

UBI JUS IBI REMEDIUM: THE GAP IN TEXAS COURTS' PROTECTION OF  
MINERAL OWNERS AGAINST UNPERMITTED SEISMIC EXPLORATION  
WITHOUT PHYSICAL ENTRY

Davis Mosmeyer\*

Ubi Jus Ibi Remedium – “Where there is a right, there is a remedy”

---

Imagine you are playing a game of poker against a single opponent. Now imagine that your opponent is able to see through the back of your cards allowing him to read the face of each card clearly. Surely, you would complain that your opponent's ability is grossly unfair. But why is that the case? The simple answer is that the rules of poker are premised upon the speculative valuation of an opponent's cards. Destroying the mystery destroys the game.

In oil and gas exploration, speculative valuation similarly undergirds the market.<sup>1</sup> Each year, petroleum exploration companies pay large sums of money to landowners for the mere opportunity to take a chance on striking oil or gas on their property. Despite the foundational importance of speculative valuation to the oil and gas exploration market, Texas law—in some instances—permits precisely what is forbidden in poker. In Texas oil and gas exploration, a player can look at another player's cards before deciding how much to bet. Why this is permitted requires a basic understanding of the history of oil and gas law. How it can be changed is addressed below.<sup>2</sup>

---

\*Candidate for Juris Doctor, 2017, Baylor University School of Law; B.A., *summa cum laude*, 2014, The University of Texas at Dallas. I would like to thank Professor Rory Ryan for piquing my interest in this area of the law and for his continued assistance throughout the research and writing process. I would also like to thank my wife, Ashley, and our two beautiful children. They are the inspiration and motivation for everything I do.

<sup>1</sup> Phillips Petroleum Co. v. Cowden (*Cowden I*), 241 F.2d 586, 590 (5th Cir. 1957).

<sup>2</sup> See discussion *infra* Part III.

## I. INTRODUCTION

A. *The Pre-Seismic Oil and Gas Exploration*

The early years of oil and gas exploration involved the search for oil and gas seeps—areas where natural reservoirs of liquid and gaseous hydrocarbons reach the surface.<sup>3</sup> Most notable 19th and early 20th century Texas oil strikes were accomplished by drilling near these visibly apparent locations.<sup>4</sup> In the early 20th century, petroleum pioneers developed the first methods of oil and gas exploration that did not rely upon superficially visible indicia of subterranean hydrocarbon reservoirs.<sup>5</sup> These methods—the torsion balance, the pendulum method, and the gravimeter—were used to detect changes in gravity that often accompany geological formations that overlay hydrocarbon reservoirs.<sup>6</sup> For the first time, oil and gas exploration was not dependent on the relatively rare visible signs of subterranean hydrocarbon deposits. In 1924, however, the true revolution began.<sup>7</sup> In that year, a Gulf Oil exploration crew working in Fort Bend County, Texas, was the first in the world to discover an oil-producing salt dome using seismic technology.<sup>8</sup> Nearly a century later, seismic exploration remains the most widely used technique in the search for hydrocarbons.<sup>9</sup>

B. *Seismic Exploration Explained*

Oil and gas seismic exploration is a method for indirectly determining the location and shape of subsurface geological formations.<sup>10</sup> Originally developed as a method to estimate the location of Allied artillery positions in World War I, the German scientist Ludger Mintrop recognized the commercial potential in his technique of measuring the manner in which

---

<sup>3</sup>O. Scott Petty, *Oil Exploration*, TEX. ST. HIST. ASS'N (Dec. 16, 2010), <https://tshaonline.org/handbook/online/articles/doo15>; Laura Torresan, *What are Oil & Gas Seeps?*, U.S. GEOLOGICAL SURVEY (Jan. 19, 2011), <http://walrus.wr.usgs.gov/seeps/what.html>.

<sup>4</sup>Petty, *supra* note 3.

<sup>5</sup>*Id.*

<sup>6</sup>*Id.*

<sup>7</sup>*Id.*

<sup>8</sup>*Id.*

<sup>9</sup>ENWENODE ONAJITE, *SEISMIC DATA ANALYSIS TECHNIQUES IN HYDROCARBON EXPLORATION* 17 (Elsevier Inc. 2014).

<sup>10</sup>*Id.* at 35.

sound waves travel through the earth's various geological formations.<sup>11</sup> Land-based seismic exploration utilizes seismic waves—concussive forces exerted against the earth by the use of explosives or vibratory mechanisms attached to specialized trucks.<sup>12</sup> The waves generated by the concussive forces are reflected (bounce off without being absorbed) and refracted (pass through while changing direction) by subsurface rock layers at differing speeds.<sup>13</sup> Loose formations, such as sandstone or shale, slow the waves considerably; dense formations, such as rock salt and limestone, transmit the waves much more efficiently.<sup>14</sup> As the seismic waves are reflected back toward the surface, they are measured by geophones—acoustic receivers placed in a pattern that collect the seismic wave data.<sup>15</sup> The collected data from the geophones can then be processed to produce an image of the underground rock formations.<sup>16</sup> From these images, geologists are able to analyze whether the formations are likely to contain reservoirs of hydrocarbons.<sup>17</sup>

The early practice of seismic exploration involved placing the geophones and the source of the concussive force (in this era, often dynamite exploded in a “shot-hole”) in a straight line.<sup>18</sup> The resulting image of the rock formations was a two-dimensional cross-section.<sup>19</sup> Though this two-dimensional exploration (“2-D seismic”) was a significantly more accurate method than prior methods of determining the location of hydrocarbon reservoirs, there was still room for improvement.<sup>20</sup> Until the 1980s, 2-D seismic was the gold standard for exploration, albeit with some technological advancements in the production of the concussive forces—namely, utilizing specialized “thumper” trucks that replaced the more destructive and less reliable dynamite “shot-holes.”<sup>21</sup> That decade, however,

---

<sup>11</sup> Petty, *supra* note 3.

<sup>12</sup> ONAJITE, *supra* note 9, at 38.

<sup>13</sup> *Id.* at 39.

<sup>14</sup> Petty, *supra* note 3.

<sup>15</sup> ONAJITE, *supra* note 9, at 40–41.

<sup>16</sup> *What is Seismic Data Acquisition?*, TERREX SEISMIC, <http://www.terrexseismic.com/about-us/what-is-seismic-data-acquisition.aspx> (last visited Mar. 3, 2016).

<sup>17</sup> ONAJITE, *supra* note 9, at 178.

