

Correlative Rights Doctrine, Not the Rule of Capture, Provides Correct Analysis for Resolving Hydraulic Fracturing Cases [*Coastal Oil & Gas Corp. v. Garza Energy Trust*, 268 S.W.3d 1 (Tex. 2008)]

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I. INTRODUCTION

America's dependence on foreign oil is dangerous.¹ On September 11, 2001, America suffered one of the worst terrorist attacks in history.² That year, America imported about twelve million barrels of oil per day.³ Many believe that America's insatiable appetite for oil subsidized the September 11 terrorist attacks.⁴ This subsidization occurs because a share of the \$1 billion spent on imported oil each day is paid to countries in the Middle East.⁵ Through these countries, the money is paid to extremist groups that promote hatred and violence against Americans.⁶

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1. See, e.g., CNN.com, *McCain Calls U.S. Dependence on Foreign Oil Dangerous*, June 25, 2008, <http://www.cnn.com/2008/POLITICS/06/25/campaign.wrap/index.html> ("America's dependence on foreign oil was a troubling situation 35 years ago. It was an alarming situation 20 years ago. It's a dangerous situation today.").

2. See generally NYTimes.com, Times Topics: September 11, 2001, http://topics.nytimes.com/top/reference/timestopics/subjects/s/sept_11_2001/index.html?s=oldest& (last visited Apr. 5, 2009) (compiling *New York Times* articles covering the September 11, 2001 attacks).

3. Energy Information Administration (EIA), *Annual U.S. Crude Oil and Petroleum Products Imports*, July 28, 2008, <http://tonto.eia.doe.gov/dnav/pet/hist/mttimus2a.htm>. Today, Americans consume 20,680,000 barrels of oil per day. EIA, *Petroleum Basic Statistics*, Feb. 2009, <http://www.eia.doe.gov/basics/quickoil.html>. About fifty-eight percent of all oil consumed in the United States is imported. EIA, *How Dependent Are We on Foreign Oil?*, Aug. 22, 2008, http://tonto.eia.doe.gov/energy_in_brief/foreign_oil_dependence.cfm. "Imported natural gas currently represents almost 16 percent of the gas consumed in the United States annually." EIA, *Natural Gas Import/Export Pipelines*, http://www.eia.doe.gov/pub/oil_gas/natural_gas/analysis_publications/ngpipeline/impex.html (last visited Apr. 5, 2009). These statistics are not expected to improve. See NAT'L ENERGY POLICY DEV. GROUP, RELIABLE, AFFORDABLE, AND ENVIRONMENTALLY SOUND ENERGY FOR AMERICA'S FUTURE, at x (2001). Over the next twenty years, U.S. oil consumption is expected to increase by thirty-three percent and natural gas consumption is expected to increase by over fifty percent. *Id.*

4. See Mortimer B. Zuckerman, *Getting Serious About Oil*, U.S. NEWS & WORLD REPORT, July 30, 2006, <http://www.usnews.com/usnews/opinion/articles/060730/7edit.htm>; see also CNN.com, *supra* note 1.

5. See Zuckerman, *supra* note 4.

6. See *id.*

Completely stopping the subsidies might never occur, but America can significantly reduce its dependence on foreign oil with several strategies.⁷ Increasing domestic production is one such strategy.⁸ Production can be increased by applying technological advances, such as hydraulic fracturing,⁹ to tap into new oil fields and increase the productivity of older fields.¹⁰

Hydraulic fracturing is not new; it was first used in 1947 on a well in the Hugoton field in Grant County, Kansas.¹¹ Today, ninety percent of the oil and gas wells in the United States are completed using hydraulic fracturing.¹² In fact, many reservoirs require hydraulic fracturing for oil and gas to be commercially produced.¹³ The impact of hydraulic fracturing on production is considerable; it is “estimated to account for 30 percent of U.S. recoverable oil and gas reserves and has been responsible for the addition of more than 7 billion barrels of oil and 600 trillion cubic feet of natural gas [needed] to meet [our] nation’s energy needs.”¹⁴

In *Coastal Oil & Gas Corp. v. Garza Energy Trust*,¹⁵ the Texas Supreme Court faced an issue of first impression—whether hydraulic fracturing that crosses property lines constitutes a subsurface trespass.¹⁶ The court avoided analyzing the broader issue of trespass by holding that the rule of capture barred recovery of the plaintiffs’ alleged damages; that is, a plaintiff cannot recover the value of oil and gas drained by an adjacent landowner as a result of hydraulic fracturing.¹⁷ By failing to analyze trespass, the court did not properly apply the rule of capture because the rule only bars liability when oil and gas is legally recovered.¹⁸ An analysis of the rule of capture and the law of trespass would

7. See generally NAT’L ENERGY POLICY DEV. GROUP, *supra* note 3, at xiii.

8. *Id.*

9. See Sam Fletcher, *Lower E&P Spending Ends 6-Year Global Rally*, OIL & GAS J., Jan. 5, 2009, http://www.ogj.com/pdf_temp/349138.pdf (stating that hydraulic fracturing is the most important technology).

10. See Jad Mouawad, *Oil Innovations Pump New Life into Old Wells*, N.Y. TIMES, Mar. 5, 2007, available at <http://www.nytimes.com/2007/03/05/business/05oil1.html>.

11. Dep’t of Energy, *Hydraulic Fracturing White Paper*, in ENVTL. PROT. AGENCY, EPA 816-R-04-003, EVALUATION OF IMPACTS TO UNDERGROUND SOURCES OF DRINKING WATER BY HYDRAULIC FRACTURING OF COALBED METHANE RESERVOIRS app. A-1, at § 1.0 (2004), available at http://www.epa.gov/safewater/uic/pdfs/cbmstudy_attach_uic_append_a_doe_whitepaper.pdf.

