locate and remove these resources.<sup>7</sup> Political organizations have fostered this process, large corporations have perfected it, and the quest for more resources has sparked and sustained geopolitical events.<sup>8</sup> In short, the oil and gas industry is an important and pervasive topic.<sup>9</sup>

This article will focus on the law of patents as it relates to the industry. Part II will briefly outline the Canadian industry, followed in Part III by a discussion of oil and gas law in Canada. This Part will outline how Canadian jurisprudence has addressed ownership of a resource that constantly shifts beneath the earth's surface and is seemingly incapable of possession until brought to the surface. Lastly, Part IV of this paper will address the specific patent issues affecting the industry. In so doing, it will

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1. See *Oil and Natural Gas Overview*, AM. PETROLEUM INST., <http://www.api.org/oil-and-natural-gas-overview> (last visited Jan. 3, 2014) (giving an overview of the United States oil and natural gas industry) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

2. See *id.* (describing the importance of oil and natural gas in daily life).

3. See *id.* (explaining that oil and natural gas are used to fuel vehicles, heat homes, and prepare food).

4. See *id.* (explaining that petroleum and natural gas are used as raw materials in manufactured products).

5. See *Things Made From Oil That We Use Daily*, PUB. BROAD. SERV., <https://www.pbs.org/independentlens/classroom/ww/petroleum.pdf> (last visited Jan. 4, 2014) (listing the many items we use in our daily lives that are made from petroleum) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

6. See *Oil and Natural Gas Overview: Industry Economics*, *supra* note 1 (describing the economics of the oil and natural gas industries).

7. See ROBERT D. BOTT, *EVOLUTION OF CANADA'S OIL AND GAS INDUSTRY 2* (David M. Carson ed., 2012), available at <http://www.centreforenergy.com/shopping/uploads/122.pdf> (explaining that the oil and gas industry employs hundreds of thousands of citizens, contributes to national wealth and international trade, and provides goods and services vital to daily life) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

8. See Aaron Kiersh and Dave Levinthal, *Oil and Gas: Background*, OPENSECRETS.ORG: CTR. FOR RESPONSIVE POLITICS (June 2010), <http://www.opensecrets.org/industries./background.php?cycle=2014&ind=E01> (outlining the political contributions and lobbying efforts made by members of the oil and gas industry) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

9. See BOTT, *supra* note 7 and accompanying text.

argue that the industry's business realities and fast-paced environment render it a paradigm of why patent protection for professional skills and business methods is essential.

## *II. Overview of the Industry*

### *A. Geology and Creation of Oil and Gas*

The planet Earth is estimated to be 4.5 billion years old.<sup>10</sup> The creation of what we now consider fossil fuels took place some 560 million years ago.<sup>11</sup> Through processes of decomposition, burial, pressurization, and heat, various organic materials have transformed into coal, oil, gas, and bitumen.<sup>12</sup> Most of the oil and gas now being recovered was either plant or animal life that existed primarily in oceans or large lakes.<sup>13</sup> Land-based plants, similar to modern-day peat moss, typically have become coal, water-based plants and algae have become crude oil, and organic life has become the material from which natural gas is normally derived.<sup>14</sup> Such material was deposited in mud or silt, and with the repeated application of pressure and heat (between 50 degrees Celsius and 150 degrees Celsius), became part of the sedimentary rock that was formed.<sup>15</sup>

This porous rock permitted the hydrocarbons that formed (either oil or gas) to rise through the rocks, eventually settling below impenetrable formations, and in effect creating the proverbial oil or gas reservoir.<sup>16</sup> Hydrocarbons that have succeeded in rising to the earth's surface represent the most readily extractable—and now most depleted—source of oil and

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10. *See id.* at 4 (describing the age of the earth and the origins of crude oil and natural gas).

11. *See id.* (“According to the organic theory of petroleum formation, the earliest of the sediments that produce almost all crude oil and natural gas were deposited about 560 million years ago.”).

12. *See id.* (describing how organic materials become fossil fuels).

13. *See id.* (“Crude oil is typically derived from marine [life] . . . that have been gently ‘cooked’ for at least one million years at a temperature between 50° and 150° C. Natural gas can be formed from almost any marine or terrestrial organic materials, under a wide variety of temperatures and pressures.”).

14. *See id.* (outlining the organic theory of fossil fuel creation, the most widely accepted view).

15. *See id.* at 6–7 (explaining that petroleum is often found in a sedimentary basin, a depressed area of the earth's crust where organic matter was deposited with mud and silt from streams and rivers).

16. *See id.* at 4 (“Most of the world's petroleum has been found trapped in porous rocks under a layer of relatively impermeable rock. In such reservoirs, the petroleum is not collected in an underground ‘lake’ but rather is held in the pores and fractures of rock, like water in a sponge.”).

gas.<sup>17</sup> An additional geological process of great importance was the creation of the oil sands in Alberta.<sup>18</sup> The oils sands were formed approximately fifty million years ago in much the same way as other oil deposits; however, these collections of oil migrated underground and became trapped below sandstone formations.<sup>19</sup> Once trapped, the oil deposits interacted with various bacteria and transformed from liquid oil into a more solid structure, known as bitumen or oil sands.<sup>20</sup>

Every province and territory in Canada contains one of the seven various formations of sedimentary rock capable of holding oil or gas underneath it.<sup>21</sup> The western sedimentary formation is by far the most productive basin, holding fifty-seven percent of Canada's total known oil reserves.<sup>22</sup> This formation covers all four western provinces, and in 2003, was responsible for eighty-seven percent of Canada's total oil output.<sup>23</sup> In addition, this sedimentary formation is home to the controversial oil sands.<sup>24</sup> The Canadian Association of Petroleum Producers (CAPP) notes that the oil sands contain 173 billion barrels of oil, enough to supply Canada with all of its oil needs for the next 250 years.<sup>25</sup> The second most productive sedimentary basin is found off the coast of Atlantic Canada in the areas surrounding Baffin Bay, Scotian Basin, and the Newfoundland Basin.<sup>26</sup> These areas account for eighteen percent of Canada's total known

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17. *See id.* (explaining that a "seep" occurs when hydrocarbons migrate to the Earth's surface).

18. *See id.* (outlining the differences between Alberta's oil sands, one of the world's largest known hydrocarbon sources, and traditional petroleum reservoirs).

19. *See id.* ("[H]uge volumes of oil migrated upward through more than 100 kilometres of rock until they reached large areas of sandstone at or near the surface.").

20. *See id.* (describing the process by which bacteria digest and degrade hydrocarbons thereby forming bitumen).

21. *See id.* at 5 (explaining where petroleum is found in Canada).

22. *See id.* ("The Geological Survey of Canada estimates this basin contained 57 per cent of Canada's original in-place conventional petroleum resources.").

23. *See id.* ("[T]he Western Canada Sedimentary Basin . . . includes most of Alberta and Saskatchewan and parts of British Columbia, Manitoba, Yukon and the Northwest Territories.").

24. *See id.* ("Crude oil and natural gas are found in sedimentary rocks formed over millions of years by the accumulation of sand, silt, mud and the remains of living creatures . . .").

25. *See Canada's Industry: Industry Across Canada: Alberta*, CANADIAN ASS'N OF PETROLEUM PRODUCERS, <http://www.capp.ca/canadaIndustry/industryAcrossCanada/Pages/Alberta.aspx> (last visited Apr. 14, 2014) (explaining that Alberta's oil sands help place Canada's oil reserve as third largest in the world) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

26. *See* BOTT, *supra* note 7, at 5–7 (describing the eastern sedimentary basins in Canada's Atlantic Margin).

reserves.<sup>27</sup> Production of oil and gas occurs to a much lesser extent in each of the remaining provinces and territories.<sup>28</sup>

### *B. History of Canadian Oil and Gas*

In the mid-nineteenth century, Canada was home to North America's first oil well and first site of oil production.<sup>29</sup> In 1855, James Miller Williams of Hamilton, Ontario, began removing oil from wells in the Enniskillen Townships of Ontario and refining it in Hamilton for use as lamp oil and other products.<sup>30</sup> The importance of fossil fuels grew with the aid of another Canadian, Abraham Gesner, who developed and patented a method for the creation of Keroselain, now known as Kerosene lamp oil.<sup>31</sup> American Benjamin Silliman Jr. used this same process with oil from Pennsylvania to create high-quality lamp oil.<sup>32</sup> The use and importance of oil grew exponentially with the creation of the internal combustion engine, which by 1905 was clearly superior to steam and electric power modes of output generation.<sup>33</sup> Another key element in the rise of the hydrocarbon was the 1911 decision of Winston Churchill, then the minister in charge of the Royal Navy, to power the entire British fleet by way of "black bunker oil" rather than coal.<sup>34</sup> This by-product of the oil refinery process was as efficient as coal in powering ships, but required far less labor to procure.<sup>35</sup>

In the years immediately following the Second World War, the Canadian government led an effort to end its reliance on imported oil and

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27. *See id.* at 5 ("The Geological Survey of Canada estimates that the Atlantic Margin contained 18 per cent of Canada's original in-place conventional petroleum resources.").

28. *See id.* (explaining that development in these areas has been slow due to production costs, lengthy regulatory processes, long distances to markets, absence of pipeline systems, and low natural gas prices).

29. *See id.* at 11 ("[In 1851,] Charles N. Tripp of Woodstock, Ontario, founded the International Mining and Manufacturing Company to exploit [Ontario's] asphalt beds and oil springs. It was the first registered oil company in North America.").

30. *See id.* (outlining Williams's work for the International Mining and Manufacturing Company).

31. *See id.* ("Between 1846 and 1853, Abraham Gesner of Halifax, Nova Scotia developed a technique for producing a new synthetic lamp oil from coal.").

32. *See id.* ("In 1855 American chemist Benjamin Silliman Jr. applied . . . fractional distillation to a sample of Pennsylvania rock oil and found it produced high-quality lamp oil.").

33. *See id.* at 13 (describing how automobiles powered by spark-ignited gasoline engines outperformed their steam- and electric-powered rivals).

34. *See id.* at 14 (explaining that Churchill believed the switch from coal to oil was essential for retaining naval mastery as tensions mounted between Britain and Germany).

35. *See id.* ("At sea, engineers discovered that thick, black bunker oil—another former waste product of refining—fired boilers as efficiently as coal but required far less labour.").

develop its own petroleum supplies.<sup>36</sup> This effort resulted in increased exploration and ultimately the discovery of the Leduc oil fields south of Edmonton.<sup>37</sup> It was this event, after 133 failed attempts at finding a major new oil field, which turned Canada into a net oil exporter.<sup>38</sup> These wells in turn spawned a massive oil boom across Alberta and the Canadian West that has continued ever since.<sup>39</sup>

### C. The Current Canadian Industry

Since the 1947 find in Leduc, Canada has grown in stature to become one of the most important oil exporting nations in the world.<sup>40</sup> The domestic oil industry is immense, especially in the west, and is a source of strategic importance not only to Canada, but also to the United States.<sup>41</sup> Canada is the largest exporter of oil to the U.S., sending over two million barrels of crude oil each day.<sup>42</sup> Canada, along with the next four highest oil-exporting countries to the U.S. (Mexico, Saudi Arabia, Venezuela, and Nigeria), supplies sixty-nine percent of the United States' daily oil imports.<sup>43</sup> When coupled with other petroleum products, Canada remains a

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36. *See id.* (“In the late 19th century and early 20th century, Canadian oil companies relied on imported crude oil, mainly from the United States, to supplement the declining production of southwestern Ontario.”).