<sup>18</sup> Sonya D. Jones, Comment, *Time to Make Waves? A Discussion of the Outdated Application of Texas Law to Seismic Exploration*, 38 TEX. TECH L. REV. 429, 432 (2006).

<sup>19</sup> TERREX SEISMIC, *supra* note 16.

<sup>20</sup> See Jones, *supra* note 18, at 432–33; Petty, *supra* note 3.

<sup>21</sup> Petty, *supra* note 3.

saw exponential increases in both the computational power and the affordability of computer technology.<sup>22</sup> This led to a proliferation of the vastly more accurate three dimensional (“3-D”) seismic technology.<sup>23</sup>

Three-dimensional seismic exploration, rather than placing the geophones in a straight line emanating from the wave source, places the geophones in a large grid formation.<sup>24</sup> This grid formation allows geologists to create a three-dimensional image of the underlying rock formations.<sup>25</sup> The increased accuracy of geologists’ predictions based on the more detailed 3-D view has led to decreases in the price of oil and increases in productivity.<sup>26</sup> Whereas the 2-D seismic technology used in the 1970s and 1980s resulted in a 25% exploration drilling success rate, modern 3-D seismic technology has increased the success rate toward 90%.<sup>27</sup> The current state of oil and gas exploration—the post-seismic revolution era—is a far cry from the speculative days of “wildcatting”; it is now a precise science based on the cooperation of geophysicists, geologists, and petroleum engineers.<sup>28</sup>

### C. *The Legal Foundation of Geophysical Trespass*

The current state of oil and gas exploration reflects the incredible technological advances that increased computing power has made possible. Conversely, the current state of oil and gas law often remains tethered to common law principles developed long before seismic exploration was technologically possible. Both case law and legal commentary reflect the tension between an industry reliant upon rapidly developing technology and its legal moorings in centuries-old English common law tradition.<sup>29</sup>

---

<sup>22</sup>Harry L. Blomquist III, *Geophysical Trespass? The Guessing Game Created by the Awkward Combination of Outmoded Laws and Soaring Technology*, 48 BAYLOR L. REV. 21, 28–29 (1996).

<sup>23</sup>*Id.*

<sup>24</sup>*Id.*

<sup>25</sup>*Id.*

<sup>26</sup>Owen L. Anderson, *Geophysical “Trespass” Revisited*, 5 TEX. WESLEYAN L. REV. 137, 137–38 (1999).

<sup>27</sup>Jose Camara Alfaro, et al., *Reducing Exploration Risk*, OILFIELD REV., Spring 2007, at 26, 27, available at [http://www.slb.com/~media/Files/resources/oilfield\\_review/ors07/spr07/p26\\_43.pdf](http://www.slb.com/~media/Files/resources/oilfield_review/ors07/spr07/p26_43.pdf).

<sup>28</sup>Jones, *supra* note 18, at 434.

<sup>29</sup>Scott S. Slater, Note, *The Surreptitious Geophysical Survey: An Interference with Prospective Advantage*, 15 PAC. L.J. 381, 381 (1984).

Perhaps this tension between technological modernity and legal antiquity is nowhere better illustrated than in the context of geophysical trespass. The common law tort of trespass to land, with its roots in English common law, has been the primary mechanism by which Texas courts have addressed the occurrence of what is termed “geophysical trespass.”<sup>30</sup> The tort of geophysical trespass addresses a trespass to the mineral estate, often in the oil and gas context.<sup>31</sup> Whereas traditional trespass almost exclusively involves the relatively simple question of whether an unauthorized person interfered with another’s possession of the land surface, geophysical trespass frequently addresses much more difficult questions.<sup>32</sup> Due to the prevalence of severed mineral estates in Texas (mineral estate ownership being separated from surface estate ownership), judicial efforts to determine whether a mineral owner’s right of possession was interfered with by an unauthorized party are made significantly more difficult.<sup>33</sup>

#### D. *The Texas Trinity: Kennedy, Cowden I, and Cowden II*

Key to understanding Texas law on geophysical trespass are three cases: *Kennedy v. Geophysical Co.*, *Phillips Petroleum Co. v. Cowden* (*Cowden I*), and the second appeal of *Phillips Petroleum Co. v. Cowden* (*Cowden II*).<sup>34</sup> Importantly, all three cases were decided in the relatively early years of seismic exploration and well before 3-D seismic became possible.

*Kennedy* involved a landowner, C.W. Kennedy, who refused to grant General Geophysical Company and Skelly Oil Company (collectively, “General Geophysical”) permission to enter his land to conduct seismic exploration operations.<sup>35</sup> General Geophysical abided by Kennedy’s refusal

---

<sup>30</sup> See, e.g., *Phillips Petroleum Co. v. Cowden* (*Cowden I*), 241 F.2d 586, 588 (5th Cir. 1957); *Villarreal v. Grant Geophysical, Inc.*, 136 S.W.3d 265, 268 (Tex. App.—San Antonio 2004, pet. denied); *Kennedy v. Gen. Geophysical Co.*, 213 S.W.2d 707, 709 (Tex. Civ. App.—Galveston 1948, writ ref’d n.r.e.).

<sup>31</sup> *Villarreal*, 136 S.W.3d at 268 (citing *Gregg v. Delhi-Taylor Oil Corp.*, 344 S.W.2d 411, 416 (Tex. 1961)).

<sup>32</sup> R. Clifton Merrell, *Trespass to Chattels in the Age of the Internet*, 80 WASH. U. L. Q. 675, 677 (2002); see, e.g., *Kennedy*, 213 S.W.2d at 709.

<sup>33</sup> See, e.g., *Cowden I*, 241 F.2d at 588, 592 (analyzing the effect that permission by the surface estate owner had with regard to seismic operations affecting the mineral estate).

<sup>34</sup> *Kennedy*, 213 S.W.2d 707; *Phillips Petroleum Co. v. Cowden* (*Cowden II*), 256 F.2d 408 (5th Cir. 1958); *Cowden I*, 241 F.2d 586.