Some sources say that hydraulic fracturing was first used commercially in 1949. *Coastal Oil & Gas Corp. v. Garza Energy Trust*, 268 S.W.3d 1, 7 (Tex. 2008).

12. *Energy Policy Act of 2005: Hearing Before the H. Comm. on Energy & Commerce*, 109th Cong. 115 (2005) (statement of Victor Carrillo, Chairman, Tex. R.R. Comm’n), available at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_house_hearings&docid=f:99906.pdf (“Hydraulic fracturing is a decade’s [sic] old process for completing over 90% of the oil and natural gas wells drilled in the United States.”).

13. See *Coastal*, 268 S.W.3d at 13.

14. AM. PETROLEUM INST. (API), HYDRAULIC FRACTURING AT A GLANCE 2 (2008), http://www.api.org/policy/exploration/upload/HYDRAULIC_FRACT_INDIVID_PAGES.pdf.

15. 268 S.W.3d 1 (Tex. 2008).

16. See *id.* at 11-12.

17. See *id.* at 4.

18. See *Halbouty v. R.R. Comm’n of Tex.*, 357 S.W.2d 364, 375 (Tex. 1962); see also *infra* Sec-

not be necessary if the court defined the property rights of the parties by applying the doctrine of correlative rights.

An analysis of this case involves oil and gas law and tort law. This Comment examines the rule of capture theory that the Texas Supreme Court used to address the trespass issue. It analyzes the common understanding of trespass and how traditional trespass law finds its limits in oil and gas law. This Comment also examines how correlative rights can diminish a landowner's right to sue for subsurface trespass when his land lies over a common reservoir. Finally, this Comment concludes that courts must first apply correlative rights concepts to define the property rights of the parties before applying the rule of capture and trespass principles.

II. CASE DESCRIPTION

Salinas¹⁹ owned a 748-acre tract of land known as Share 13 in Hidalgo County, Texas.²⁰ Coastal Oil & Gas (Coastal) leased the minerals in Share 13 and Share 15; it owned the minerals in Share 12.²¹ Beneath these tracts of land lies a natural gas reservoir known as the Vicksburg T formation.²² The Vicksburg T is a "tight" sandstone formation that requires hydraulic fracture stimulation to commercially produce natural gas.²³ Hydraulic fracture stimulation, also known as "fracing,"²⁴ is completed in three stages.²⁵ First, fractures are created in the reservoir rock by pumping fracing fluid down the well under high pressure.²⁶ In the second stage, frac fluid and propping agents (proppants) are combined and "pumped down the well to extend the fractures and carry the propping agents deep into the fractures."²⁷ The final stage, called "back-flush," involves pumping the frac fluid back up the well leaving the

tion III.C (discussing the rule of capture).

19. "Salinas" refers to all of the owners of Share 13. *Coastal*, 268 S.W.3d at 5 n.4.

20. *Id.* at 5. Salinas and their ancestors have occupied Share 13 for over a century. *Id.* "Shares are further breakdowns of porcions, similar to leagues and labors." Tobin.com, Geo-Business Glossary of Terms—Texas, <http://www.tobin.com/geoglossary.asp> (last visited Apr. 5, 2009). A "[p]orcion[]" [r]efers to the very large original Spanish landgrants found primarily in south Texas along the Rio Grande." *Id.* A "league" represents approximately 4,428 acres, and a "labor" represents approximately 177 acres. *Id.*

21. *Coastal*, 268 S.W.3d at 5. Coastal became the owner of Share 12, a 163-acre mineral estate, in 1995. *Id.* It purchased the estate from Pennzoil. Respondents' Brief on the Merits at *1, *Coastal Oil & Gas Corp. v. Garza Energy Trust*, 268 S.W.3d 1 (Tex. 2008) (No. 05-0466), 2005 WL 3775561. A schematic showing the layout of the Shares is available in the case. *Coastal*, 268 S.W.3d at 5.

22. *Coastal*, 268 S.W.3d at 5.

23. *Id.* at 6.

24. *Id.*; see 8 HOWARD R. WILLIAMS & CHARLES J. MEYERS, OIL AND GAS LAW 404-05 (2008) (defining "frac").

25. Laura H. Burney & Norman J. Hyne, *Hydraulic Fracturing: Stimulating Your Well or Trespassing?*, 44 ROCKY MTN. MIN. L. INST. 19-1, 19-11 (1998).

26. *Id.* The fracing fluid is called "pad." *Id.*

27. *Id.* Proppants are small granules—sand, ceramic beads, or bauxite—used to hold the fractures open. *Coastal*, 268 S.W.3d at 6-7.

proppant behind to hold the fractures open.²⁸ The resulting fractures increase the well's exposure to the formation, thus allowing for greater production.²⁹

The relationship between Coastal and Salinas began in 1969 when Coastal obtained oil and gas leases from the Garza Energy Trust and the surrounding landowners.³⁰ Coastal began drilling wells on Share 13 in 1978.³¹ Between 1978 and 1983, Coastal drilled three wells on this property.³² In 1994, Coastal drilled the M. Salinas No. 3 on Share 13 about 1,700 feet from Share 12.³³ Then in 1996, Coastal drilled the Coastal Fee No. 1 on Share 12 "as close to Share 13 (and the M. Salinas No. 3) as [the] Texas Railroad Commission's statewide spacing Rule 37 permitted—467 feet from the boundar[y]."³⁴ The location of the Coastal Fee No. 1 became problematic for Coastal.³⁵ The Coastal Fee No. 1 was too close to another well on Share 12, the Pennzoil Fee No. 1, and the Texas Railroad Commission (Commission) would not grant an exception to allow both wells to remain.³⁶ The Commission denied the exception because both of the wells on Share 12 would drain from Share 13.³⁷