37. *See id.* (explaining that the Leduc oil fields were discovered near Edmonton in 1947).

38. *See id.* at 18–20 (describing industry success following the discovery of the Leduc oil fields).

39. *See id.* at 20 (“Exploration successes . . . included discoveries at Daly, Manitoba in 1951; Midale, Saskatchewan and Pembina, Alberta in 1953; Swan Hills, Alberta and Clarke Lake, British Columbia in 1957; Rainbow Lake, Alberta in 1965; and West Pembina, Alberta in 1977.”).

40. *See* CANADIAN ASS'N OF PETROLEUM PRODUCERS, CRUDE OIL: FORECAST, MARKETS AND TRANSPORTATION 3 (2013), *available at* <http://www.capp.ca/getdoc.aspx?DocId=227308&DT=NTV> (“According to the EIA, Canada currently ranks as the sixth largest crude oil producing country in the world and remains the largest source of crude oil imports by the United States.”) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

41. *See Crude Oil and Total Petroleum Imports Top 15 Countries*, U.S. ENERGY INFO. ADMIN. (Nov. 29, 2011), [http://www.eia.gov/pub/oil\\_gas/petroleum/data\\_publications/com\\_pany\\_level\\_imports/current/import.html](http://www.eia.gov/pub/oil_gas/petroleum/data_publications/com_pany_level_imports/current/import.html) (explaining that Canada remains the largest exporter of petroleum to the United States) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

42. *See id.* (indicating that the United States imported more than two million barrels of crude oil each day from Canada, making Canada the largest supplier of crude oil to the United States).

43. *See id.* (“The top five sources of US crude oil imports for September [2011] were Canada (2,324 thousand barrels per day), Saudi Arabia (1,465 thousand barrels per day), Mexico (1,099 thousand barrels per day), Venezuela (759 thousand barrels per day), and Nigeria (529 thousand barrels per day).”).

leader, currently sending the equivalent of 2.324 million barrels of petroleum south of its border every day.<sup>44</sup> The Canadian Association of Petroleum Producers has forecasted that Canadian output will nearly double by the year 2025, rising from 3.04 million barrels per day in 2012, to an estimated 5.85 million barrels of oil, or the equivalent, per day.<sup>45</sup>

In terms of world demand, Canada's position is less noteworthy, given the sheer size of the global thirst for oil. Canada currently produces roughly three million barrels of oil per day for a world that requires eighty-nine million barrels per day and shows no sign of reducing this requirement.<sup>46</sup> Still, the production is lucrative, especially for a province such as Alberta.<sup>47</sup> In the 2006–07 fiscal year, the Alberta government and other property holders took in a combined \$12 billion in royalties and other related revenues.<sup>48</sup> The industry in that province alone spent an additional \$17 billion in the process of exploration or development.<sup>49</sup> In turn, Alberta's oil and gas industry directly and indirectly employs 415,000 people.<sup>50</sup>

### *III. The Law of Oil and Gas*

#### *A. The Problem of Ownership*

An apt way to address a novel legal problem is to analogize the current issues with already-settled issues, and then apply principles of the latter to the former. The law of oil and gas illustrates a tortured attempt at doing this. Unlike other minerals, such as coal, oil and gas are not stable

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44. *See id.* (showing that Canada was the largest supplier of petroleum to the United States).

45. *See* CANADIAN ASS'N OF PETROLEUM PRODUCERS, *supra* note 40, at 3 (summarizing projections of Canada's oil production and supply).

46. *See* BRITISH PETROLEUM, BP STATISTICAL REVIEW OF WORLD ENERGY 8–9 (2013), available at [http://www.bp.com/content/dam/bp/pdf/statistical-review/statistical\\_review\\_of\\_world\\_energy\\_2013.pdf](http://www.bp.com/content/dam/bp/pdf/statistical-review/statistical_review_of_world_energy_2013.pdf) [hereinafter BP STATISTICAL REVIEW] (providing a statistical overview of world oil production and consumption for the year 2012) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

47. *See Canada's Industry: Industry Across Canada: Alberta*, *supra* note 25 (discussing the size of Alberta's petroleum industry).

48. *See* CANADIAN ASS'N OF PETROLEUM PRODUCERS, OIL SANDS: BENEFITS TO ALBERTA AND CANADA 10–11 (2007), available at <http://www.capp.ca/GetDoc.aspx?DocID=121342> (describing the economic benefits of the oil and gas industry in Alberta and Canada) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

49. *See id.* at 10 (describing the investments that have been made in Alberta's oil and gas industry).

50. *See* CANADIAN ASS'N OF PETROLEUM PRODUCERS, *supra* note 25 (summarizing the role and size of Alberta's oil and gas industry within the province).



underground: the fugacious character of oil and gas necessarily implies that the substance may move and shift underneath the feet of those who believe they own it.<sup>51</sup> Moreover, oil exists under pressure and often across multiple properties, so a party that attempts to reduce the substance to possession by way of a well may inadvertently drain the oil underneath a neighbor's property, changing the pressure and creating gas.<sup>52</sup> The application of legal principles to this situation results in the conclusion that one cannot seemingly own oil or gas *in situ*.<sup>53</sup> Rather, hydrocarbons may only be owned when reduced to possession.<sup>54</sup> As such, courts have had a difficult time fully articulating a legal conception of oil and gas proprietary rights.<sup>55</sup> Early efforts to analogize oil or gas with water proved problematic, as did attempts to draw comparisons to other minerals.<sup>56</sup> The relative lack of British or Commonwealth jurisprudence on point, as well as a natural tendency to gravitate towards the American jurisprudential position, has complicated matters for Canadian courts.<sup>57</sup> As will be shown, however, neither has carried the day in Canadian law.<sup>58</sup>

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51. ALASTAIR R. LUCAS & CONSTANCE D. HUNT, *OIL AND GAS LAW IN CANADA* 5 (1999) ("The fugacious character of oil and gas causes the substances to migrate within their reservoirs in response to changing reservoir conditions and particularly in response to the effects of wells drilled into the reservoirs . . . . It is this characteristic that distinguishes oil and gas from other minerals . . .").

52. See JOHN BISHOP BALLEM, *THE OIL AND GAS LEASE IN CANADA* 7 (3d ed. 2008) ("Oil and gas do not flow of their own volition in underground streams, but they are capable of moving within the pool if the reservoir valance is disturbed. Thus, if a well commences production, the reservoir pressure in the vicinity of the bore will be altered and these fluid and gaseous hydrocarbons will move towards the lowered pressure.").

53. See LUCAS & HUNT, *supra* note 51, at 7 (summarizing the uncertainty in Canadian theories of oil and gas ownership and inferring "qualified ownership of oil and gas in place, subject to the rule of capture").

54. See *id.* at 6 (explaining that oil and gas is subject to defeasance unless the owner of the soil reduces them into possession) (quoting *Borys v. Canadian Pac. Ry.*, [1953] A.C. 217 (P.C.) 229 (appeal taken from Alta.)).

55. See *id.* at 5 ("The fugacious character of oil and gas . . . is the major cause of the difficulties courts have experienced in defining the legal characteristics of oil and gas resources.").

56. See *id.* (noting that the nature of the flow of oil and gas distinguishes it from other substances, thus making legal analogies difficult); BALLEM, *supra* note 52, at 7 ("In the earliest American cases, the courts seemed to view these minerals as flowing in underground rivers, and this colorful, if inaccurate, concept clearly affected some of the formative jurisprudence.").

57. See LUCAS & HUNT, *supra* note 51, at 6 ("Earlier English decisions that might have guided the court . . . are by no means consistent."); BALLEM, *supra* note 52, at 9–10 (explaining the interrelationship of the Canadian and American oil industries, and the importation of American legal principles into Canada).

58. It is important to note that the majority of current oil and gas exploration and operations are conducted on Crown land or in provinces where all oil and gas rights have been vested or re-vested in the provincial government. See BALLEM, *supra* note 52, at 12

Early Canadian courts received conflicting messages from the Judicial Committee of the Privy Council. In *Trinidad Asphalt Co. v. Ambard*,<sup>59</sup> the Privy Council ruled that a party could recover damages from a neighbor who ascertained asphalt by digging a trench up to the property divide, thus permitting asphalt located on the adjoining property to flow into their property.<sup>60</sup> In effect, the Privy Council suggested that one did not need to reduce to possession a substance that naturally migrates in order to have ownership, or as in this case, to receive damages.<sup>61</sup> This position was contradicted in *U Po Naing v. Burma Oil Co.*,<sup>62</sup> when the Privy Council rejected the creation of an analogy between natural gas and water, instead holding that for natural gas to be owned, one had to reduce the gas into possession, not merely have it present on or under one's property.<sup>63</sup> Scholars have suggested that the different outcomes of these two cases may have been rooted in the distinction between the ability to see the migration, as in the case of asphalt, and the inability to witness the migration, as would be the case with either gas or the majority of oil.<sup>64</sup>

The American position on this subject was convoluted, with states taking divergent positions from each other.<sup>65</sup> As noted by Lord Porter, two

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("Privately owned minerals are the exception rather than the rule."). The important consideration is at all times the point of vestment and the nature of the original grant to the owner was in fee simple. *See id.* at 12–13 (describing the nature of such grants). By way of an example, ninety percent of all minerals (oil and gas) in the province of Alberta are owned by the Crown, with the historical predecessors of the Hudson's Bay Company and the Canadian Pacific Railway owning much of the remaining ten percent. *See id.* at 14 ("In Alberta, only 10 per cent of the mineral rights are in private hands, and that figure includes substantial holdings by both the corporate successors of the Hudson's Bay Company and the Canadian Pacific Railway Company."). But the number of privately held mineral titles that still exist, as well as the nature of mineral titles, make private transactions relevant and important issues. *See id.* at 14 ("In the light of the pattern of mineral holdings and the likely occurrence of oil and gas, the lease is of importance in Ontario, Manitoba, Saskatchewan, and Alberta. . . . Canadian lawyers, regardless of where they practice, may still find themselves confronted with . . . the oil and gas lease, since freehold mineral titles follow their owners wherever they move.").

59. [1899] A.C. 594 (P.C.) (appeal taken from Trinidad and Tobago).

60. *See id.* at 601 (permitting an injunction for the particular method of retrieving pitch).

61. *See id.* at 599 (rejecting a requirement of appropriation for ownership).

62. (1929) L.R. 56 (Ind.App.) 140 (appeal taken from Burma).

63. *See id.* (declining to prevent retrieval of natural gas obtained in conjunction with rightful retrieval of petroleum).

64. *See* LUCAS & HUNT, *supra* note 51, at 6 ("[T]he Judicial Committee concluded in *Trinidad Asphalt Co. v. Ambard* that asphalt, though subject to migration like water, could be owned in place. . . . [T]he distinction between unseen and uncertain migration of the substance within the reservoir and open observable migration is also implicit.").