<sup>35</sup> *Kennedy*, 213 S.W.2d at 708–09.

to grant them access to his land.<sup>36</sup> Nevertheless, General Geophysical placed seismic receivers and shot-points very near the boundary of Kennedy's property—at some points as close as 10–15 feet from the property line.<sup>37</sup> Kennedy filed suit against General Geophysical for: (1) trespass, alleging that vibrations from the various shot points passed onto his land and constituted an actionable trespass; and (2) exemplary damages for the “willful and malicious acts of appellees in conducting such operations and in the securing of such information” as the seismic operation revealed.<sup>38</sup> The Texas Court of Civil Appeals for Galveston rejected both claims.<sup>39</sup> The court, citing an early oil and gas treatise, explained:

To constitute trespass there must be an entry upon the land. In many cases of injury by vibration the physical invasion might well be considered an entry upon the land, but certainly every vibration of a neighbor's land is not a trespass. Where is the line to be drawn? If at the point where the vibration causes appreciable physical injury, such a line coincides with the actor's liability for consequential injury.<sup>40</sup>

Here, the court reasoned, the lack of physical entry onto Kennedy's land and the lack of physical damage to Kennedy's property precluded any recovery for the plaintiff.<sup>41</sup>

The court, however, stated in dicta that Kennedy failed to prove: (1) that General Geophysical obtained valuable information regarding the geological formations under plaintiff's land; and (2) that General Geophysical set up a shot-hole and receiver point in a straight line that crossed any part of plaintiff's land.<sup>42</sup> The court's qualification of its holding appeared to contemplate a remedy for mineral owners in instances where a seismic operator was able to gather valuable seismic data from a non-consenting mineral owner's property by: (1) shooting seismic waves from one permitted parcel under the mineral owner's property to another parcel containing receiver points, or (2) shooting seismic on an adjacent permitted

---

<sup>36</sup> *Id.* at 709.

<sup>37</sup> *Id.*

<sup>38</sup> *Id.* at 708.

<sup>39</sup> *Id.* at 713.

<sup>40</sup> *Id.* at 712 (quoting 4 W. L. SUMMERS, THE LAW OF OIL AND GAS § 661 (1962)).

<sup>41</sup> *See id.* at 709, 713.

<sup>42</sup> *Id.* at 710–11, 713.

parcel in such a manner that allowed the seismic operator to gain information about the geological formations under the mineral owner's parcel.<sup>43</sup>

Eleven years after *Kennedy*, the Fifth Circuit Court of Appeals decided the first appeal of *Phillips Petroleum Co. v. Cowden*, frequently cited as *Cowden I.*<sup>44</sup> Several mineral owners (collectively, "Cowden") possessed mineral interests in 2,682 acres in Ector County, Texas.<sup>45</sup> Paul Moss owned the severed surface estate for most of the acreage at issue.<sup>46</sup> Phillips Petroleum Company and Geophysical Services, Inc., (collectively, "Phillips") obtained permission from Moss to enter onto his property to conduct seismic operations in order to analyze the geological formations underlying an adjacent parcel, subject to the mineral ownership of a third party mineral owner.<sup>47</sup> Cowden filed suit against Phillips for trespass.<sup>48</sup> The trial court, sitting without a jury, found for Cowden and awarded \$53,640 in damages—an amount that "represented the market value and also the value to appellants of the exploratory right wrongfully appropriated."<sup>49</sup> Phillips appealed to the Fifth Circuit Court of Appeals.<sup>50</sup>

The Fifth Circuit, examining the properties of mineral ownership, stated that "the right to explore for oil and minerals is a valuable property right that can be legally protected . . . [and] is ordinarily an attribute of the mineral ownership rather than of the surface estate."<sup>51</sup> The value of mineral rights, the court explained, lies primarily in their speculative value.<sup>52</sup> Therefore, a surface estate owner should not be permitted to reduce the speculative value of the mineral estate to a certainty, and "change the whole basis of the valuation of information about property belonging to another."<sup>53</sup> Still, the court rejected Phillips' argument that the aforementioned rule was inapplicable because it did not have the intention

---

<sup>43</sup> *See id.*

<sup>44</sup> *Phillips Petroleum Co. v. Cowden (Cowden I)*, 241 F.2d 586, 588 (5th Cir. 1957).

<sup>45</sup> *Id.*

<sup>46</sup> *Id.*

<sup>47</sup> *Id.*

<sup>48</sup> *Id.*

<sup>49</sup> *Id.*

<sup>50</sup> *Id.*

<sup>51</sup> *Id.* at 590.

<sup>52</sup> *Id.*

<sup>53</sup> *Id.*

of exploring Cowden's mineral estate.<sup>54</sup> The court stated that a surface owner in such an instance would have a concurrent right to forbid such seismic operations; that right, however, was not exclusive and did not allow the granting of permission to conduct the operations without permission from the mineral owner.<sup>55</sup> Further, because "almost inevitably any test carried out to obtain information about neighboring property will be still more informative about the site of the test itself," even operations such as Phillips' are properly viewed as the investigation and exploration for minerals—a right that rests exclusively with the mineral estate.<sup>56</sup>

Equally important, the *Cowden I* court examined the nature of damages available to a plaintiff in a geophysical trespass case.<sup>57</sup> In addition to being able to sue a trespasser for traditional trespass to land tort damages, the court explained that a landowner may waive the trespass claim and "sue in assumpsit for the reasonable value of the use and occupation."<sup>58</sup> In the case of unpermitted seismic exploration, the court found that the reasonable value of the use was determined by reference to the per-acre rate that Phillips would have paid for the privilege of conducting seismic operations, but without reference to "the benefit that [Phillips] *actually* received from that use."<sup>59</sup> Also key to the determination of damages was the amount of acreage to which the per-acre rate would be applied.<sup>60</sup> Here, the court limited Cowden's recovery to only that acreage "occupied" by the seismic exploration.<sup>61</sup> The property "occupied" by the exploration, the court explained, was not solely the small perimeter around each shot-hole actually used by Phillips.<sup>62</sup> Rather, because "recovery in assumpsit is based on an implied promise[,] . . . [the] assumed terms should conform fairly closely to the sort of agreement that might actually have been reached by reasonable parties."<sup>63</sup> Reasonable parties, the court stated, would not have

---

<sup>54</sup> *Id.*

<sup>55</sup> *Id.*

<sup>56</sup> *Id.* at 590–91.

<sup>57</sup> *Id.* at 592.

<sup>58</sup> *Id.* (citing *Gulf, C. & S. F. Ry. Co. v. Dunman*, 19 S.W. 1073, 1076 (Tex. 1892); *Estes v. Browning*, 11 Tex. 237, 246 (1853)).

<sup>59</sup> *Id.* at 593.