Ultimately, Coastal drained substantial amounts of gas from beneath Salinas' land by fracturing the Coastal Fee No. 1 on Share 12.³⁸ In this case, the lease line was 660 feet from the well and the hydraulic length of the fracture was designed to reach over 1,000 feet from the well.³⁹ An expert for Salinas testified that "because of the fracing operation on the Coastal [Fee] No. 1 well, 25-35% of the gas it produced drained from Share 13. . . . [This expert] calculated the value of th[e] gas

28. Burney & Hyne, *supra* note 25, at 19-11.

29. *Coastal*, 268 S.W.3d at 7. The length of a fracture is measured in three ways. *Id.* The longest measurement is the hydraulic length, measured by the distance the fracing fluid will travel. *Id.* The propped length is the "slightly shorter distance the proppant will reach." *Id.* The shortest length is the effective length, which measures the distance within which the fracture will actually improve production. *Id.*

30. Respondents' Brief on the Merits, *supra* note 21, at *1. Coastal obtained the oil and gas leases for Share 12, Share 13, and Share 15 in 1969. *Id.*

31. *See Coastal*, 268 S.W.3d at 6.

32. *Id.* Only two of the three wells drilled were productive. *Id.*

33. *Id.* The M. Salinas No. 3 was considered to be an exceptional producer. *Id.*

34. *Id.* Coastal drilled the Coastal Fee No. 1 because the Pennzoil Fee No. 1 was not as close to Share 12 as Coastal would have liked. *Id.* "In February 1997, Coastal drilled the Coastal Fee No. 2, also near Share 13. In March, Salinas sued Coastal for breach of its implied covenants to develop Share 13 and prevent drainage." *Id.* Salinas' suit prompted Coastal to drill eight wells in fourteen months on Share 13. *Id.*

35. Respondents' Brief on the Merits, *supra* note 21, at *3.

36. *Coastal*, 268 S.W.3d at 6. The Texas Railroad Commission (Commission) is charged with "mak[ing] and enforce[ing] rules and regulations for the conservation of oil and gas." *Peterson v. Gracye Oil Co.*, 37 S.W.2d 367, 370 (Tex. App. 1931).

37. *Coastal*, 268 S.W.3d at 6.

38. *See id.* at 8. Hydraulic fracture treatments are designed specifically for each well. *See id.* at 7. Engineers select "the injection pressure, volumes of material injected, and type of proppant to achieve a desired result based on data regarding the porosity, permeability, and modulus (elasticity) of the rock, and the pressure and other aspects of the reservoir." *Id.*

39. *Id.*

[drained] to be between \$388,000 and \$544,000.”⁴⁰ Although Coastal fractured all of the wells on Share 12 and Share 13, the fracture of the Coastal Fee No. 1 formed the basis for this lawsuit.⁴¹

On April 4, 2001, Salinas and Coastal appeared in the District Court of Texas for a jury trial based on Coastal’s alleged trespass on Share 13.⁴² The jury found that “Coastal’s fracing of the Coastal Fee No. 1 well trespassed on Share 13” and awarded \$1 million in damages for lost royalties due to drainage.⁴³ The jury also awarded \$10 million in punitive damages because it found that “Coastal acted with malice and appropriated Salinas’s property unlawfully.”⁴⁴ In addition, the court awarded Salinas \$1.4 million in attorney’s fees.⁴⁵ Coastal appealed the decision.⁴⁶ The Texas Court of Appeals affirmed in part and remanded the case for a redetermination of the award of attorney’s fees.⁴⁷

III. BACKGROUND

In trespass cases, the court must define the parties’ property rights before determining whether a trespass occurred.⁴⁸ Section III.A defines property rights and section III.B defines trespass. If *Coastal* involved a surface trespass, the analysis would stop with defining the surface ownership rights. *Coastal*, however, dealt with a subsurface trespass, which implicates a more complex ownership regime that includes traditional ownership concepts modified by the doctrine of correlative rights and the rule of capture. In an oil and gas context, the doctrine of correlative

40. *Id.* at 8.

41. *See id.* at 7.

42. *See* Garza Energy Trust v. Coastal Oil & Gas Corp., No. C-1313-97-F, 2001 WL 35832908 (Tex. Dist. Ct. Dec. 17, 2001). Bellwether Exploration Co. was also a defendant in this case. *Id.* This is not the first time Salinas has been a party to a lawsuit involving Share 13. Salinas’ court battles began in 1978 when Coastal interpleaded Salinas in an action to resolve disagreements among Share 13 owners over their respective interests; this was resolved in 1982. *Coastal*, 268 S.W.3d at 5-6. In 1988 and again in 1995, many Share 13 owners sued over their boundary with Share 15; this issue was not resolved until 1999. *Id.* at 6.

In addition to the alleged trespass committed by Coastal, other issues before the jury included a claim against Coastal for bad-faith pooling and failure to develop. *See id.* at 8. For an explanation of the facts related to the claim for bad-faith pooling, see *Coastal*, 268 S.W.3d at 7-8. The jury found that Coastal failed to reasonably develop Share 13 and awarded \$1.75 million in damages. *Id.* at 8. The jury also found that Coastal breached its duty to pool in good faith and awarded \$1 million in damages. *Id.* The trial court reduced the damages for bad-faith pooling from \$1 million to \$81,619, the maximum amount supported by the evidence. *Id.*

43. *Coastal*, 268 S.W.3d at 8. The trial court reduced the damages for drainage from \$1 million to \$543,776, which was the maximum amount supported by the evidence. *Id.*

44. *Id.*

45. *Id.*

46. Mission Res., Inc. v. Garza Energy Trust, 166 S.W.3d 301 (Tex. App. 2005). Mission Res., Inc. was formerly known as Bellwether Exploration Co. *Id.* at 309 n.1.