65. *See* Borys v. Canadian Pac. Ry. Co., [1953] A.C. 217 (P.C.) 224 (appeal taken from Alta.) (noting differing American views on whether "fugacious elements" needed to be reduced to possession for ownership).

competing theories existed.<sup>66</sup> First was the notion that oil and gas, like wild animals, did not belong to the owner of the property until reduced into possession, so-called non-ownership with the rule of capture.<sup>67</sup> This concept contrasted with the argument that oil and gas *in situ* rightfully belonged to the owner; however, given the natural possibility of migration and the effect of localized drilling, no action could be held for any loss of this oil.<sup>68</sup> This position has been summarized as the “qualified ownership position.”<sup>69</sup> Canadian courts were in effect left with few definitive legal principles as to who owned oil and gas *in situ* when the matter came before them in *Borys v. C.P.R. and Imperial Oil*, and again in *Berkheiser v. Berkheiser*.<sup>70</sup>

In *Borys*, the court faced a unique factual situation and an interesting question: Who owns the natural gas contained in oil?<sup>71</sup> During the settlement of western Canada, the government provided vast tracts of land to the Canadian Pacific Railway to encourage development.<sup>72</sup> These transfers included all mineral rights, which included the right to any oil, but not to natural gas.<sup>73</sup> In 1905, the Canadian Pacific Railway began selling various portions of its properties to individuals, but retained the rights to any minerals or oil found, along with a right to retrieve any such substances.<sup>74</sup> By way of various transactions, the property at issue in this case was purchased by Simon Borys in 1906, and ended up in the

66. *See id.* (highlighting competing views of whether fluid resources belong to the owner of the land in which they are found).

67. *See id.* (“Some maintain that gases, oils and waters being fugacious elements do not belong to the owner of the soil in which they are found, not even when *in situ*: like wild animals they are only subject to ownership when reduced in possession.”).

68. *See id.* (“The other view is that so long as they remain *in situ* they belong to the owner of the soil but are subject . . . to defeasance in case they move elsewhere before the owner of the soil reduces them into possession.”).

69. *See* LUCAS & HUNT, *supra* note 51, at 7 (highlighting the uncertainty of ownership in oil production).

70. [1957] S.C.R. 387, 390 (Can.) (acknowledging the variance in opinions in characterizing petroleum and natural gas, but declining to decide the issue).

71. *See* *Borys v. Canadian Pac. Ry. Co.*, [1953] A.C. 217 (P.C.) (appeal taken from Alta.) (deciding whether gas, separated from oil as a result of high pressure and temperature, is a separate material from the oil or a part of the oil).

72. *See About Freehold Mineral Rights*, FREEHOLD OWNERS ASS'N, <http://www.fhoa.ca/about-freehold-mineral-rights.html> (last visited Jan. 26, 2014) (discussing the grant of farm-sized plots of land to those who planned to develop “prairie homesteads”) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

73. *See id.* (stating that the government retained the rights to natural gas on property that it sold or granted after 1887).

74. *See Borys*, [1953] A.C. at 217 (reserving rights to valuable resources when conveying land).

possession of Michael Borys, in fee simple, by 1947.<sup>75</sup> Given the geology of the area, the oil which the Canadian Pacific Railway had now authorized Imperial Oil to collect from Mr. Borys's property was wedged between a subterranean body of water and a body of gas.<sup>76</sup> Moreover, the oil itself contained gas that could be extracted at the surface, but the initial process of removing the oil would most likely negatively impact the larger body of free gas which was sitting on top, making it uneconomical to extract the gas.<sup>77</sup> Lord Porter summarized the legal problem in this way:

The particular substance of which Mr. Borys claims to be owner, and to interference with which he objects, is the gas contained in a cap situated on top of the petroleum (which may be called "free gas") and also any gas which is in solution in the petroleum under his land or which may be withdrawn from under his land. The problem arises in this way: The material in the container is subjected to high pressure and a high temperature with the result that what would be gas at a normal surface temperature and at such a pressure as would be met with at ground level becomes dissolved in the petroleum and is found in solution with it in liquid form. *Petroleum, not gas, has been reserved, and the appellant claims that all the gas on his premises belongs to him whether it be found in solution in the petroleum or in a free state.*<sup>78</sup>

The court was thus required to answer the questions of who owned oil and gas *in situ* and whether Mr. Borys should be deprived of something he rightfully owned by the process of removal.<sup>79</sup> The Alberta trial court granted Mr. Borys the permanent injunctive relief he sought and suggested that he was the owner of the gas as the owner of the property in fee simple.<sup>80</sup> The court used the vernacular, as opposed to the scientific

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75. *See id.* ("By a series of transactions . . . the land was transferred to . . . Michael Borys, and . . . he was registered as owner of an estate in fee simple of the property in question.")

76. *See id.* (describing the water, oil and gas as within a "container" blocked from the surrounding rock, but movable within the container).

77. *See id.* at 218 (stating that removal of the oil could cause a decrease in pressure, which is partially the reason for the free gas's existence).

78. *Id.* (emphasis added).

79. *See id.* (noting that the gas at ground level pressure and temperature would be dissolved into the petroleum).

80. *See id.* at 220 (finding that Borys was the owner of the gas regardless of whether the gas was in a free state or dissolved within the petroleum).

meaning of the word “petroleum,” to determine that petroleum was all hydrocarbons in liquid form.<sup>81</sup> The Court of Appeals for Alberta, then known as the Alberta Supreme Court, found that the oil was the property of the Canadian Pacific Railway, but that the gas did indeed belong to Mr. Borys.<sup>82</sup> In effect, the appellate court accepted the lower court’s vernacular definition, thereby giving life to the right of Imperial to work and recover the oil, even where that would impact Mr. Borys’s gas claim.<sup>83</sup> The Privy Council, to whom further appeal was made, agreed with the appellate court and held that while natural gas *in situ* was the property of the owner, the right to work the land for the oil, which was not disputed, did not also mean that measures must be taken to ensure that the gas was removed and delivered to Mr. Borys’s satisfaction.<sup>84</sup> The loss of the gas was seen as an unfortunate side-effect of the right to work the property under the original agreement under the “rule of capture.”<sup>85</sup> Today, this effect has been lessened by various new provincial statutes.<sup>86</sup>

There has been much criticism of the reasoning in *Borys*.<sup>87</sup> For one, it is unclear exactly how the Court of Appeals or the Privy Council came to the assumption that oil and gas *in situ* was the property of the owner in fee simple, subject only to any loss which may occur as a result of the migratory nature of the fossil fuel.<sup>88</sup> More problematic, in a legal sense, was the failure of the court to fully consider the impact of the differences that

81. See *Anderson v. Amoco Canada Oil and Gas*, 2004 SCC 49, para. 22 (Can.) (using the vernacular term to determine rights to the gas and petroleum).

82. See *Borys*, [1953] A.C. at 220 (finding that natural gas and petroleum are separate substances, and all gas not owned by the Canadian Pacific Railway was owned by Borys).

83. See *id.* (holding that the Canadian Pacific Railway was entitled to recover all petroleum that belonged to them through reasonable methods, even if extraction interfered with the gas belonging to Borys); see also *Amoco*, [2004] S.C.R. at [23] (explaining how the appellate court agreed that the vernacular meaning of petroleum should be used, but disagreed on how this meaning limited the defendant’s rights to the petroleum).

84. See *Borys*, [1953] A.C. at 225 (describing Borys’s right to the natural gas as a residual right, and thus not willing to place Borys’s right of extraction above that of the Canadian Pacific Railway, if the Canadian Pacific Railway was using the usual methods of extraction).

85. See *id.* (“Even if it be conceded that the respective rights of the two parties are to work for and recover each his own property, . . . it does not follow that neither can act without the consent of the other and that only by mutual agreement can they work at all.”).

86. See *LUCAS & HUNT*, *supra* note 51, at 7 (“The rule of capture aspect of *Borys* is mitigated by statutory conservation requirements, such as well spacing and proration of production among owners in a common reservoir.”).

87. See Bruce M. Kramer & Owen L. Anderson, *The Rule of Capture and its Consequences*, 33 ENVTL. L. 899, 941 (2005) (“[T]he Privy Council failed to clarify precisely ‘when’ the physical nature of hydrocarbons, as liquid or as gas, was to be determined for the purpose of establishing ownership.”).

88. See *Borys*, [1953] A.C. at 217 (finding that Borys owned the gas in fee simple).

exist between corporeal and incorporeal interests.<sup>89</sup> If the interest is held to be corporeal, as is the case given that the court held oil and gas could be owned *in situ*, then it is a possessory interest and is not severable from the land.<sup>90</sup> However, if the interest is held to be incorporeal, it is non-possessory and must pass by way of grant, which is a better reflection of both the business realities of oil and gas and the desire of the landowner.<sup>91</sup> In short, “the problem with making this assumption [finding oil to be a corporeal interest] is that it does not reflect the true intention of the granting instrument which is a right to recover and not to possess the strata.”<sup>92</sup> This problem of application has been most soundly rejected by subsequent Canadian case law, which gives effect to commercial motivations of the parties, rather than holding fast to ancient creations of property law.<sup>93</sup> In *Saskatchewan Minerals v. Keyes*,<sup>94</sup> Justice Laskin stated succinctly in his dissent that the court should reject the use of anachronistic categories of property law in favour of new commercial concepts.<sup>95</sup> The Supreme Court in *Bank of Montreal v. Dymex*<sup>96</sup> readily accepted and approved this position, ruling that in the context of oil and gas royalties, the prohibition against incorporeal hereditaments was inapplicable.<sup>97</sup>

The recent case of *Anderson v. Amoco Canada Oil and Gas*<sup>98</sup> affirmed the holding from both *Borys* and *Keyes*. As in *Borys*, *Amoco* dealt

89. See BLAKE, CASSELS & GRAYDON, LLP, OVERVIEW OF OIL & GAS LAW IN CANADA 5 (undated) [hereinafter BLAKES] (“The conclusion reached in *Borys* assumed gas was owned *in situ* and did not take into account the conceptual difference that exists between corporeal and incorporeal interests.”) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

90. See *id.* (“If the court is prepared to find that oil and gas can be owned *in situ*, as they did in *Borys*, then the interest would be corporeal and ownership would extend to the entire strata and continue after the minerals had been severed from the estate.”).

91. See *id.* (noting that transferring a corporeal interest “does not reflect the true intention of the granting instrument, which is the right to recover oil and gas and not the right to possess the strata where those substances are located”).

92. *Id.*

93. See, e.g., *Bank of Montreal v. Dymex Petroleum Ltd.*, 2002 SCC 7, para. 21 (Can.) (“A royalty which is an interest in land may be created from an incorporeal hereditament such as a working interest or a *profit à prendre*, if that is the intention of the parties.”).

94. [1972] S.C.R. 703 (Can.).

95. See *id.* at 722 (Laskin, J., dissenting) (“The language of ‘corporeal’ and ‘incorporeal’ does not point up the distinction between the legal interest and its subject-matter. On this distinction, all legal interests are ‘incorporeal,’ and it is only . . . a long history that makes it necessary . . . to examine certain institutions of property . . . through an antiquated system . . .”).