<sup>60</sup> *Id.*

<sup>61</sup> *Id.*

<sup>62</sup> *Id.*

<sup>63</sup> *Id.*



contracted for a per-acre payment based upon only the small area around each shot-hole.<sup>64</sup>

This rule for damages, the court found, was inconsistent with the trial court's finding that Phillips' liability for geophysical trespass led to damages for the entire mineral estate acreage.<sup>65</sup> Two primary reasons compelled this result. First, at trial, Phillips introduced uncontroverted testimony that "the information directly obtained from the several shots set off on the land in controversy related to 81.8 acres—i.e. the vibrations that were actually detected by the instruments were echoed from that large an area . . . ."<sup>66</sup> Phillips admitted, however, that vibrations from the seismic operations may have spread beyond the 81.8 acres from which measurements were taken.<sup>67</sup> Still, the court was clear that the mere propagation of vibrations—even with liability for geophysical trespass established—did not give rise to damages.<sup>68</sup> Second, the appeals court stated that even if Phillips was able to determine the geological formations under the entire mineral estate acreage by extrapolation and projection from the data collected from the 81.8-acre area that fact was similarly incapable of giving rise to damages calculated on all 2682 acres.<sup>69</sup> "[T]he mere obtaining of information by extrapolation of data relating to one site does not," the court held, "constitute an invasion of other sites."<sup>70</sup> Accordingly, the court remanded the case to the trial court for a determination of the acreage actually "occupied" by the seismic exploration and for a calculation of damages based upon the "occupied" acreage.<sup>71</sup>

After remand, the case wound its way back to the Fifth Circuit on appeal.<sup>72</sup> In *Cowden II*, the court distilled the essential holdings of *Cowden I* and affirmed the trial court's award of damages calculated on all of the 2682 acres.<sup>73</sup> The court summarized *Cowden I* and Texas law regarding geophysical trespass:

---

<sup>64</sup> *Id.* at 593–94.

<sup>65</sup> *Id.* at 593.

<sup>66</sup> *Id.*

<sup>67</sup> *Id.*

<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

<sup>70</sup> *Id.*

<sup>71</sup> *Id.* at 594.

<sup>72</sup> Phillips Petroleum Co. v. Cowden (*Cowden II*), 256 F.2d 408 (5th Cir. 1958).

<sup>73</sup> *Id.* at 409–10.

(1) Under Texas law, the mineral estate owner may sue a “geophysical trespasser” for trespass on the mineral estate as a result of a reflection seismograph survey on lands containing the estate; (2) permission obtained from the owner of the surface rights only could not authorize the trespass; (3) the evidence was sufficient to sustain the trial court’s finding that appellants had trespassed and that the damages per acre amounted to \$ 20.00; but, (4) the number of acres damaged would have to be limited to the area reasonably regarded as “occupied” by the seismograph survey; (5) such area would include the areas from which vibration echoes were actually received; and also, (6) such additional areas for which the trespasser would have had to obtain licenses from a hypothetically “reasonable” mineral estate owner, if it had conducted the actual operation without trespassing.<sup>74</sup>

The court upheld the trial court’s finding that the entire 2,682-acre mineral estate was “occupied,” despite leading to the same amount of damages that had been reversed in *Cowden I*.<sup>75</sup> Therefore, either: (1) evidence was introduced after remand that contradicted Phillips’ previously uncontroverted claim that the area from which vibrations were actually measured was only 81.8 or (2) the part of 2,682 acres outside of the 81.8-acre testing site were “such additional areas for which the trespasser would have had to obtain licenses from a hypothetically ‘reasonable’ mineral estate owner, if it had conducted the actual operation without trespassing.”<sup>76</sup>

Together, the Texas Trinity of *Kennedy*, *Cowden I*, and *Cowden II* operate to describe most of the metes and bounds of Texas geophysical trespass claims. As the Texas Court of Appeals for San Antonio made clear, these cases are key to an understanding of subsurface trespass claims involving seismic testing.<sup>77</sup> Key as they may be, however, *Kennedy*, *Cowden I*, and *Cowden II* do not represent an exclusive and exhaustive discussion of all facets of Texas geophysical trespass claims. Nor did

---

<sup>74</sup> *Id.* at 409.

<sup>75</sup> *Id.* at 410.

<sup>76</sup> *Id.* at 409.

<sup>77</sup> *Villarreal v. Grant Geophysical, Inc.*, 136 S.W.3d 265, 268 (Tex. App.—San Antonio 2004, pet. denied).

*Kennedy* necessarily end the discussion as to whether there is an absolute physical entry requirement to support a claim for geophysical trespass.<sup>78</sup> Despite the analysis of these cases and their progeny, a judicial blind spot regarding intentional, unpermitted collection of seismic data from neighboring tracts still remains.

## II. MIND THE GAP: THE “NO PHYSICAL ENTRY” GAP IN TEXAS’S GEOPHYSICAL TRESPASS CAUSE OF ACTION

Early geophysical trespass claims relied upon a physical entry onto the surface estate overlying a mineral estate and conducting seismic operations within those boundaries.<sup>79</sup> Modern claims, too, examine the absence or presence of physical entry as a threshold matter.<sup>80</sup> Yet, even *Kennedy*—one of the earliest geophysical trespass cases—contemplated the issues that may arise where seismic operations were conducted in such a way that valuable data was gathered from tracts where no physical entry occurred.<sup>81</sup> Rather than fully examining the contours of that rule, Texas courts—operating without significant guidance from the Supreme Court of Texas on the issue—have remained confined by the language therein.<sup>82</sup> Yet, the intervening 69 years since *Kennedy* have not been kind to its holding. Technological developments that were unimaginable at the time of *Kennedy*, merely two years after the end of World War II, have revolutionized the oil and gas industry.<sup>83</sup> The potential for exploitation of *Kennedy*’s loophole—the gathering of valuable and reliable seismic data

---

<sup>78</sup> See, e.g., *id.* at 267 (“Texas law, however, requires actual physical entry in order to sustain a claim of geophysical trespass. Accordingly, we decline the invitation to eliminate the physical entry requirement, and we affirm the trial court’s judgment.”).

<sup>79</sup> See, e.g., *Phillips Petroleum Co. v. Cowden (Cowden I)*, 241 F.2d 586, 588 (5th Cir. 1957); *Villarreal*, 136 S.W.3d at 268; *Kennedy v. Gen. Geophysical Co.*, 213 S.W.2d 707, 708 (Tex. Civ. App.—Galveston 1948, writ ref’d n.r.e.).