47. *Coastal*, 268 S.W.3d at 8-9. The Texas Court of Appeals remanded the case to the district court for a redetermination of attorney’s fees because the jury awarded fees for the prosecution of an issue in which no damages were awarded. *Id.*

48. Determining property rights is important because damages are based on the extent of the loss of a property right. *See* 1 EUGENE KUNTZ, A TREATISE ON THE LAW OF OIL AND GAS § 2.6, at 78, 80 (1987) (referring to the measure of damages in an action to condemn land being computed by determining the extent of the loss of the property rights).

rights and the rule of capture are important. Section III.C will discuss the rule of capture and section III.D will discuss correlative rights.

A. Property Rights

“Cujus est solum, ejus est usque ad coelum ad infernos” is an old maxim meaning the owner of the land owns everything to the sky above and the depths below.⁴⁹ Unless the estate is divided, the owner is entitled to free and unfettered control of his own land—above, upon, and beneath the surface—subject, however, to some use limitations.⁵⁰ Free and unfettered control includes the right to exclude others from using the surface and subsurface.⁵¹ Landowners are not free, however, to use their land in any manner they see fit. Although every landowner is entitled to make a reasonable use of his property, he cannot use it in a manner that would injure his neighbor’s property.⁵²

A landowner whose land overlies an oil and gas reservoir has a right to drill and reduce to possession the oil and gas beneath his land.⁵³ In addition to the right to drill, the landowner can also take measures to increase the flow to his well.⁵⁴ The right to increase the flow to one’s well, however, is limited by the state’s police power, as well as the doctrine of correlative rights.⁵⁵

Depending on the state where a landowner drills for oil and gas, a landowner may or may not have a possessory interest in the oil and gas in the ground before it is produced. There are two main theories of ownership for oil and gas: “ownership-in-place” and “exclusive right to take.”⁵⁶ Whichever theory a state adopts, the court must consider own-

49. *Edwards v. Sims*, 24 S.W.2d 619, 620 (Ky. 1930).

50. *Id.*

51. *See Chance v. BP Chems., Inc.*, 670 N.E.2d 985, 992 (Ohio 1996) (stating that a landowner has the right to exclude invasions of the subsurface property).

52. *Hoover v. Horton*, 209 S.W.2d 646, 649 (Tex. App. 1948). In determining what a reasonable use is, the owner should keep in mind all interests affected, including: his private interest, the interests of his neighbors, and public policy. *Id.* Actions that might injure a neighbor’s right include erecting and maintaining a nuisance. *People’s Gas Co. v. Tyner*, 31 N.E. 59, 60 (Ind. 1982).

53. *See Ohio Oil Co. v. Indiana*, 177 U.S. 190, 209 (1900) (stating that “as to gas and oil the surface proprietors within the gas field all have the right to reduce to possession the gas and oil beneath”).

54. *See People’s Gas Co.*, 31 N.E. at 60 (stating that “no valid reason can be given why [the landowner] may not enlarge his well by the explosion of nitroglycerin therein for the purpose of increasing the flow” and that an injunction could not be sustained on the ground that the flow of gas will be increased).

55. *See Peterson v. Gracye Oil Co.*, 37 S.W.2d 367, 370 (Tex. App. 1931) (“The commission shall make and enforce rules and regulations for the conservation of oil and gas.”). An example of a limitation would be the use of vacuum pumps in Texas, which are prohibited except in certain cases. *See id.*; *see also infra* Section III.D (discussing correlative rights).

56. 1 KUNTZ, *supra* note 48, § 2.4, at 65. Other theories of ownership have been advanced, but the “ownership-in-place” and “exclusive right to take” theories are the prominent theories of ownership. *See* 1 HOWARD R. WILLIAMS & CHARLES J. MEYERS, OIL AND GAS LAW § 203, at 32 (2008) (including among the other theories of ownership the qualified ownership theory and the ownership of the strata theory). When it comes to choosing which theory applies, “secondary authorities are not completely consistent in their analyses of the position taken by [a] particular state[.]” *Id.* (comparing the views of seven secondary authorities). Under the qualified ownership theory, “oil and gas are a

ership in conjunction with the rule of capture.⁵⁷ Under the “exclusive right to take” theory, the landowner does not own the oil and gas beneath his land, but merely has the exclusive right to capture it by operations on his land.⁵⁸ In other words, “no person owns oil and gas until it is produced and any person may ‘capture’ the oil and gas if able to do so.”⁵⁹

Under the “ownership-in-place” theory, the law considers oil and gas to be part of the realty;⁶⁰ therefore, the landowner has a present possessory interest in the oil and gas beneath his land.⁶¹ Texas has adopted this theory.⁶² However, under either theory, a landowner is entitled to bring a civil action against another party whose actions adversely affect the landowner’s oil and gas interest.⁶³ Trespass constitutes one such civil action.⁶⁴

B. Trespass

The *Restatement (Second) of Torts* defines “trespass” to include a person intentionally entering land in possession of another or causing a thing to do so.⁶⁵ As the comments to the *Restatement* indicate, a tres-

part of the land and belong to the owner thereof as long as they remain in or on the land; upon migration to another tract the title of the former owner is lost.” David Edward Pierce, *Coordinated Reservoir Development—An Alternative to the Rule of Capture for the Ownership and Development of Oil and Gas*, 4 J. ENERGY L. & POL’Y 1, 14 (1983) (quoting R. HEMINGWAY, *THE LAW OF OIL AND GAS* § 1.3, at 13 n.71 (1971)). According to Kuntz, the distinction between the two theories is mainly one of terminology. 1 KUNTZ, *supra* note 48, § 2.4, at 65 (“The adoption of a theory of ownership ultimately represents little more than the selection of an acceptable method of describing ownership in the light of the law of capture.”).