96. 2002 SCC 7 (Can.).

97. See *id.* at para. 21 (accepting Justice Laskin’s reasoning in *Saskatchewan Minerals* that “the prohibition of the creation of an interest in land from an incorporeal hereditament is inapplicable”).

98. 2004 SCC 49 (Can.).

with the issue of “split title lands,” those in which the Canadian Pacific Railway had sold the land but retained the rights to any petroleum.<sup>99</sup> Again, the court adopted the position that the hydrocarbon could be owned *in situ*, as a common sense proposition: how could the parties have contracted for the substance without accepting that one party had ownership?<sup>100</sup> Moreover, the court held that this ownership was determined at the point and in the state at which the hydrocarbon existed in the subterranean cavity, before human contact.<sup>101</sup> Significantly, this decision precludes arguments that address phase shift, the change in state that oil and gas experience when drilling alters the internal pressure and temperature of the reservoir.<sup>102</sup>

The holding in *Amoco* serves to provide clarity on the points initially raised in *Borys*.<sup>103</sup> For one, the court is clear that the term petroleum in these types of oil and gas reservations only considers liquid hydrocarbon; the property owner owns any free natural gas.<sup>104</sup> The *Amoco* holding also clarifies that ownership is determined by the way the hydrocarbon exists in the ground before human contact and that phase shifts are incidental.<sup>105</sup> Finally, the court indicated that where the process of extracting a liquid hydrocarbon inadvertently includes a gaseous hydrocarbon, the implied right to work and produce entitles the producing party to the benefit of the gaseous hydrocarbon.<sup>106</sup>

In conclusion, the issue of who owns oil *in situ* is unclear. Cases like *Borys* and *Amoco* suggest that oil and gas may be owned *in situ*. *Amoco*

99. *See id.* at paras. 4–5 (seeing not only the value in increased settlement, but also the value in the natural resource under the land which Canada gave full title to the Canada Pacific Railway).

100. *See id.* at paras. 35–39 (giving maximum effect to the contract originally agreed to by the parties).

101. *See id.* at para. 25 (“When the contracts for the transfer of land in *Borys* . . . were agreed to, the pools of hydrocarbons under the lands had not been disturbed. *Borys* should be read as indicating it is the initial conditions of the pool that govern the relative ownership between the parties . . .”).

102. *See id.* at para. 34 (“[P]etroleum’ includes all hydrocarbons in liquid phase under the tract of land prior to any development. Phase changes that occur once a pool is drilled into do not affect the ration of hydrocarbons the petroleum owner and the non-petroleum owner are entitled to.”); *id.* at para. 19 (noting that drilling can cause a change in temperature and pressure, and thus can change the “phase” of the resource).

103. *See Borys v. Canadian Pac. Ry. Co.*, [1953] A.C. 217 (P.C.) 224 (appeal taken from Alta.) (deciding between differing views of whether fluid resources need to be reduced to possession for ownership).

104. *See Amoco*, 2004 SCC at para. 19 (agreeing that petroleum owners are entitled to liquid hydrocarbons and non-petroleum owners are entitled to gas phase hydrocarbons).

105. *See id.* at para. 19 (noting that drilling into the container can change the phase of the natural resources found inside).

106. *See id.* at para. 25 (indicating that reserving petroleum includes an implied right to work and produce the product).

is also a necessary condition precedent for the *profit à prendre* classification (discussed below), which has been readily applied to the oil and gas lease.<sup>107</sup> The courts, however, have rejected a single classification or agreed understanding of how oil or gas is owned; the *in situ* ownership argument has fallen in disfavor given the attempts to use it as a means of preventing companies from collecting the fruits of their labor when wells have produced both oil and gas.<sup>108</sup> The courts, in conjunction with statutes, have been forced to move away from any ownership theory based on the rule of capture, which in effect suggests that until reduced to possession, no ownership exists.<sup>109</sup> The realities of oil and gas exploration make such a position inefficient; such a position would lead to a rush on the production and exploration of oil, necessarily mandating multiple wells.<sup>110</sup> Multiple wells significantly reduce pressure and lower the recoverable amount of hydrocarbons or exponential increase the cost by making the process of oil extraction more difficult.<sup>111</sup> Moreover, provinces such as Alberta have enacted legislative prohibitions on the number and proximity of wells that may be dug to prevent this very problem.<sup>112</sup> Courts have been able to address the legal issues of oil and gas without relying on a concise theory of ownership.<sup>113</sup> They have achieved this primarily through legal use of *profit à prendre* and the oil and gas lease, coupled with an acceptance of on-the-ground industry realities.

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107. See BLAKES, *supra* note 89, at 5–6 (discussing the implications of Canadian case law that treats the oil and gas lease as *profit à prendre*).

108. See *Amoco*, 2004 SCC at para. 36 (stating that broad *in situ* ownership theory is irrelevant in this case because the parties choose to divide their interests by contract, and “when the substance, which was not in their possession at the time of the contract, is reduced to possession, the date and terms of the contract govern their relative entitlement”).

109. See Oil and Gas Conservation Act, R.S.A. 2000, c. O-2 (Can.) (establishing governance of “all operations for the production of oil and gas”); see also *Amoco*, 2004 SCC at para. 37 (stating that the rule of capture has been “subsumed by the regulatory environmental reserve and preservation provisions of legislation such as the Oil and Gas Conservation Act”).

110. See *Amoco*, 2004 SCC at para. 36 (“The unhindered application of this rule would lead to a race to produce, and . . . this uncontrolled development actually reduces overall hydrocarbon recovery . . .”).

111. See BOTT, *supra* note 7, at 25 (“Operators of adjacent wells tapping the same reservoir would rush to produce as much as they could . . . . This practice, called competitive drainage, caused a premature loss of reservoir pressure and left large quantities of potentially recoverable petroleum in the ground.”).

112. See Oil and Gas Conservation Act, R.S.A. 2000, c. O-6 (Can.) (discussing Alberta’s regulation of oil well regulation).

113. See LUCAS & HUNT, *supra* note 51, at 5–6 (stating that the competing theories of ownership suggest a lack of reliance on one particular theory).



### B. The Profit à Prendre

Building upon the business realities of oil and gas exploration and the difficulties with the legal position of ownership found in *Borys*, the Supreme Court opted for a third way. In *Berkheiser v. Berkheiser*,<sup>114</sup> the court applied the legal concept of *profit à prendre* to the oil and gas lease, thereby creating an incorporeal interest.<sup>115</sup> *Profit à prendre* is a concept of property law that grants a person the right to “take something off another’s land including such things as timber, mineral or wildlife.”<sup>116</sup> The Supreme Court has held that the *profit à prendre* necessarily implies both a right to the thing or substance, and the ancillary surface right required to access it.<sup>117</sup> In *Berkheiser*, the Court came to the determination that given the “factual conception,” the central issue was not ownership of oil or gas *in situ*, but rather the effect of the proprietary interest after the substance is “under control.”<sup>118</sup> Therefore, the practical implications could be properly understood as a *profit à prendre*.<sup>119</sup> The Court’s position has been characterized as follows: “[u]nder such instruments the title to the substances as part of the land remains in the owner and upon it is imposed the incorporeal right which [is granted in the lease].”<sup>120</sup>

The subtle yet important distinction that the court made in *Berkheiser* is the recognition that the oil and gas lease is not really a lease at all. As John Bishop Ballem Q.C. writes:

One of the more engaging characteristics of the oil and gas lease is that under the common law it is not a lease at all. The conventional property lease contemplates merely use of property and the return of it to the lessor at the end of the

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114. [1957] S.C.R. 387 (Can.).

115. See BLAKES, *supra* note 89, at 5 (“The holder of a *profit à prendre* does not own the specified substance *in situ*, as the right conveyed is incorporeal in nature.”).

116. MARY JANE MOSSMAN & WILLIAM FLANAGAN, PROPERTY LAW: CASES AND COMMENTARY 544 (2004).

117. See *Right of British Columbia v. Tener*, [1985] 1 S.C.R. 533, para. 11 (Can.) (concluding that the respondent’s interest was “one integral interest in land in the nature of a *profit à prendre* comprising both the mineral claims and the surface rights necessary for their enjoyment”).

118. See *Berkheiser v. Berkheiser*, [1957] S.C.R. 387, 391 (Can.) (stating that because of the difficulty of the factual conception, the “notion of ownership *in situ* is not the likely thing to be suggested to the mind of any person interested”).

119. See BALLEM, *supra* note 52, at 15 (stating that the Supreme Court characterized the oil and gas lease as a *profit à prendre* in *Berkheiser*).

120. See *id.* at 17 (“[A]n instrument creating such a right was a *profit à prendre* and that under such instruments the title to the substances as part of the land remains in the owner and upon it is imposed the incorporeal right which the termination of the lease extinguishes.”).

term in a virtually unchanged state, expecting only reasonable wear and tear. *The rights granted under the oil and gas lease are of an entirely different order and nature since the lessee, in order to enjoy the grant, must have the rights to possess and remove the minerals.*<sup>121</sup>

This legal formulation addresses the concerns arising out of the unique position oil and gas property interests occupy relative to other property interests. For example, where an oil and gas lease is characterized as a *profit à prendre*, there is no voiding for uncertainty of term.<sup>122</sup> Early Canadian litigation often sought to invalidate the actions of oil companies upon this theory, arguing that the uncertainty of the length of time required to extract the oil meant that the lease should be void for uncertainty of term.<sup>123</sup> The court's holding in *Berkheiser*, that the oil and gas lease created a *profit à prendre*, effectively neutralized this argument; such a lease may no longer be struck down for uncertainty.<sup>124</sup>

### C. The Oil and Gas Lease (Lifeblood of an Industry)

Oil and gas law is a “derivative legal subject” in that it is not a unique area of law with its own principles, but the modified application of numerous areas including tort, contract, property, patent, and constitutional law.<sup>125</sup> The most important item in the tool of the modern oil and gas company is arguably not the derrick, but the oil and gas lease. Those concerned with legal ramifications do not always view the lease favorably.<sup>126</sup> John Bishop Ballem writes that the oil and gas lease is a “jumbled collection of rights, grants, concessions, and obligations between

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121. *Id.* at 15 (emphasis added).

122. *See id.* at 17 (“One effect of characterizing oil and gas lease as a *profit à prendre* has been to defeat attacks based on uncertainty of terms.”).

123. *See, e.g.,* *Crommie v. California Standard Co.*, (1962) 38 W.W.R. 447 (noting the landowner's argument that his relationship was one of a tenancy rather than a *profit à prendre*); *see also* BALLEM, *supra* note 52, at 17 (“It is impossible to predict how long the substances may be taken from lands covered by a lease because the lease continues in force by its own terms until production ceases. Consequently, it has been argued that a lease is void for uncertainty of term.”).

124. *See* BALLEM, *supra* note 52, at 17 (stating that the *Berkheiser* ratio concluded that an oil and gas lease was really a *profit à prendre* and therefore the lease could not be struck down on that basis).

125. *See* LUCAS & HUNT, *supra* note 51, at 1 (arguing that oil and gas law is a “derivative legal subject” because it involves multiple areas of law).