<sup>80</sup> See, e.g., *Lightning Oil Co. v. Anadarko E&P Onshore LLC*, 480 S.W.3d 628, 634 (Tex. App.—San Antonio Oct. 14, 2015, pet. filed); *Sciscoe v. Enbridge Gathering (N. Tex.)*, L.P., No. 07-00391-CV, 2015 WL 3463490, at \*7 (Tex. App.—Amarillo June 1, 2015, pet. filed); *Villarreal*, 136 S.W.3d at 265.

<sup>81</sup> *Kennedy*, 213 S.W.2d at 708.

<sup>82</sup> *Villarreal*, 136 S.W.3d at 268–70 (“There is no dispute about the fact that neither Grant nor Millennium physically invaded or injured the surface estate lying above the Villarreal’s mineral estate; thus there was no trespass. Although it appears that Texas law regarding geophysical trespass has not kept pace with technology, as an intermediate court we must follow established precedent. Accordingly, we hold that summary judgment was proper.”).

<sup>83</sup> See discussion *infra* Part I.B.

without physical entry onto the surface estate overlying the mineral estate (hereafter, “unpermitted exploration without physical entry”)—has only increased with the leaps in 3-D seismic accuracy and affordability. Smaller mineral estate holders, whose parcels can easily be surveyed without physical entry, are especially at risk. Without additional protection for mineral owners—created by either the judiciary or legislature—the valuable property right of exploration and the attendant speculative value are at risk.<sup>84</sup>

Commentators have suggested several approaches to dealing with this gap in mineral owner’s protection. One approach is to extend the traditional common law tort of trespass to provide protection against unpermitted exploration without physical entry.<sup>85</sup> A second approach is the recognition of a new tort: wrongful appropriation of another’s right of exploration.<sup>86</sup> A third another approach is to extend protection to in situ seismic information under trade secret law.<sup>87</sup> A fourth approach is the enactment of statutory protections that would prevent the destruction of the speculative value of a nonconsenting mineral owner’s estate.<sup>88</sup> Finally, one commentator has argued that no liability should extend to seismic operators conducting unpermitted exploration without physical entry.<sup>89</sup>

### III. THE END OF AN ERA: ELIMINATING THE PHYSICAL ENTRY REQUIREMENT IN GEOPHYSICAL TRESPASS

The most direct way in which to address the gap in mineral owner’s protection is the elimination of the physical entry requirement for trespass claims. At first blush, *Kennedy* seems to cement the physical entry requirement.<sup>90</sup> However, the court’s emphasis that the plaintiff failed to

---

<sup>84</sup> *Cowden I*, 241 F.2d at 590.

<sup>85</sup> Blomquist, *supra* note 22, at 28.

<sup>86</sup> Scott D. Marrs, *Geophysical Trespass and Advanced Geophysical Exploration Techniques*, 58 TEX. B.J. 128, 132 (Feb. 1995); Robert J. Rice, *Wrongful Geophysical Exploration*, 44 MONT. L. REV. 53, 57 (1983); Thomas M. Warner, Jr., Comment, *Oil and Gas: Recovery for Wrongful Geophysical Exploration—Catching Up with Technology*, 23 WASHBURN L.J. 107, 126 (1983).

<sup>87</sup> Jones, *supra* note 18, at 447–54.

<sup>88</sup> Blomquist, *supra* note 22, at 49–50.

<sup>89</sup> Anderson, *supra* note 26, at 170–71.

<sup>90</sup> *Kennedy v. Gen. Geophysical Co.*, 213 S.W.2d 707, 709 (Tex. Civ. App.—Galveston 1948, writ ref’d n.r.e.) (“[T]he mere fact that appellees conducted geophysical operations on land adjacent to and in the vicinity of appellant’s land . . . cannot form a basis for appellant’s claim for

demonstrate either that the seismic operators obtained valuable information regarding the geological formations under plaintiff's land or that the seismic operators set up a shot-hole and receiver point in a straight line that crossed any part of plaintiff's land can reasonably be read to qualify its holding.<sup>91</sup> One commentator has argued that this qualification "inferentially left the door open for an actionable trespass on the mineral estate without physical entry, conditioned upon a showing that the trespasser has obtained valuable subsurface information under the subject property."<sup>92</sup> Whether this qualification is best understood as a potential exception to the physical entry requirement, the opening for the recognition of a new tort, or, simply, obiter dictum is open to debate. Case law since *Kennedy*, however, indicates that that first option has been rejected by Texas courts.<sup>93</sup>

Yet, the Fifth Circuit Court of Appeals' opinion in *Cowden II* could also be read as relaxing the physical entry requirement. There, the court upheld the award for damages calculated on the entire 2,682-acre tract where there was uncontroverted testimony that seismic data was gathered from only 81.8 acres.<sup>94</sup> The court's holding that the plaintiffs could recover damages for "such additional areas for which the trespasser would have had to obtain licenses from a hypothetically 'reasonable' mineral estate owner, if it had conducted the actual operation without trespassing", may have entailed that one or more of the plaintiffs were permitted to recover for exploration without physical entry onto the surface estate overlying their property.<sup>95</sup> Though the inclusion of the damages for "additional areas" was explained as a function of the nature of assumpsit damages, the trespasser's liability is decided as to each individual tract.<sup>96</sup> There, uncontroverted evidence was offered to prove that physical entry only occurred on a small number of the tracts that comprised the entire 2,682-acre parcel.<sup>97</sup> The inescapable conclusion is that the mineral owners were permitted to recover despite there being no physical entry onto certain tracts that they owned.

---

the actual damages sought by him, it not being shown that any trespass of appellant's land was committed by appellees . . .").

<sup>91</sup> *Id.* at 713.

<sup>92</sup> Blomquist, *supra* note 22, at 26.

<sup>93</sup> *Id.* at 27.

<sup>94</sup> Phillips Petroleum Co. v. Cowden (*Cowden II*), 256 F.2d 408, 409–10 (5th Cir. 1958).

<sup>95</sup> *Id.* at 409.

<sup>96</sup> Phillips Petroleum Co. v. Cowden (*Cowden I*), 241 F.2d 586, 593–594 (5th Cir. 1957).

<sup>97</sup> *Id.* at 588.