57. See *Elliff v. Texon Drilling Co.*, 210 S.W.2d 558, 561 (Tex. 1948); see also *infra* section III.C (explaining the rule of capture).

58. 1 KUNTZ, *supra* note 48, § 2.4, at 65. The “exclusive right to take” theory is also known as the nonownership theory. *Id.* § 2.4, at 67. The following jurisdictions have adopted the nonownership theory: California, Illinois, Indiana, Kentucky, Louisiana, New Mexico, New York, Oklahoma, and Wyoming. *Id.* But see 1 WILLIAMS & MEYERS, *supra* note 56, § 203, at 32.2 tbl. (indicating, through depiction in a table, that secondary authorities are not consistent in the classification of each state’s ownership theory); Pierce, *supra* note 56, at 14-15 n.55 (stating that Oklahoma has adopted the theory of qualified ownership).

59. 1 WILLIAMS & MEYERS, *supra* note 56, § 203.1, at 33.

60. See 1 ERNEST E. SMITH & JACQUELINE LANG WEAVER, *TEXAS LAW OF OIL AND GAS* § 1.2, at 1-15 (2d ed. 1998).

61. *Elliff*, 210 S.W.2d at 561.

62. 1 SMITH & WEAVER, *supra* note 60, § 1.2, at 1-15. In addition to Texas, the following jurisdictions have adopted the ownership-in-place theory: Alabama, Arkansas, Colorado, Kansas, Michigan, Mississippi, Montana, Ohio, Pennsylvania, Tennessee, and West Virginia. 1 KUNTZ, *supra* note 48, § 2.4, at 66. But see 1 WILLIAMS & MEYERS, *supra* note 56, § 203, at 32.2 tbl.; 1 WILLIAMS & MEYERS, *supra* note 56, § 203.1, at 33 (stating that Alabama has adopted the nonownership theory).

63. See *Mrs. Gas & Oil Co. v. Ind. Natural Gas & Oil Co.*, 57 N.E. 912, 917 (Ind. 1900); 1 SMITH & WEAVER, *supra* note 60, § 1.2, at 1-17. In an “ownership-in-place” jurisdiction, the types of civil actions include title claims, claims for injury to real estate, or other types of real property actions. *Id.*

64. See *Starrh & Starrh Cotton Growers v. Aera Energy, L.L.C.*, 63 Cal. Rptr. 3d 165, 182 (Ct. App. 2007) (“A trespass violates a landowner’s property rights.”).

65. RESTATEMENT (SECOND) OF TORTS § 158 (1965); see *Gregg v. Delhi-Taylor Oil Corp.*, 344 S.W.2d 411, 416 (Tex. 1961) (stating that entry can occur by causing a thing to cross the boundary and does not require a person to enter). The *Restatement* definition also includes remaining on land of another or failing to remove a thing that the person is under a duty to remove. RESTATEMENT

pass can occur not only on the surface, but also above and below the surface.⁶⁶ A trespass does not occur when such an intrusion is privileged.⁶⁷ Privilege is obtained through consent of the property owner or by law.⁶⁸ Under the ad coelum doctrine, trespass would be defined by striking a plane from the surface boundary lines to the earth's center.⁶⁹ This plane "marks off the boundary between right and trespass . . . somewhere on one side lies absolute immunity, and, on the other, absolute responsibility."⁷⁰

In most states, subsurface trespass is included under the law of trespass.⁷¹ There are at least three types of subsurface entries that may result in a subsurface trespass: "(1) directionally drilled wells; (2) injected fluids in enhanced recovery projects; and (3) hydraulic fracture operations."⁷²

Directional drilling is a clear example of a subsurface trespass.⁷³ Directional drilling occurs when the well is drilled on the landowner's property but is bottomed on the neighbor's land.⁷⁴ The issue of subsurface trespass is not as clear when a well is bottomed on the landowner's property and resources are pumped down the well that migrate onto or fracture an adjacent landowner's property. The difficulty arises when trying to determine the length of the fracture and whether it crosses property lines.⁷⁵

In cases involving secondary recovery by water flooding, the Texas Supreme Court has held that no trespass occurs when the injecting party

(SECOND) OF TORTS § 158.

66. RESTATEMENT (SECOND) OF TORTS § 158 cmt. g.

67. *Id.* § 158 cmt. e.

68. *Id.* In *Geo Viking, Inc. v. Tex-Lee Operating Co.*, the court noted that if Tex-Lee was authorized to produce oil and gas from adjoining tracts by fracing, then there would not be a trespass. No. D-1678, 1992 WL 80263, at *2 (Tex. Apr. 22, 1992), *withdrawn*, 839 S.W.2d 797 (Tex. 1992).

69. See *Comanche Duke Oil Co. v. Tex. Pac. Coal & Oil Co.*, 298 S.W. 554, 559 (Tex. Comm'n App. 1927); BLACK'S LAW DICTIONARY 40 (8th ed. 2004) (defining the "ad coelum doctrine" as "[t]he common-law rule that a landowner holds everything above and below the land, up to the sky and down to the earth's core, including all minerals").

70. *Comanche Duke Oil Co.*, 298 S.W. at 559.