126. *See* BALLEM, *supra* note 52, at 6 (discussing the complications with the oil and gas lease).

the owner of minerals and the would-be developer of them.”<sup>127</sup> But this “jumbled collection” provides the best approach for all parties.<sup>128</sup> The owner of the property can keep his or her land while receiving compensation, and the corporation can remove minerals without the expense and futility of buying large tracts of property.<sup>129</sup> In the words of Alastair Lucas, Dean of Law at the University of Calgary, the oil and gas lease is the “lifblood of the industry.”<sup>130</sup>

The modern lease is designed to address two specific groups of rights: mineral rights and surface rights.<sup>131</sup> It is worth noting that this is a departure from the early case law, namely *Borys*, which viewed the surface right as an implied and necessary condition of the mineral rights.<sup>132</sup> One could not effectively exercise a right to oil if one was prohibited from accessing it.<sup>133</sup> This position has been modified by numerous statutory provisions that have divorced the two, requiring an interested party to ascertain rights to the surface and that which lies beneath.<sup>134</sup> Where such rights are contained in the same person, as is often the case, the statutes require that separate compensation be given for the requisite surface rights apart from and independent of any compensation provided for mineral rights.<sup>135</sup> In Canada, a boilerplate lease is typically used: the Canadian Association of Petroleum Landmen (CAPL) has drafted a series of leases, the most recent being the CAPL 99, which serve as the *de facto* oil and gas

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127. *Id.*

128. *See id.* (explaining why the lease approach is the approach that best meets the requirements of all parties).

129. *See id.* (“[The lease] protects the interest of the mineral owner by imposing certain time limitations within which the operator must explore the lands or lose the lease, and it preserves for the owner a continuing interest in the minerals by reserving a royalty.”).

130. *See* LUCAS & HUNT, *supra* note 51, at 143 (“It is no overstatement to say that contracts are the lifblood of the petroleum industry.”).

131. *See id.* at 87–88 (discussing the modern surface interests that did not exist at common law).

132. *See id.* at 87 (“Historically, grants of mineral interests normally carried with them surface rights . . .”).

133. *See id.* at 87–88 (discussing access to minerals and its implications).

134. *Compare* Alberta Surface Rights Act, R.S.A. 2000, c. S-24 (Can.) (regulating surface rights), *and* Saskatchewan Surface Rights Acquisition and Compensation Act, R.S.S. 1978, c. S-65 (Can.) (regulating the acquisition of surface rights), *with* Petroleum and Natural Gas Act, R.S.B.C. 1996, c. 361 (Can.) (regulating the exploration and extraction of subsurface oil and natural gas).

135. *See* LUCAS & HUNT, *supra* note 51, at 87 (“The surface rights statutes require that, where surface and mineral rights are vested in the same owner, any person acquiring the mineral rights must provide separate compensation for the surface rights.”).

leases used by the industry.<sup>136</sup> Despite the choice of lease, common elements and considerations must be addressed.

Each lease requires a granting clause.<sup>137</sup> In the first section, the lessor (property owner) grants the lessee (oil company) rights to the substance(s) to be searched for and reduced to possession—in effect an “outright grant of the substances.”<sup>138</sup> Recent amendments to the CAPL 99 have included the right to inject into the land any substances that would be helpful in the recovery of hydrocarbons, such as water or carbon dioxide (CO<sub>2</sub>).<sup>139</sup> This fact has future ramifications for the creation and use of carbon capture and sequestration facilities aimed at reducing CO<sub>2</sub> emissions.<sup>140</sup> The granting clause is the clearest example of how and why the oil and gas lease is a *profit à prendre*; the lessor grants to the lessee the right and privilege to enter the land, search it, and take whatever specified mineral it finds.<sup>141</sup> It remains to be seen whether the addition of water or CO<sub>2</sub> into the property would affect the lease’s characterization as a *profit à prendre*.

The second clause of importance in any lease for oil and gas is the *habendum* clause, which sets out the duration of the various terms and the conditions under which the lease will either terminate or continue.<sup>142</sup> Under the primary term of the *habendum* clause, an oil company can lock up or secure a tract of land without any further action for a set number of years.<sup>143</sup> This is an effective and valuable tool for companies, allowing them to secure rights to potentially vast quantities of oil or gas while providing time to assess market conditions, arrange financing, and secure well-related

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136. See BLAKES, *supra* note 89, at 8 (“Although the latest version of the CAPL lease (the 1999 CAPL lease) is widely used today, older CAPL leases and conventional leases are still in use . . .”).

137. See BALLEM, *supra* note 52, at 120 (explaining the necessity of a granting clause).

138. See *id.* at 118–19 (“[T]hey confer upon the lessee the exclusive right and privilege to ‘explore, drill for, win, take, remove, store and dispose of the leased substances’ . . . . For all practical purposes, the lease does not grant any rights to use the surface . . .”).

139. See *id.* at 117–18 (discussing how CAPL 99 uses a broad definition of “leased substance” so that it may apply regardless of whether the owner owns both the petroleum and natural gas or just the natural gas).

140. See BOTT, *supra* note 7, at 37 (explaining potential issues that arise from injections of water and carbon dioxide into the earth).

141. See BLAKES, *supra* note 89, at 9 (“[T]he granting clause grants to the lessor the right to prospect for and remove the specified minerals.”).

142. See BALLEM, *supra* note 52, at 149–51 (discussing the standard provision found in conventional Canadian leases dealing with the terms and conditions concerning termination of the lease).

143. See *id.* at 150–52 (explaining the effect that a *habendum* clause has on an oil and gas lease).

resources.<sup>144</sup> Every *habendum* clause will also contain provisions for a secondary term that is related to production.<sup>145</sup> Such a clause automatically extends the lease when and where production is occurring or where a well has been “shut in.”<sup>146</sup> The use of two terms is an effective way to balance the rights and needs of both parties. The lessor is protected by the negotiated length of the primary term, which defines the period in which his or her property will be encumbered by exploration or actual drilling, and the lessee is protected by the secondary term, which ensures it will be able to keep and capitalize the lease after having made the initial investment.<sup>147</sup> Because this term is for an unknown duration, a conventional lease would fail for uncertainty, but this is not a consideration under the *profit à prendre*.<sup>148</sup>

What constitutes production under a *habendum* clause, and therefore activates and sustains a secondary term, is more problematic. A well needs to be productive during the primary term in order to engage the secondary term and permit a lessee to fully recoup costs.<sup>149</sup> Where a well fails (dry well), or drilling and extraction is completed within the primary term, then the matter is simple—the lease terminates at the end of the primary term and each side merely walks away.<sup>150</sup> When a well is producing beyond the primary term, however, the requirements for sustaining the lease in the secondary term become more complicated.<sup>151</sup> Some Ontario cases have suggested that a well should be considered

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144. See BLAKES, *supra* note 89, at 9 (stating that a lease has a primary term, usually one to five years, in which it does not have to be productive).

145. See BALLEM, *supra* note 52, at 129 (“If the term were for a fixed period of years and nothing more, the lease could terminate during the height of production, a state of affairs that would be unacceptable from the lessee’s point of view. Hence, [a secondary term sustains the lease] if the leased substances are being produced.”).

146. See *id.* at 188 (noting that “shut in” clauses allow an oil and gas lease to remain in effect even if the well is not producing).

147. See *id.* at 127–33 (describing the differing rights and obligations of both the lessor and lessee in a *habendum* clause).

148. See *id.* at 152 (explaining various forms of payment because of the unknown duration of the lease).

149. See *id.* at 134–35 (discussing the difficulties with sustaining continuous production).

150. See *id.* at 157 (“In the case of a dry hole or a well becoming unproductive, the lessee will have met the drilling commitment . . . . When the primary term has elapsed, the lease would terminate for want of production.”).

151. See, e.g., *Kensington Energy Ltd. v. B & G Energy Ltd.*, 2008 ABCA 151 (Can.) (finding that a “shut in” well that was producing did not terminate the lease because annual “shut in” payments were made to the lessor under the terms of the contract).

“producing” when and where it results in “paying quantities.”<sup>152</sup> Such an approach is difficult to apply in more active and mature oil jurisdiction such as Alberta.<sup>153</sup> In such places, continuous production is rarely a reality given that wells are often inoperative for periods of time to allow for maintenance, to account for an excessive amount of extraction that exceeds quotas, or due to volatility in oil and gas markets.<sup>154</sup>

The leading case on the matter of production as it pertains to the *habendum* clause is *Freyberg v. Fletcher Challenge Oil and Gas*.<sup>155</sup> In this case, a well (the 6-3 well) was drilled in 1978 and proved to be a strong producer of natural gas.<sup>156</sup> But insufficient infrastructure for transporting the gas led the well to be immediately “shut in,” to be used at a later date.<sup>157</sup> The 6-3 well re-opened in 1998, and in the intervening years two other wells actively produced in the area, seemingly associated with the same reservoir as the 6-3 well.<sup>158</sup> Such facts would suggest that the 6-3 well was capable of production at a much earlier point, and that the landowner was correct in seeking an end to the secondary term.<sup>159</sup> In short, the case turned on whether or not the lease was valid or if the lengthy period of non-production resulted in its invalidation.<sup>160</sup>

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152. See *Stevenson v. Westgate*, [1941] 2 D.L.R. 471, 474 (Can. Ont. S.C) (providing a calculation for such quantities to be determined by the deduction of the amount of oil produced subtracted from the cost of operation).

153. See *Canada's Industry*, *supra* note 25 (describing Alberta as Canada's largest oil and natural gas producer).

154. See *BALLEM*, *supra* note 52, at 156 (providing additional reasons for periods of inactivity and the various court interpretations of the effect of such activity on the lease term). It should be noted that oil and gas leases will almost always contain what is termed a “shut in” clause. See *BLAKES*, *supra* note 89, at 13 (“[W]here a successful well has been drilled, but due to lack of infrastructure or market, the well cannot be put on production by the end of the primary term[,] . . . [a] shut-in clause allows the lease to suspend such a well and pay . . . in lieu of producing the well.”).

155. 2005 ABCA 46 (Can. Alta.).

156. See *id.* at para. 2 (explaining that the holder of the natural gas release had obtained “promising” test results).

157. See *id.* at para. 16 (“[A]fter drilling, Voyager shut the well in.”); Chris Simard, David Holub & Larina Taylor, *Lady Freyberg: Examples of How Contemporary Courts In Alberta Approach the Modern Business Realities of the Freehold Petroleum and Natural Gas Lease*, 46 ALTA L. REV. 299, 301 (2009) [hereinafter Simard et al.] (explaining that, despite strong tests for natural gas production, the 6-3 well was immediately shut-in for lack of localized infrastructure to support production).

158. See *Freyberg v. Fletcher Challenge Oil and Gas*, 2005 ABCA 46 at paras. 11–22 (describing the operations and production of nearby wells).

159. See Simard et al., *supra* note 157, at 302–03 (discussing the implications of the lessee's case).

160. See *id.* at 300 (arguing that the greater impact of the case was its instructive glimpse into how contemporary Alberta courts address modern business realities in the context of robust historical case law).