A commentator also offers the argument that Texas courts' "determination to protect property rights is on a collision course with technological developments in geophysical exploration," which will inevitably result in the "judicial abolishment of the physical entry requirement."<sup>98</sup> Again, the strict adherence to *Kennedy*'s physical entry requirement in geophysical trespass cases over the nearly 70 years since the decision—and 20 years since the publication of the commentator's article—counsels against the wisdom of such a statement. It may also be true, as the commentator stated, that the heart of a geophysical trespass case is "not the unauthorized entry upon the surface, but the unauthorized exploration of the minerals."<sup>99</sup> Yet the fact that the core inquiry in a geophysical trespass case does not involve the physical entry requirement does not in any way diminish the importance that courts have placed upon the requirement as a threshold matter. Further, an exception to the physical entry requirement sufficiently specific as would be required to adequately protect mineral owners against unpermitted exploration without physical entry would certainly appear inconsistent with the stability and predictability that are core values of the common law tradition. At this juncture, it would represent a significant change in trespass jurisprudence to relax the physical entry requirement; mineral owners are best served looking elsewhere for protection.

#### IV. BRAVE NEW TORT: WRONGFUL APPROPRIATION OF THE RIGHT OF EXPLORATION

Just as one commentator arguing for the elimination of the physical entry requirement has been encouraged by the *Kennedy* court's qualification of its holding,<sup>100</sup> so have others who argue for the recognition of a new tort: wrongful appropriation of the right of exploration.<sup>101</sup> Arguably, the most plausible reading of *Kennedy*'s text is that the qualification points toward a new tort, rather than a relaxation of the physical entry requirement. *Kennedy*, it must be admitted, does seem to contain a rather unambiguous statement as to the inviolability of the physical entry requirement.<sup>102</sup>

---

<sup>98</sup> Blomquist, *supra* note 22, at 28.

<sup>99</sup> Blomquist, *supra* note 22, at 28.

<sup>100</sup> Jones, *supra* note 18, at 434, 440.

<sup>101</sup> Rice, *supra* note 86, at 53–54.

<sup>102</sup> *Kennedy v. Gen. Geophysical Co.*, 213 S.W.2d 707, 709 (Tex. Civ. App.—Galveston 1948, writ ref'd n.r.e.).

Therefore, the court's subsequent discussion about the failure to demonstrate (1) that the seismic operators obtained valuable information regarding the geological formations under the plaintiff's land and (2) that the seismic operators set up a shot-hole and receiver point in a straight line that crossed any part of the plaintiff's land is more appropriately seen as envisioning a remedy for this activity under a new legal mechanism.<sup>103</sup> Other jurisdictions have appeared to contemplate a separate remedy for wrongful appropriation of the right to explore without physical entry.<sup>104</sup>

The Fifth Circuit Court of Appeals, in *Cowden II*, also could be seen as recognizing a remedy for wrongful appropriation, as it upheld the award for damages calculated on the entire 2,682-acre tract where there was uncontroverted testimony that seismic data was gathered from only 81.8 surface acres.<sup>105</sup> As explained above in Section III, the court's holding that the plaintiffs could recover damages for "such additional areas for which the trespasser would have had to obtain licenses from a hypothetically 'reasonable' mineral estate owner, if it had conducted the actual operation without trespassing", requires the conclusion that some of the plaintiffs were permitted to recover for exploration without physical entry some of their property.<sup>106</sup> It remains to be seen whether this non-physical entry recovery can be successfully argued to give rise to full recognition of a new tort for wrongful appropriation of the right to explore.

One benefit of this approach is that it circumvents courts' "reluctan[ce] to recognize a cause of action without physical entry upon the property . . . [as a] result of an attempt by the courts to link geophysical trespass with trespass in the traditional legal sense."<sup>107</sup> Further, this approach would give full effect to courts' determination that "the right to explore for oil and minerals is a valuable property right that can be legally protected . . . [and

---

<sup>103</sup> *Id.* at 710–11, 713.

<sup>104</sup> *See* *Ohio Oil Co. v. Sharp*, 135 F.2d 303, 308 (10th Cir. 1943) ("It may be conceded for the purposes of this case only that the geophysical tests or experiments conducted upon the public highway abutting the lands involved here were in the nature of exploratory operations, the right to which belonged exclusively to the owners of the mineral interests, and it may be further conceded that the tests and experiments shown to have been conducted were an unauthorized invasion of the property rights of the mineral owners, and one for which the owners of the mineral interests are afforded some measure of relief, either legal or equitable.").

<sup>105</sup> *Phillips Petroleum Co. v. Cowden (Cowden II)*, 256 F.2d 408, 409–10 (5th Cir. 1958).

<sup>106</sup> *Id.* at 409.

<sup>107</sup> *Blomquist*, *supra* note 22, at 47.

is] an attribute of the mineral ownership rather than of the surface estate.”<sup>108</sup> In Texas, this route for providing protection to mineral owners finds more support and less resistance than the argument for relaxing the physical entry requirement.

V. A TOUCH OF MODERN: EXTENDING PROTECTION TO IN SITU SEISMIC INFORMATION UNDER THE NEWLY-ENACTED TEXAS UNIFORM TRADE SECRETS ACT

The numerous problems likely to be encountered in efforts to either eliminate the physical entry requirement or to create a new tort for wrongful appropriation of the right of exploration present a daunting hurdle for mineral owners. As an alternative, it has been suggested that the protection that mineral owners desire can be found in existing law, namely trade secret law.<sup>109</sup> Previous case law and commentary analyzing seismic data as a potentially protectable trade secret pre-date the 2013 enactment of the Texas Uniform Trade Secrets Act (“TUTSA”).<sup>110</sup> TUTSA’s enactment, however, generally served to codify the common law; case law and commentary interpreting the now-superseded Restatement of Torts and Restatement of Unfair Competition is likely still applicable.<sup>111</sup>

The TUTSA provides the cause of action and remedies when a trade secret has been misappropriated.<sup>112</sup> The TUTSA defines actions that constitute the misappropriation of a trade secret:

“Misappropriation” means:

- (A) acquisition of a trade secret of another by a person who knows or has reason to know that the trade secret was acquired by improper means; or
- (B) disclosure or use of a trade secret of another without express or implied consent by a person who:

---

<sup>108</sup> Phillips Petroleum Co. v. Cowden (*Cowden I*), 241 F.2d 586, 590 (5th Cir. 1957).

<sup>109</sup> Jones, *supra* note 18, at 453.

<sup>110</sup> TEX. CIV. PRAC. & REM. CODE ANN. § 134A.001 et. seq. (West Supp. 2015).

<sup>111</sup> Compare TEX. CIV. PRAC. & REM. CODE ANN. § 134A.001 et. seq., with RESTATEMENT OF TORTS § 757 cmt. b (AM. LAW INST. 1939), and RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 reporter’s n. cmt. d (AM. LAW INST. 1995).