71. See, e.g., *Parks Hiway Enters., L.L.C. v. CEM Leasing, Inc.*, 995 P.2d 657, 664 (Alaska 2000); *Starrh & Starrh Cotton Growers v. Aera Energy, L.L.C.*, 63 Cal. Rptr. 3d 165, 182 (Ct. App. 2007); *Villarreal v. Grant Geophysical, Inc.*, 136 S.W.3d 265, 268 (Tex. App. 2004) (stating that under Texas law, trespass includes subsurface trespass in the oil and gas context). *But see* *Hartman v. Texaco, Inc.*, 937 P.2d 979, 980-81 (N.M. Ct. App. 1997) (holding that the statute that applies to trespass does not apply to subsurface trespass resulting from waterflooding operations).

72. Terry D. Ragsdale, *Hydraulic Fracturing: The Stealthy Subsurface Trespass*, 28 TULSA L.J. 311, 317 (1993).

73. See *Hastings Oil Co. v. Tex. Co.*, 234 S.W.2d 389, 396, 398 (Tex. 1950) (holding that the trial court did not err in ordering a survey to be conducted to determine if a trespass had occurred and that a temporary injunction could be granted by the trial court).

74. See Ragsdale, *supra* note 72, at 317 ("Drilling a well that (intentionally or inadvertently) deviates from the vertical such that the well makes a subsurface crossing of property lines presents the classical case of subsurface trespass.").

75. See *Coastal Oil & Gas Corp. v. Garza Energy Trust*, 268 S.W.3d 1, 7 (Tex. 2008) (stating that lengths cannot be measured directly and typically, each party will present the opinion of their engineer).

has permission from the Commission to carry out such operations.⁷⁶ The court stated that “[t]he orthodox rules and principles applied by the courts as regards surface invasions of land may not be appropriately applied to subsurface invasions as arise out of the secondary recovery of natural resources.”⁷⁷

The principles applied to subsurface invasions of land by waterflooding may not be appropriately applied to subsurface invasions by hydraulic fracturing because of the differences between the two operations.⁷⁸ First, cases involving hydraulic fracturing differ from waterflooding because hydraulic fracturing occurs at the initial stage of a well’s existence, that is, it is part of the primary recovery stage.⁷⁹ Without the use of hydraulic fracturing, some reservoirs would remain undeveloped.⁸⁰ Waterflooding, on the other hand, is used to recover oil and gas left in place after primary recovery is completed.⁸¹ Second, the amount of damage caused by hydraulic fracturing and waterflooding differs significantly.⁸² The final distinction is the ability to control the length of a fracture and the impossibility of preventing encroachment of water from waterfloods.⁸³

76. R.R. Comm’n of Tex. v. Manziel, 361 S.W.2d 560, 568 (Tex. 1962). The Manziels and Wheelans were the only operators in the Vickie Lynn Field. *Id.* at 562. At the time of the suit, the remaining oil in the reservoir was “dead” and the best means of recovering any remaining oil was by the secondary method of waterflooding. *Id.* The issue in the case was “whether a trespass is committed when secondary recovery waters from an authorized secondary recovery project cross lease lines.” *Id.* at 567.

77. *Id.* at 568. *Contra* Tidewater Oil Co. v. Jackson, 320 F.2d 157, 163 (10th Cir. 1963) (stating that even though waterflooding may be carried out under state law “as a legalized nuisance or trespass, the water flooders may not conduct operations in a manner to cause substantial injury to the property of a non-assenting lessee-producer in the common reservoir, without incurring the risk of liability therefor”). Secondary recovery is defined as “the oil or gas that is produced as the result of restoring reservoir energy artificially.” 1 KUNTZ, *supra* note 48, § 4.8, at 129. Energy is restored by injecting gas, air, water, or other substances into the reservoir. 1 W.L. SUMMERS, THE LAW OF OIL AND GAS § 1.7, at 6-7 (3d ed. 2004). The purpose of secondary recovery is to increase recovery and prevent waste and is not typically used until after primary recovery is completed. *See* Ana Boswell Schepens, *Prospecting for Oil at the Courthouse: Recovery for Drainage Caused by Secondary Recovery Operations*, 50 ALA. L. REV. 603, 607 (1999).

78. *See generally* John W. Broomes, *Wrestling with a Downhole Dilemma: Subsurface Trespass, Correlative Rights, and the Need for Hydraulic Fracturing in Tight Reservoirs*, 53 ROCKY MOUNT. L. INST. 20-1, 20-23 (2007) (discussing some of the differences between waterflooding and hydraulic fracturing).

79. *See* 1 KUNTZ, *supra* note 48, § 4.8, at 129.

‘[P]rimary recovery’ is the oil or gas . . . that is produced as the result of the natural sources of reservoir energy. . . . Artificial stimuli, such as pumping and fracture treatment, still result in primary recovery, for the reason that no new source of reservoir energy has been provided artificially.

Id.

80. *See Coastal*, 268 S.W.3d at 29 (Willett, J., concurring).

81. Laura H. Burney, *A Pragmatic Approach to Decision Making in the Next Era of Oil and Gas Jurisprudence*, 16 J. ENERGY NAT. RESOURCES & ENVTL. L. 1, 27 (1996).