The Alberta Court of Appeal took the position that the entire case could be settled by determining whether there was an economically profitable market for the natural gas, the onus of which rested with the respondent gas company.<sup>161</sup> Without establishing such a market, the respondent could not rely on the deemed production clause that stated a “shut in well” was to be considered a producing well.<sup>162</sup> The court, for unclear reasons, accepted the evidence of one lay witness above all others.<sup>163</sup> The court viewed evidence from a junior reservoir engineer as proof that the well may have been economically viable in the past and therefore should not be protected by the shut in clause.<sup>164</sup> The court held that the lease was terminated.<sup>165</sup>

The court’s ruling in *Freyberg* is troubling because it represents a severe challenge to the business realities of the oil and gas industry. During the trial, Madame Justice Romaine advanced a brilliant application of the business judgment rule to the oil and gas industry, answering the question in light of whether or not the lessee (gas company) acted “honestly, prudently, on reasonable grounds and in good faith.”<sup>166</sup> This position should be applied, as it permits a more equitable footing for successor companies to make a defense against claims such as the case here.<sup>167</sup> In the fast-paced and changing world of oil and gas, it is not uncommon that a lease entered into in 1970 would now be under the control of a third, fourth, or even fifth company.<sup>168</sup> To expect that these later incarnations should be required to

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161. See *id.* at 306 (“If the respondents wish to rebut the argument that the lease has terminated they can do so by asserting there has been deemed production.”).

162. See *id.* at 307 (noting that the principles behind the onus rule demands that a party must prove the facts it has alleged in its pleadings, rather than considering the pleadings to be “mere formalities”).

163. See *id.* at 313 (highlighting two significant limitations to the lay witness’s evidence, including the fact that his work “only involved looking at one-half of the economics equation, namely reserve estimates,” and did not consider capital costs).

164. See *id.* at 314 (challenging the court’s conclusion and noting that “[w]ithout evaluating the ‘cost’ side of economics, it is difficult if not impossible to form an overall opinion about profitability”).

165. See *Freyberg* at para. 47 (“[F]ailure to produce, when economical and profitable to do so, results in termination of the lease . . .”).

166. See Simard et al., *supra* note 157, at 311–13 (showing how this approach “recognized the difficult business realities facing lessees and further recognized that the prospective determination of well economics is a sophisticated and highly subjective matter, one upon which reasonable parties could, and often do, hold different opinions”).

167. See *id.* at 316 (noting that many day-to-day decisions made by an oil or gas company are made with “less-than-perfect economic indicators,” leading to divergent opinions and conflicting evidence).

168. See *id.* (highlighting the compounded problems that result if “a current interest owner can be fixed with the business decisions of a predecessor in interest, but [the new owner] has no access to witnesses or evidence that might explain the predecessor’s decision”).

account for decisions made by previous companies is extreme. Moreover, the court seemingly opted to avoid recognition of the modern realities and business environment of oil and gas, choosing to instead apply antiquated legal principles to the situation.<sup>169</sup> As counsel in the *Freyberg* case noted:

[I]n the *First Trial Decision* and in the *Appeal Decision*, a tension is apparent between the “bright line” approach to validity in the historical case law and the devilishly difficult matter of determining when an economical or profitable market for gas did or did not historically exist for a given well.<sup>170</sup>

When one examines the patent aspects of oil and gas law, such a tension is again apparent.

#### *IV. Oil and Gas Patent Aspects*

The oil and gas industry is the perfect example of the tension between traditional legal concepts and fast-paced innovations. This Part will argue that the exclusion of business methods and professional skills from patentability should be re-examined and ultimately reconsidered in a world and industry that are increasingly information-orientated. It will begin with a brief overview of patent law as it applies to oil and gas, focusing specifically on the ways in which patent law is engaged. This will be followed by an examination of recent case law in both Canada and the United Kingdom. Lastly, it will argue that the limitations of patent law need to be addressed, especially in the context of oil and gas law, which has always had a problematic reception when forced into traditional legal categories.

It is trite to point out that intellectual property is increasingly important to the oil and gas industry.<sup>171</sup> Sophisticated computers and associated devices and processes “permeate” the industry today and are becoming vitally necessary as readily available oil and gas becomes

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169. *See id.* at 310 (“While that historical approach to lease termination may make sense in the context of many “traditional” lease termination cases . . . it is antithetical to the reality of a well economics case.”).

170. *Id.* (emphasis original).

171. *See generally* N. STEPHAN KINSELLA, INTELLECTUAL PROPERTY AS ASSETS IN THE OIL AND GAS INDUSTRY: WHAT ARE PATENTS, COPYRIGHTS, TRADEMARKS AND TRADE SECRETS, AND HOW DO YOU PROTECT THEM? (2008), available at <http://www.kinsellalaw.com/wp-content/uploads/publications/ipoilgas.pdf> (defining elements of intellectual property and their new roles in the oil and gas industry) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).



scarce.<sup>172</sup> Oil and gas exploration and production already use highly technical, patented technologies such as algorithms and related software for 3-D seismic data imagining, deep water exploration equipment, and sophisticated drill bits, guiding mechanisms, and other tools.<sup>173</sup> The patents that stem from such technologies are important assets to the modern oil and gas company.<sup>174</sup> These technologies, however, often represent traditional, and therefore easily patentable, subject matter.<sup>175</sup> As the oil and gas industry moves closer to becoming an information industry, the patent law needs to be flexible to foster and keep pace with innovation.<sup>176</sup>

#### A. Case Law

As noted, Canadian litigation regarding the patentability of oil and gas assets is generally subsumed within the normal operation of the patent regime.<sup>177</sup> A few interesting exceptions are worth noting. Perhaps the most famous case is *Schlumberger Canada Ltd. v. Canada (Commissioner of Patents)*,<sup>178</sup> which involved an application by Schlumberger to patent an algorithm that was used in the exploration of oil and gas.<sup>179</sup> By taking various measurements from a borehole (well), transferring this data to magnetic strips, and then subjecting the strips to algorithms on a computer, one could generate valuable information that was highly useful for predicting the location of hydrocarbons.<sup>180</sup> The Commissioner of Patents rejected the application, and the Federal Court of Appeals upheld that finding.<sup>181</sup> The patent failed because it was held to be an application of a mere scientific principle; a computer performing mathematical calculations

172. See *id.* at A-3 (adding that companies that have developed new and innovative exploration and production techniques, especially those protected by patent or trade secrets, stand to earn astronomical fortunes).

173. See *id.* (listing ways in which the oil and gas industry has employed high-tech processes in daily operations).

174. See *id.* (discussing oil and gas companies' highly protected intellectual property).

175. See *id.* at A-2 (highlighting the increased importance of patents with "the onset of the computer and microprocessor age").

176. See *id.* at A-3 ("The oil and gas industry has entered the high tech, computer age with vigor.").

177. See generally *id.* (reviewing the four main mechanisms of the traditional intellectual property regime and their impact on the oil and gas industry).

178. [1982] 1 F.C. 845 (Can. A.).

179. See *id.* at 846 (reviewing a rejected patent application that, in the eyes of the Commissioner, failed to meet the statutory requirements of an "invention").

180. See *id.* (explaining how this computer technique resulted in informational formats readable by humans such as charts, graphs, and tables of figures).

181. See *id.* (noting that the application was rejected because the applicant claimed a monopoly on a computer program and such an application was not an "invention" within the meaning of the statute).

that, if done by man, would only amount to a mental operation or abstract theorem, and as such would be incapable of patenting.<sup>182</sup> In determining *Schlumberger Canada*, Justice Pratte articulated a two-part test for the assessment of computer-related inventions: determining that the invention has been “discovered,” and then determining if the invention is patentable “irrespective” of the use of a computer.<sup>183</sup> As a proposition of law, *Schlumberger Canada* suggests that a method of doing business is not patentable where it amounts to mere scientific principle or abstract theorem.<sup>184</sup>

Schlumberger was also a party to a recent British patent ruling that involved the use of Electromagnetic Means (EM) to search for offshore or deep-water oil.<sup>185</sup> In *Schlumberger Holdings Ltd. v. Electromagnetic Geoservices*, the court was faced with a patent challenge to the use of EM by a Norwegian company.<sup>186</sup> EM is a form of seismic reading that sends out a signal and then records and analyzes the reverberations.<sup>187</sup> In this context, EM provides oil companies a clearer picture as to whether a sedimentary rock formation contains water or oil, each having a unique reverberation.<sup>188</sup> The court summarized the invention being claimed: “the realization that the presence or absence of the refracted wave can act as a discriminator for hydrocarbons.”<sup>189</sup> In a 330-paragraph ruling, the court determined that all of the patents claimed by Electromagnetic Geoservices and challenged by Schlumberger were invalid as being obvious.<sup>190</sup>

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182. See *id.* at 847 (“[T]he fact that a computer is or should be used to implement discovery [of hydrocarbons] does not change the nature of that discovery.”); see also Emir Aly Crowne-Mohammed, *What Is an Invention? A Review of the Literature on Patentable Subject Matter*, 15 RICH. J.L. & TECH. 2, 17 (2009) (noting that mathematical algorithms, along with natural phenomena, cannot be patented).

183. See *Schlumberger Canada Ltd.*, 1 F.C. at 847 (describing the two-part test for assessing computer related inventions in detail).

184. See Teresa Cheung & Ruth Corbin, *Is There a Method to This Madness: The Persisting Controversy of Patenting Business Methods*, 19 I.P.J. 29, 40 (2005) (summarizing *Schlumberger Canada*’s holding that a “set of calculations in the domain of mathematical formulae and mental operations” is not patentable).

185. See *Schlumberger Holdings Ltd. v. Electromagnetic Geoservices*, [2009] EWHC (Pat) 58, [5]–[7], (Eng.) (explaining the process of oil exploration and stating that patents related to controlled-source electro-magnetic technology used this exploration).

186. See *id.* at [5]–[8] (explaining that seismic techniques were developed in the 1980s by geophysicists to identify potential hydrocarbon-bearing layers within sedimentary rock, greatly benefiting hydrocarbon extraction industries).

187. See *id.* at [8]–[9] (elaborating on the mathematical technique used to produce and analyze seismic readings).

188. See *id.* at [10] (describing the differing reverberations of each compound exploited by the seismic technology).

189. *Id.* at [43].

190. See *id.* at [303], [329] (considering the technology for which a patent was sought to be obvious over earlier technologies, preventing the court from reviewing the sufficiency

More troubling is the unique path that certain oil and gas patents have taken in the Alberta Courts. In *ARAM Systems Ltd. v. NovAtel Inc.*,<sup>191</sup> all assumptions about jurisdiction in patent litigation were seemingly thrown out the window. This case raises two key issues for the oil and gas observer. First, the technology in dispute was revolutionary in that it provided for the use of GPS in place of seismic survey, an expensive and time consuming mainstay in the search for hydrocarbons.<sup>192</sup> This new GPS system would allow the users to perform a variation of a seismic survey, using thirty different satellites that would not be inhibited by foliage on the ground or moderate cloud cover, and which would provide readings so precise as to be within centimeters and milliseconds.<sup>193</sup> The second astounding aspect of this case is that it involved a United States patent, as well as pending Canadian and European patents, yet the Alberta superior court, the Court of Queen's Bench, seized jurisdiction of the matter and heard the case over four months.<sup>194</sup>

At trial, the Court of Queen's Bench accepted the finding of the United States Patent and Trademarks Office that the invention was indeed inventive and deserving of patent protection.<sup>195</sup> The court then went on to determine that the ARAM employee did not have the knowledge to reduce the invention into practical form, so while he may have conceived the idea, he lacked the ability to put it into practice.<sup>196</sup> Accordingly, he was neither

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of the patent application); *see also* Gary Moss et al., *Just How 'Anti-patent' Are the U.K. Courts?*, 5 J. INTELL. PROP. & PRAC. 148, 148 (2010) (concluding that the reputation of the courts of England and Wales as being unfriendly to patentees appears to be false).