<sup>112</sup> TEX. CIV. PRAC. & REM. CODE ANN. § 134A.004.



2016]

*UBI JUS IBI REMEDIUM*

813

(i) used improper means to acquire knowledge of the trade secret;

(ii) at the time of disclosure or use, knew or had reason to know that the person's knowledge of the trade secret was:

(a) derived from or through a person who had utilized improper means to acquire it;

(b) acquired under circumstances giving rise to a duty to maintain its secrecy or limit its use; or

(c) derived from or through a person who owed a duty to the person seeking relief to maintain its secrecy or limit its use; or

(iii) before a material change of the person's position, knew or had reason to know that it was a trade secret and that knowledge of it had been acquired by accident or mistake.<sup>113</sup>

The TUTSA also defines a trade secret:

"Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, process, financial data, or list of actual or potential customers or suppliers, that:

(A) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use; and

(B) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.<sup>114</sup>

---

<sup>113</sup> *Id.* § 134A.002(3).

<sup>114</sup> *Id.* § 134A.002(6).

Therefore, whether unpermitted seismic exploration without physical entry is prohibited under the TUTSA requires answering two questions: (1) does unpermitted seismic exploration without physical entry constitute misappropriation and (2) does seismic data qualify for protection as a trade secret.

First, there does not appear to be any potential problem with classifying unpermitted exploration without physical entry as “misappropriation” under the TUTSA. Courts’ analyses under the pre-TUTSA common law provide several instructive examples of how a modern court could find this type of seismic exploration to be a “misappropriation.” In an industrial espionage case, the Fifth Circuit Court of Appeals exhibited little hesitation in finding that an unpermitted aerial survey of a chemical plant that was under construction constituted a misappropriation.<sup>115</sup> Importantly, the survey took place in public airspace; therefore, no “physical entry” trespass occurred.<sup>116</sup> More recently, a Texas district court granted partial summary judgment for a cross-plaintiff alleging a misappropriation of trade secrets stemming from an unpermitted aerial magnetic survey of its land.<sup>117</sup> Again, the surveying took place from public airspace, so no “physical entry” trespass could have occurred.<sup>118</sup> These cases provide clear and valuable analogies for one who argues that unpermitted exploration without physical entry constitutes a misappropriation. Further, the above cited cases analyzed whether the activities of the surveyors were “improper means” that were forbidden under trade secret law.<sup>119</sup> The “improper means” language is retained in the TUTSA; the enactment of TUTSA will, therefore, not have reduced the persuasiveness of the above-cited cases.<sup>120</sup>

The second—and far more problematic—question is whether seismic data qualifies for trade secret protection. Recently, the Supreme Court of Texas addressed whether gathered and compiled seismic data fell within the purview of trade secret protections.<sup>121</sup> After analyzing the data under a six-factor test found in the Restatements, the court concluded that compiled

---

<sup>115</sup> *E.I. duPont deNemours & Co. v. Christopher*, 431 F.2d 1012, 1015–17 (5th Cir. 1970).

<sup>116</sup> *Id.* at 1014.

<sup>117</sup> Anderson, *supra* note 26, at 169 n.140.

<sup>118</sup> *Id.*

<sup>119</sup> *E.I. duPont*, 431 F.2d at 1015; Anderson, *supra* note 26, at 169 & n.140.

<sup>120</sup> TEX. CIV. PRAC. & REM. CODE ANN. § 134A.002(3) (West Supp. 2015) (“Misappropriation” means . . . acquisition of a trade secret of another by a person who knows or has reason to know that the trade secret was acquired by improper means . . .”).

<sup>121</sup> *In re Bass*, 113 S.W.3d 735, 740 (Tex. 2003).

seismic data qualifies as a trade secret.<sup>122</sup> Further, many other courts have reached the same conclusion as the Supreme Court of Texas.<sup>123</sup> However, the conclusions of these courts, despite the urging of at least one commentator,<sup>124</sup> do not compel the same result for in situ seismic data—that is, seismic data as it exists in the form of geological formations. Any successful argument for the inclusion of in situ seismic data in the sphere of trade secret protections must adequately examine the distinction between in situ and compiled seismic information. The distinction becomes all the more important in light of the TUTSA’s definition of trade secret.<sup>125</sup>

In replacing the Restatement’s six-factor test for the determination of whether a trade secret exists, the TUTSA states that a trade secret is “information, including a formula, pattern, compilation, program, device, method, technique, process, financial data, or list of actual or potential customers or suppliers.”<sup>126</sup> Compiled seismic data clearly belongs in the category of a “compilation.” In situ seismic data, however, is not a compilation in the same sense as compiled seismic data. Rather than being compiled, it remains in its raw state.<sup>127</sup> Further, in situ seismic data does not so easily fit into any of the remaining categories. Notably, all of the provided examples describe information created or modified by human effort. With in situ seismic data, no human effort has been expended in its

---

<sup>122</sup> *Id.* (analyzing the data under the Restatement’s six-factor test, which is: (1) the extent to which the information is known outside of his business; (2) the extent to which it is known by employees and others involved in his business; (3) the extent of the measures taken by him to guard the secrecy of the information; (4) the value of the information to him and to his competitors; (5) the amount of effort or money expended by him in developing the information; (6) the ease or difficulty with which the information could be properly acquired or duplicated by others. RESTATEMENT OF TORTS § 757 cmt. b (AM. LAW INST. 1939); RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 reporter’s n. cmt. d (AM. LAW INST. 1995)).

<sup>123</sup> *See, e.g.*, *Musser Davis Land Co. v. Union Pac. Res.*, 201 F.3d 561, 569 (5th Cir. 2000); *Tidelands Royalty “B” Corp. v. Gulf Oil Corp.*, 804 F.2d 1344, 1351 (5th Cir. 1986); *Phillips Petroleum Co. v. Stryker*, 723 So. 2d 585, 587 (Ala. 1998); *Amoco Prod. Co. v. Laird*, 622 N.E.2d 912, 918 (Ind. 1993); *Jones*, *supra* note 18, at 447–54.

<sup>124</sup> *Jones*, *supra* note 18, at 430.

<sup>125</sup> TEX. CIV. PRAC. & REM. CODE ANN. § 134A.002(6).