82. *See* Broomes, *supra* note 78, at 20-23. There are four ways damages can be mitigated when hydraulic fracturing is used: (1) a state can restrict the rate of production of the fracing party; (2) an adjoining landowner can drill an offset well; (3) an adjoining landowner can frac their well; and (4) the landowner or operator can shut in the offending well. *Id.* When waterflooding is used, all of the moveable oil and gas is swept out and the wells “water out.” *Id.* at 20-23 to 20-24. Waterflooding will completely destroy the potential to produce oil and gas from the flooded zones. *Id.*

83. *See id.* at 20-25 (“[I]t is physically impossible to prevent encroachment of the secondary

Until *Coastal*, no decision had directly addressed subsurface trespass by fracing.⁸⁴ In 1961, the Texas Supreme Court stated in dicta that sand fracturing that caused cracks to cross property lines would constitute a trespass.⁸⁵ In a decision thirty years later, which was subsequently withdrawn, the court held that “[f]racing under the surface of another’s land constitutes a subsurface trespass.”⁸⁶ As described below in section IV, the Texas Supreme Court has now decided that the rule of capture prevents the owner from recovering damages under a trespass claim in hydraulic fracturing cases.⁸⁷

C. The Rule of Capture

As applied to oil and gas, the rule of capture dates back to the latter part of the nineteenth century around the time the first commercial well was drilled in Pennsylvania.⁸⁸ Before courts had knowledge of technical realities, oil and gas were analogized to water, minerals that

water onto nearby lands. . . . Conversely, fracture treatments can usually be designed to keep the fracture from crossing lease lines.”)

84. See Burney & Hyne, *supra* note 25, at 19-37 (stating that courts have rarely been asked to determine if fracing constitutes an actionable trespass). In Kansas, the issue of hydraulic fracturing came up, not in the context of trespass, but in the context of correlative rights. See Zinke & Trumbo, Ltd. v. State Corp. Comm’n, 749 P.2d 21, 27 (Kan. 1988). In that case, Zinke drilled six wells in the Morrow Sand. *Id.* at 23. Sho-Bar Energy obtained a lease nearby and drilled a well as close as possible to Zinke’s well and then fractured it. *Id.* Sho-Bar’s well was only 330 feet from Zinke’s lease and experts testified that the fracture would extend 400 feet. *Id.* at 27. After the fracture treatment, the open flow of the well increased over five times its natural flow. *Id.* at 23. The issue in this case arose from a proration order issued by the Kansas Corporation Commission (KCC). See *id.* at 24. Zinke claimed that the proration formula gave Sho-Bar a “tremendous reward for trespass.” *Id.* at 27 (this was the only mention of trespass in the case). The KCC is charged with protecting correlative rights. *Id.* at 24. In making the proration order, the KCC was to consider “acreage, pressure, open flow, porosity, permeability and thickness of pay, and such other factors, conditions and circumstances as may exist in the common source of supply under consideration at the time, as may be pertinent.” *Id.* The court held that the KCC, under its duty to protect correlative rights, should have recognized the fracture treatment that extended into Zinke’s lease as one of the “other factors . . . which must be considered in making a proration order.” *Id.* at 28.

85. See *Gregg v. Delhi-Taylor Oil Corp.*, 344 S.W.2d 411, 416 (Tex. 1961). The court in *Gregg* was not called upon to decide the issue of subsurface trespass by sand fracturing, but rather to decide whether the Commission or the courts had primary jurisdiction to enjoin sand fracturing. *Id.* at 412. In this case, Gregg drilled a well on his 0.42 acre oil and gas lease within eighty feet of Delhi-Taylor’s lease. *Id.* Gregg’s lease was surrounded by mineral estates owned by Delhi-Taylor Oil Corp. and Mayfair Minerals, Inc. *Id.* Upon finding out that Gregg planned to use hydraulic fracturing to increase the productivity of his well, Delhi-Taylor sought to enjoin him from committing a subsurface trespass. *Id.* Although not the main issue in the case, the court determined that the fracture would, in effect, partially complete the well in the adjoining tract. *Id.* at 416.

86. *Geo Viking, Inc. v. Tex-Lee Operating Co.*, No. D-1678, 1992 WL 80263, at *2 (Tex. Apr. 22, 1992), *withdrawn*, 839 S.W.2d 797 (Tex. 1992). In this case, a 2,500 foot fracture extended beyond the boundary lines. *Id.* at *1. The court did not analyze the issue in depth and merely stated that there would be a trespass. See *id.* at *2. The rule of capture did not apply in this case because the fracing resulted in a trespass. *Id.* The court stated that “[a]lthough oil and gas are subject to legitimate drainage under the law of capture, the owner ‘is accorded the usual remedies against trespassers who appropriate the minerals or destroy their market value.’” *Id.* (quoting *Elliff v. Texon Drilling Co.*, 210 S.W.2d 558, 561 (Tex. 1948)).

87. *Coastal Oil & Gas Corp. v. Garza Energy Trust*, 268 S.W.3d 1, 12-13 (Tex. 2008).

88. Bruce M. Kramer & Owen L. Anderson, *The Rule of Capture—An Oil and Gas Perspective*, 35 ENVTL. L. 899, 900 (2005). The first commercial well was drilled in 1859 by Colonel E.L. Drake. *Id.*

are a part of the physical land, and wild animals.⁸⁹ Today, the law designates oil and gas before it is produced as being an interest in land.⁹⁰ Under the rule of capture, an “owner of a tract of land acquires title to the oil or gas which he produces from wells on his land, [even] though part of the oil or gas may have migrated from adjoining lands.”⁹¹ The rule of capture shields a landowner from liability for operations on his land that drain oil from beneath his neighbor’s land; “the neighbor’s remedy is to ‘go and do likewise.’”⁹² The remedy to go and do likewise is a sort of correlative right.⁹³

The rule of capture does not operate without limitations.⁹⁴ First, the landowner will only become the owner of oil and gas that is legally recovered.⁹⁵ Legal recovery may depend on whether a landowner remains within his vertical property boundaries⁹⁶ and whether a landowner abides by state conservation statutes and orders.⁹⁷ Second, under the rule of capture, a landowner or operator will not be liable for *rea-*

89. 1 SUMMERS, *supra* note 77, § 1.1, at 2.