191. 2009 ABCA 262 (Can.).

192. *See id.* at para. 8 (describing the patent application, "which dealt with the use of GPS to deal with timing issues in seismic systems"); *see also* Timothy St. J. Ellam & Kara L. Smyth, *ARAM Systems Ltd. v. NovAtel Inc.: "Location, Location, Location": A Claim of Inventorship to a U.S. Patent*, MCCARTHY TETRAULT (Nov. 4, 2008), [http://www.mccarthy.ca/article\\_detail.aspx?id=4182](http://www.mccarthy.ca/article_detail.aspx?id=4182) [hereinafter *Location, Location, Location*] (adding that advancing from seismic technologies to GPS eliminates the most expensive aspect of resource exploration) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

193. *See* *ARAM Systems Ltd. v. NovAtel Inc.*, 2008 ABQB 441 (Can.), at paras. 1–2 (describing the need for seismic data and stating that GPS provides the most accurate information for the discovery of hydrocarbons).

194. *See id.* at para. 63 (stating that United States patent law applies to the case and will be applied); *see also* *Location, Location, Location*, *supra* note 192 ("The Alberta Court seized jurisdiction over the parties, and, after hearing four months of testimony from lay-witnesses, technology experts and foreign law experts, denied all of ARAM's claims.").

195. *See* *ARAM Systems Ltd.*, 2009 ABCA at para. 14 (stating that the trial court correctly relied on the United States Patent and Trademark Office's determination that the subject matter was inventive).

196. *See id.* ("Heidebrecht had a general notion that averaging data over a long period of time would be helpful, but did not understand the 'trick' was not to average the data, but to identify the carrier phase measurement in the received data which was 'garbage' . . .").

the inventor nor co-inventor, and any claim against the patent would necessarily fail.<sup>197</sup> The Alberta Court of Appeal agreed with the findings of the trial judge, and the Supreme Court of Canada refused leave to appeal.<sup>198</sup>

This case leaves the oil and gas industry, as well as those practitioners in the intellectual property field, with a nagging question: why did an Alberta Superior Court decide a foreign patent matter?<sup>199</sup> Counsel for NovAtel suggests three reasons for why this happened. First, both parties resided in Alberta.<sup>200</sup> While not suggested by counsel, Alberta has developed a robust and well-established oil and gas jurisprudence, which provides both corporations and their counsel a sense of confidence and consistency, adding to the desire to keep matters in the province.<sup>201</sup> The second reason suggested was that both parties had entered into a standard non-disclosure agreement (NDA) and had selected Alberta as the governing jurisdiction of the NDA.<sup>202</sup> Lastly, the alleged violation occurred in the province of Alberta, making Alberta the logical jurisdiction in which to try the case.<sup>203</sup> It is also interesting to note that the Alberta Court applied the seemingly more onerous United States law on derivation, and did not permit either side to avoid either a higher onus or a more difficult body of case law.<sup>204</sup>

### *B. Desired Reforms to Patent Law*

As noted above, much of the interplay between the law of patent and the oil and gas industry is contained within the normal parameters of

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197. See *id.* at para. 81 (stating that the trial judge concluded that because Heidebrecht did not have the knowledge to use the invention in practice, he did not invent it, and Heidebrecht was neither an inventor nor co-inventor).

198. See *ARAM Systems, Ltd. v. NovAtel Inc.*, S.S.C. No. 33351 (denying appeal from the Court of Appeal).

199. See *Location, Location, Location*, supra note 192 (stating that most observers wonder why the case was before the Alberta Queen's Bench).

200. See *id.* (stating that the parties were both Alberta residents).

201. See John Courtright & Shawn Denstedt, *Oil Sands Mining in Northern Alberta*, 50 ROCKY MTN. MIN. L. INST. 9-1, § 9.01 (2004) ("Alberta . . . has a well-established legislative, regulatory, and administrative framework favourable to the responsible development of its hydrocarbon resources.").

202. See *Location, Location, Location*, supra note 192 ("[T]he parties had entered into a non-disclosure agreement that contained a standard choice of jurisdiction clause, the choice being Alberta.").

203. See *id.* ("[T]he alleged misfeasance occurred in Alberta . . .").

204. See *ARAM Systems Ltd.*, 2008 ABQB at paras. 60–71 (outlining the standards and burden of proof applied by courts in the United States); see also *id.* ("[I]n this instance US law on derivation, including the standard of proof, was strictly applied to ARAM.").

the patent regime.<sup>205</sup> In the words of one author, there is no problem when it comes to patenting the “hard sciences.”<sup>206</sup> There is, however, greater need for change in the areas of patent protection regarding business methods and professional skills, both of which are becoming increasingly important in the search for dwindling hydrocarbons.<sup>207</sup> Indeed, as many of the world’s economies move away from an industrial focus, toward the era of the information economy, serious and valid concern exists as to whether or not the patent regime, and specifically the Canadian patent regime, will be able to adapt or whether it will be trapped in an effort to service an industrial complex that is becoming less and less prevalent.<sup>208</sup>

Moreover, the highly inventive steps are being found not on the mechanical or industrial side of the equation, but on the information and skill side.<sup>209</sup> The resulting dynamic is one in which the most innovative processes, and by extension the most lucrative to the company, are often not protected by the patent regime.<sup>210</sup> The vital *quid pro quo* of patent

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205. See *supra* Part IV.A (discussing the case law surrounding patents in the oil and gas industry).

206. See Emir Aly Crowne-Mohammed, *The Patentability of Professional Skills and Business Methods in Canada*, 5 J. INTELL. PROP. L. & PRAC. 119, 120 (2010) [hereinafter *Professional Skills*] (stating that patents are granted in the hard sciences regularly based on the Patent Act).

207. See Daniel R. Cahoy, Joel Gehman, & Zhen Lei, *Fracking Patents: The Emergence of Patents as Information-Containment Tools in Shale Drilling*, 19 MICH. TELECOMM. & TECH. L. REV. 279, 287 (2013) (“The world’s growing appetite for oil and gas has pushed exploration and production companies to expand the scale and scope of their operations in ways scarcely imaginable several decades ago.”); BP STATISTICAL REVIEW, *supra* note 46, at 9 (stating that current oil reserves will only meet demand for 52.9 years).

208. See Matthew Synnott, *Why Stop Now: The Availability of Business Method Patents in Canada*, 11 APPEAL REV. CURRENT L. & L. REFORM 73, 73–74 (2006) (stating that Canadian patent law should allow business methods to be patentable to accommodate the information economy).

209. See KINSELLA, *supra* note 172, at A-3 (“The oil & gas industry has entered the high tech, computer age with vigor. It employs a host of high-technology processes, such as: sophisticated algorithms and related software that process 3-D seismic data . . .”). In recent years, there has been a significant increase in the filing of oil and gas technology patents due to the necessity of protecting one’s proprietary intellectual property in an increasingly more competitive market. See Nia Williams, *Canada Oil Patent Suits Stir Fears of Technology Slowdown*, REUTERS (Mar. 26, 2014), <http://www.reuters.com/article/2014/03/26/us-oil-patents-analysis-idUSBREA2P1GX20140326> (“Canadian energy companies are filing four times more oil and gas technology patents than they did a decade ago.”) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

210. See Cheung & Corbin, *supra* note 184, at 32 (“There is reason to expect growing interest by companies in obtaining patent protection for business processes. Modern economies are increasingly driven by information flows and business services, and decreasingly dependent on manufacturing outputs . . .”); *id.* at 31 (“Business process patents present an emerging opportunity to Canadian companies for competitive advantage.

protection in exchange for full disclosure is being lost at precisely the moment that it is most needed, as the world enters the end of readily accessible hydrocarbons.

In this vein stands the business method where the mighty industrial process once existed. It is difficult to find a single or authoritative definition of what is meant by the term business method or business process.<sup>211</sup> Teresa Cheung and Ruth Corbin, however, have conducted an extensive review of the literature on point and offer the following concise summation:

For the purposes of patent analysis, an implicit understanding appears to have taken hold, that a business process is some sort of system or method for how information is obtained, managed and used in the course of carrying on a business or similar enterprise. “Information” in that context has wide scope for interpretation, and might refer, for example, to order data from customers, rules for carrying out internal activities, or pre-established sequences for undertaking a series of connected tasks.<sup>212</sup>

Where such business methods are implemented with a machine, there has been seemingly wide acceptance and agreement that patent protection should be extended.<sup>213</sup> That position is now under attack. In *Patent Application No. 2,246,933*, the Patent Appeal Board rejected the patent of Amazon for its “one-click” technology, denying a patent for a business method.<sup>214</sup>

Part of the rationale for this decision is the association that patent examiners have made between business methods and professional skills; Canadian courts have found that the latter is not patentable.<sup>215</sup> The

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Those companies which fail to protect sufficiently their own innovative processes, or fail to monitor what their competitors are doing face potentially significant business risks.”).

211. See Cheung & Corbin, *supra* note 184, at 135 (“Neither the courts, nor the Canadian Patent Office, nor the United States Patent and Trademark Office have expressly defined the term.”).

212. *Id.*

213. See *Professional Skills*, *supra* note 206, at 121 (citing cases that allowed patents for business methods when the methods were implemented by a machine).

214. See *Kaphan Patent Application No. 2,246,933*, 2009 LNCPAT 2, para. 196 (affirming the rejection of the patent); see also *Professional Skills*, *supra* note 206, at 121–22 (discussing the denial of Amazon’s attempt to patent the one-click method).

215. See Cheung & Corbin, *supra* note 184, at 37 (“Inventions that fall into the category of ‘professional skill’ have also come to be considered exclusions in Canadian jurisprudence.”).

professional skill exclusion is generally rooted in two bases.<sup>216</sup> First, professional skills fall outside the ambit of patent protection because they are not industry, trade, or commerce.<sup>217</sup> Second, a skill is an inherently individualistic element, so nothing can guarantee that the outcome will be reproduced, limiting the *quid pro quo* that a patent aims to encourage.<sup>218</sup> In Canada, the *Lawson v. Commissioner of Patents*<sup>219</sup> court excluded professional skills, rejecting a method for the efficient division of lands.<sup>220</sup> Through a tenuous argument, a connection has been made between professional skill and business method to sustain the prohibition on patentability against each.