<sup>126</sup> *Id.*

<sup>127</sup> David Monk, *Seismic Technology: Technological Advances Bringing New Capabilities to Seismic Data Acquisition*, THE AMERICAN OIL & GAS REPORTER, <http://www.aogr.com/magazine/editors-choice/technological-advances-bringing-new-capabilities-to-seismic-data-acquisition> (last visited Sept. 16, 2016).

creation. Therefore, the canon of construction, *eiusdem generis*, counsels against in situ seismic data's inclusion.<sup>128</sup>

Though in situ seismic data may “derive[ ] independent economic value, actual or potential, from not being generally known”<sup>129</sup> and may be “the subject of efforts that are reasonable under the circumstances to maintain its secrecy”,<sup>130</sup> the threshold requirement is that the alleged trade secret be “information, including a formula, pattern, compilation, program, device, method, technique, process, financial data, or list of actual or potential customers or suppliers . . . .”<sup>131</sup> In short, attempting to provide trade secret protection to naturally occurring phenomena would run afoul of many of the underlying rationales of trade secret protection, as evinced by the Restatement's six-factor test.<sup>132</sup> Mineral owners, especially in light of the enactment of the TUTSA, face long odds in attempting to convince a court that trade secret law is an appropriate vehicle for the protection they seek.

#### VI. LEGISLATING BUSINESS MORALITY: A STATUTORY REMEDY FOR UNPERMITTED EXPLORATION WITHOUT PHYSICAL ENTRY

Given the substantial hurdles that they are likely to face in any attempt to convince courts to craft special protections, mineral owners would appear to be best served by seeking legislative assistance with their cause. It is beyond the scope of this article to posit specific language that would adequately protect mineral owners from unpermitted exploration without physical entry. However, the voluminous regulations that affect the oil and

---

<sup>128</sup> *Eiusdem generis* is Latin for “of the same kind.” This canon of construction is used “to interpret statutes when a law lists classes of persons or things. For example, if a law refers to automobiles, trucks, tractors, motorcycles, and other motor-powered vehicles, a court might use *eiusdem generis* to hold that such vehicles would not include airplanes, because the list included only land-based transportation.” *Eiusdem Generis Definition*, WEX LEGAL DICTIONARY, [https://www.law.cornell.edu/wex/eiusdem\\_generis](https://www.law.cornell.edu/wex/eiusdem_generis) (last visited Mar. 9, 2016).

<sup>129</sup> TEX. CIV. PRAC. & REM. CODE ANN. § 134A.002(6) (The speculative value of mineral interests rely on their not being generally known and comprise a significant part of the value of the mineral interest. *See, e.g.*, Phillips Petroleum Co. v. Cowden (*Cowden I*), 241 F.2d 586, 590 (5th Cir. 1957)).

<sup>130</sup> *Id.* § 134A.002(6) (In the mineral estate context, the only reasonable efforts that could be taken by a mineral owner are to deny permission for seismic exploration if sought by the seismic operators.).

<sup>131</sup> *Id.*

<sup>132</sup> *See* RESTATEMENT OF TORTS § 757 cmt. b (AM. LAW INST. 1939); *see also* RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 reporter's n. cmt. d (AM. LAW INST. 1995).

gas industry promulgated by the Texas Legislature are surely fertile ground for such an addition.

#### VII. SEE NO EVIL: THE RULE OF CAPTURE AS THE STATUS QUO

A final option—undoubtedly unattractive to mineral owners—is to do nothing. One commentator has argued that unpermitted seismic exploration without physical entry should fall under the rule of capture.<sup>133</sup> Analogizing such activity to a mineral owner’s draining a reservoir common to several tracts, the commentator contends that there is nothing “wrongful, immoral, unethical, and unreasonable . . . if permission is not secured from a mineral owner of the target parcel.”<sup>134</sup>

Yet the rule of capture “is a creature of judicial convenience born in the infancy of petroleum science, when petroleum was not well understood.”<sup>135</sup> To extend it to the situation at issue would be to ignore several of the rule’s rationales. First, “the rule of capture expressly seeks to resolve ownership conflicts arising from the fugacious nature of oil and gas.”<sup>136</sup> Geological formations, unlike oil and gas in a common reservoir, typically do not move measurably within the human lifetime. Second, the rule of capture seeks to encourage development of natural resources.<sup>137</sup> The true rule of capture—non-liability for migrating minerals—serves this purpose well. An extension of the rule of capture for exploration would provide no additional benefit in this regard. Lastly, the rule of capture for exploration runs afoul of the Fifth Circuit’s pronouncement that: “the right to explore for oil and minerals is a valuable property right that can be legally protected . . . [and] is ordinarily an attribute of the mineral ownership rather than of the surface estate.”<sup>138</sup> If the right is valuable and protectable against the surface estate owner, then, a fortiori, that right is valuable and protectable against a stranger to the parcel in question. As such, the rule of capture is inappropriate for the seismic exploration context. Further, the rule-of-capture approach to unpermitted exploration without physical entry

---

<sup>133</sup> Anderson, *supra* note 26, at 170–76.

<sup>134</sup> *Id.* at 171.

<sup>135</sup> Ralph A. Midkiff, Note, *Phase Severance of Gas Rights from Oil Rights*, 63 TEX. L. REV. 133, 160 (1984).

<sup>136</sup> *Id.*

<sup>137</sup> James E. McDaniel, Note, *Statutory Pooling and Unitization in West Virginia: The Case for Protecting Private Landowners*, 118 W. VA. L. REV. 439, 441, 450 (2015).

<sup>138</sup> *Phillips Petroleum Co. v. Cowden (Cowden I)*, 241 F.2d 586, 590 (5th Cir. 1957).

provides little comfort to mineral owners—and even less protection—for their valuable property rights.

### VIII. CONCLUSION

The smell-test, when applied to unpermitted seismic exploration without physical entry, reveals something rotten. That a valuable property right, based in large part on its speculative nature, can be destroyed by one having no interest in the parcel of land involved seems plainly wrong. The fact that such activity falls well within the scope of actions deemed “improper means” of misappropriation under trade secret law confirms this. Yet, mineral owners would do well to wisely choose the vehicle for extending protections against this unpermitted seismic exploration. Ample precedent works against them in any effort to eliminate the physical entry requirement to the traditional tort trespass. Also, trying to fit the square peg of in situ seismic data in the round hole of the TUTSA definition of “trade secret” seems similarly foolhardy. And doing nothing should not be an option, as the rule of capture approach fails to provide even a modicum of protection for mineral owners who may have good reasons for delaying the determination of whether hydrocarbon reservoirs exist in their tract. It appears, therefore, that legislative action or judicial recognition of the tort of “wrongful appropriation of the right to explore” present the best opportunities for success.