Another troubling aspect of the prohibition against such patent protection is the fact that courts and patent examiners can potentially extrapolate prohibitions on patentability.<sup>221</sup> For example, the ruling in *Schlumberger Canada* (discussed above) could be relied upon to find that not only are algorithms and mathematical formula non-patentable, but also software is to be excluded, ostensibly by way of analogy.<sup>222</sup> The same is seen with the ruling in *Lawson*, which denied the patentability of a method for sub-dividing land,<sup>223</sup> but which has been subsequently applied to

216. See *id.* at 38 (“Two justifications have been given for the professional skills exclusion.”).

217. See Patent Act, R.S.C. 1985, c. P-4 (defining “invention” as “any new and useful art, process, machine, manufacture or composition of matter, or any new and useful improvement in [the same]”); Cheung & Corbin, *supra* note 184, at 38 (“[P]rofessional skill, such as that involved in a medical treatment, is considered to fall outside the field of industry, trade, and commerce . . .”).

218. See Cheung & Corbin, *supra* note 184, at 38 (stating that dependency on skills means that the outcome of a process is not controllable or reproducible).

219. [1970] 62 C.P.R. 101 (Can.).

220. See *id.* at paras. 38–39 (“It seems to me that a method of describing and laying out parcels of land in a plan of sub-division of a greater tract of land in the skill of a solicitor and conveyancer and that of a planning consultant and surveyor. It is an art which belongs to the professional field and is not a manual art or skill. I, therefore, conclude that the method devised by the applicant herein for subdividing land is not an art within the meaning of that word in s. 2 (d).”).

221. See *Professional Skills*, *supra* note 206, at 125 (discussing subsequent cases in which courts extrapolated prohibitions).

222. See *id.* (“Schlumberger is said to exclude not only algorithms and mathematical formulae from patentability, but also software.”). A computer program, may however, be patentable if it can be shown to be an art or process claim, system or apparatus claim, or a manufacture claim. See Wing T. Yan & Taiji Yoshino, *Patenting Computer Software: Can It Be Done and If So, How?*, NELLIGAN O'BRIEN PAYNE (July 2006), <http://www.nelligan.ca/e/patentingcomputersoftwarecanitbedoneandifsohow.cfm> (discussing the patentability of computer software under Canadian patent law) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

223. See *Lawson* at paras. 67–68 (concluding that the method of subdividing land was not patentable).

support the proposition that all professional skills are to be excluded, and even further, to suggest that all business skills are non-patentable subject matter.<sup>224</sup>

These problems were identified by both the Federal Court<sup>225</sup> and Federal Court of Appeal.<sup>226</sup> Both courts recognized that there was no clear statutory prohibition against the patenting of business methods. Justice Phelan of the Federal Court stated:

The absolute lack of authority in Canada for a “business method exclusion” and the questionable interpretation of legal authorities in support of the Commissioner’s approach to assessing subject matters underline the policy driven nature of her decision. It appears as if this was a “test case” by which to assess this policy, rather than an application of the law to the patent at issue.<sup>227</sup>

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224. See *Professional Skills*, *supra* note 206, at 120–25 discussing cases that make “the overall judicial and administrative state of affairs in Canada” disconcerting).

225. See generally *Amazon.com, Inc. v. Canada (Attorney General)*, 2010 FC 1011 (overturning the Commissioner’s decision that business methods are not patentable).

226. See generally *Canada (Attorney General) v. Amazon.com, Inc.*, 2011 FCA 328 (ordering the Commissioner to “re-examine the patent on an expedited basis in a manner consistent with” the court’s reasoning).

227. *Amazon.com, Inc.*, 2010 FC 1011 at para. 78. Justice Phelan also admonished the Commissioner for relying on *State Street* to incorrectly support the proposition that business methods were excluded from patent protection. He noted:

The Commissioner’s Reasons even indicate an awareness of contradiction presented by the Commissioner’s previous reliance on *State Street*, a decision which clearly endorsed the patentability of business methods. On the contrary, it seems that until quite lately the Patent Office’s policy was to grant patents for business methods so long as they were an art within the meaning of section 2 of the Patent Act. The previous Manual of Patent Office Practice (MOPOP), 12.04.04 (rev. Feb. 2005) stated that business methods are “not automatically excluded from patentability, since there is no authority in the Patent Act or Rules or in the jurisprudence to sanction or preclude patentability based on their inclusion in this category”. The manual required that they be assessed like any other invention. The evidence indicates this practice was followed. The only explanation for the Patent Office’s change of heart in the newly revised manual appears to be the Commissioner’s own decision in the case at bar.

*Id.* at para. 62; see also Emir Crowne & Varoujan Arman, *Business Methods Patentable in Canada According to Federal Court*, 6 J. OF INTELL. PROP. L. & PRAC. 67, 69 (2011) (“Justice Phelan emphasized that since there is not, nor has there ever been, a statutory exclusion of ‘business methods’ in Canada, that reference to UK jurisprudence was



Similarly, Justice Sharlow, writing for a unanimous Court of Appeals stated: “I agree that no Canadian jurisprudence determines conclusively that a business method cannot be patentable subject matter. The Attorney General of Canada has not argued otherwise, and has not denied that the Commissioner has granted patents for claims similar to this in issue in this case.”<sup>228</sup> The Court ordered that the application be re-examined on an expedited basis.<sup>229</sup> The patent was issued to Amazon.com on January 17, 2012.<sup>230</sup>

American jurisprudence favors the patentability of business methods.<sup>231</sup> In *State Street Bank & Trust Co. v. Signature Financial Group Inc.*,<sup>232</sup> the Federal Circuit Court of Appeals decision, penned by Judge Rich, clearly pointed out that the exclusion of business method patents was based on antiquated legal principles, had only ever been based on *obiter dicta*, and had never been used by American courts to find an invention unpatentable.<sup>233</sup> The court went on to outline the test for the application of patent protection to algorithms (similar to that which was excluded in Canadian law by *Schlumberger Canada*), holding that when and where the algorithm was put to a practical result, creating a “useful, concrete, and tangible result,” there was no reason to exclude the patent.<sup>234</sup>

Prior to the Federal Court of Appeal ruling in *Amazon.com*, Canadian patent law risked discouraging innovation in business methods and creating a self-fulfilling prophecy; those seeking patent protection will

‘misguided . . . [and] comparison of the two regimes is an inappropriate attempt to read in words that do not exist.’”

228. *Canada (Attorney General)*, 2011 FCA 328 at para. 60; see also Emir Crowne, *Preserving the Amazon (Patent): Federal Court of Appeal Rules Business Methods Patentable in Canada*, 7 J. OF INTELL. PROP. L. & PRAC., 528, 530 (2012) (“[T]he Court of Appeal was wary of tying the patentability of a business method to its practical application.”).

229. See 2011 FCA 328 at para 75 (ordering the Commissioner to re-examine Amazon’s patent application).

230. See *Canadian Patents Database*, CANADIAN INTELLECTUAL PROP. OFFICE, [http://brevets-patents.ic.gc.ca/opic-cipo/cpd/eng/patent/2246933/summary.html?query=amazon.com&start=1&num=50&type=basic\\_search#Details](http://brevets-patents.ic.gc.ca/opic-cipo/cpd/eng/patent/2246933/summary.html?query=amazon.com&start=1&num=50&type=basic_search#Details) (last visited Apr. 13, 2014) (indicating the date of issue to Amazon.com, Inc.).

231. See Cheung & Corbin, *supra* note 184, at 58–70 (discussing American jurisprudence regarding patenting business methods).

232. 149 F.3d 1368 (Fed. Cir. 1998).

233. See Synnott, *supra* note 208, at 78 (quoting *State St. Bank & Trust v. Signature Fin. Grp.*, 149 F.3d 1368, 1375 (Fed. Cir. 1998) (“The perceived business method exclusion was found to be based on a ‘general, but no longer applicable legal principle,’ had only been stated in *obiter dicta*, and had never been used by an American court to deem an invention unpatentable.”).

234. See *id.* at 79 (explaining how the court arrived at the test).

go elsewhere while those seeking to invalidate weaker patents will do so in the Canadian courts.<sup>235</sup> Given that Canada sits on such a vast wealth of oil and gas resources,<sup>236</sup> and the increasing demand that the world has for these resources, coupled with the advancements in technology that are needed to combat global warming, stronger protection for business methods and professional skills are essential. For example, carbon capture, the ability to capture and then use CO<sub>2</sub> to increase oil and gas output while sealing the carbon underground,<sup>237</sup> would arguably be a business method deserving of protection. The Federal Court of Appeal ruling in *Amazon.com* sets the right tone. It signals that the Patent Act is to be read expansively and in accordance with its statutory provisions.<sup>238</sup> Nothing more, nothing less. If the subject matter in question can be made to fit within the definition of invention<sup>239</sup> (even if slightly uncomfortably), then courts and tribunals should aim to accommodate it.<sup>240</sup>

### V. Conclusion

Oil and gas is a vital industry in the modern world economy.<sup>241</sup> It is an area that continually defies the straightforward application of legal principles, requiring instead careful and creative use of diverse areas of law.<sup>242</sup> From property to patent, the courts must exercise a reasonable balance in giving weight to the business realities that exist. In this way, the oil and gas lease has developed, and will continue, to provide clarity to both

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235. See, e.g., Moss et al., *supra* note 190, at 148 (stating that the United Kingdom has a perceived anti-patent bias because of its courts' recent patent decisions).

236. See BOTT, *supra* note 7, at 5 (discussing Canada's centers of crude oil and natural gas).

237. See WORLD COAL ASSOCIATION, *Carbon Capture & Storage Technologies*, [www.worldcoal.org/coal-the-environment/carbon-capture-use--storage/ccs-technologies/](http://www.worldcoal.org/coal-the-environment/carbon-capture-use--storage/ccs-technologies/) (last visited Jan. 7, 2014) (describing carbon capture methods) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

238. See *Canada (Attorney General)*, 2011 FCA 328 at para. 27 (“[P]atent protection rests on the concept of a bargain between the inventor and the public’ . . . . The object of the Commissioner’s examination of a patent application . . . is to determine whether the terms of the bargain are met . . . [which] requires the Commissioner to interpret and apply the Patent Act.”).

239. See Patent Act, R.S.C. 1985, c. P-4 (defining “invention” as “any new and useful art, process, machine, manufacture or composition of matter, or any new and useful improvement in any art, process, machine, manufacture or composition of matter”).

240. Emir Crowne, *The Utilitarian Fruits Approach to Justifying Patentable Subject Matter*, 10 J. MARSHALL REV. INTELL. PROP. L. 753, 761 (2011).

241. See *Oil and Natural Gas Overview*, *supra* note 1 (stating that the oil and gas industry is one of the largest industries in the world).

242. See LUCAS & HUNT, *supra* note 51, at 1 (discussing the different areas of law that intersect with the oil and gas industry).

landowner and lessee.<sup>243</sup> The area of patent law, while traditionally grounded in the mechanical contrivances familiar to oil and gas, must remain flexible and adaptable to ensure that new realities of the information economy are addressed. Indeed, new life must be breathed into the Patent Act from time to time, or it runs the risk of defeating its very purpose. To this end, the recent Federal Court of Appeal ruling in *Amazon.com* is a welcome change to subject matter eligibility in Canada. One that recognizes that patentable subject matter is, by its very nature, unforeseen and should be interpreted with an expansive view towards patentability.

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243. See *supra* Part III.C (discussing oil and gas leases).