90. *Id.* § 2.1, at 9-10; *see supra* notes 56-63 and accompanying text (explaining ownership in oil and gas).

91. *Elliff*, 210 S.W.2d at 561-62. In addition to the rule of capture, there is a negative rule of capture theory. *See* 1 WILLIAMS & MEYERS, *supra* note 56, § 204.5, at 60.

Just as under the rule of capture a landowner may capture such oil or gas as will migrate from adjoining premises to a well bottomed on his own land, so also may he inject into a formation substances which may migrate through the structure to the land of others, even if this results in the displacement under such land of more [sic] valuable with less valuable substances.

Id. The only case to recognize the negative rule of capture is *R.R. Comm’n of Tex. v. Manziel*, 361 S.W.2d 560 (Tex. 1962). *See Burney & Hyne*, *supra* note 25, at 19-24.

92. *Burney*, *supra* note 81, at 9.

93. *See Halbouty v. R.R. Comm’n of Tex.*, 357 S.W.2d 364, 375 (Tex. 1962) (stating, when discussing the rule of capture, that “[i]f the owners of adjacent lands have the right to appropriate, without liability, the gas and oil underlying their neighbor’s land, then their neighbor has the correlative rights to appropriate, through like methods of drainage, the gas and oil underlying the tracts adjacent to his own”) (quoting *Stephens v. Mid-Kansas Oil & Gas Co.*, 254 S.W. 290, 292 (Tex. 1923)); *see also infra* Section III.D (discussing correlative rights).

94. *See Kramer & Anderson*, *supra* note 88, at 916.

[There are] four limitations on the rule of capture: 1) one only has the right to capture the natural flowage of gas; 2) one must only use reasonable means to capture the gas; 3) one must not cause injury to the common source of supply; and 4) one cannot destroy the common source of supply.

Id. (citing *Mfrs.’ Gas & Oil Co. v. Ind. Natural Gas & Oil Co.*, 57 N.E. 912, 915-16 (Ind. 1900)). “Natural flow is defined to include only that amount of gas that would flow into the well bore when ‘retarded only by atmospheric pressure.’” *Id.* at 917 (quoting *Richmond Natural Gas Co. v. Enter. Natural Gas Co.*, 66 N.E. 782, 786 (Ind. App. 1903)). In *Manufacturers’ Gas & Oil Co.*, Indiana Natural Gas & Oil Co. (Appellee) had two wells that were using pumping machinery and other devices that increased the natural flow of gas to the wells. *Mfrs.’ Gas & Oil Co.*, 57 N.E. at 917.

[T]he effect of the use of such machinery and devices is to remove the back pressure by which the gas is confined in the Trenton rock, [causing] a vast body of salt water, lying underneath and surrounding the reservoir, [to] rush[] into the reservoir and destroy[] it, [thereby] putting an entire stop to the flow of natural gas therein.

Id. An injunction was proper in this case because of the destructive effect and threatened injury that the use of pumping machinery would have on the reservoir. *See id.*

95. *See Halbouty*, 357 S.W.2d at 375.

96. *See* 1 KUNTZ, *supra* note 48, § 4.2, at 117 (stating that for the rule of capture to apply, the owner or operator must remain within their surface and vertical boundaries); *see also supra* Section III.B (discussing trespass).

97. *See Wronski v. Sun Oil Co.*, 279 N.W.2d 564, 570 (Mich. Ct. App. 1979).

sonable and *legitimate* drainage of the common pool.⁹⁸ Legitimacy and reasonableness may depend on the method of production, that is, whether production occurred from a natural flow, from pumping by ordinary means, or by artificial methods.⁹⁹ The rule of capture cannot be validly exercised if fracing constitutes a trespass.¹⁰⁰

One final consideration regarding the rule of capture is the fair share principle and the doctrine of correlative rights.¹⁰¹ States that undertake to protect the correlative rights of owners over a common reservoir do not apply a “strict right” of capture:¹⁰² Rather, in these states,

laws and regulations are designed to afford each owner a reasonable opportunity to produce his proportionate part of the oil and gas from the entire pool and to prevent operating practices injurious to the common reservoir. In this manner, if all operators exercise the same degree of skill and diligence, each owner will recover in most instances his fair share of the oil and gas. This reasonable opportunity to produce his fair share of the oil and gas is the landowner’s common law right under [the] theory of absolute ownership of the minerals in place.¹⁰³

Well-spacing regulations¹⁰⁴ and proration orders, set by each state’s oil and gas authority, help landowners capture their fair share of oil and gas while at the same time protecting the correlative rights of landowners.¹⁰⁵ The fair share principle not only mitigates the harshness of the rule of capture by protecting the landowner’s property rights in oil and gas beneath his land,¹⁰⁶ but it recognizes the existence of correlative rights between landowners over a common reservoir.¹⁰⁷

98. See *Elliff v. Texon Drilling Co.*, 210 S.W.2d 558, 562 (Tex. 1948).

99. See *Peterson v. Gracye Oil Co.*, 37 S.W.2d 367, 372 (Tex. App. 1931) (stating that the right of a landowner to recover his fair share of oil and gas is limited to “production of oil from a natural flow or from pumping by ordinary methods, to the exclusion of the artificial method of vacuum pumps”). But see 1 KUNTZ, *supra* note 48, § 4.2, at 118 (stating that artificial means may be used to stimulate production even though, in effect, it is draining the oil and gas from the land of another).

100. *Burney & Hyne*, *supra* note 25, at 19-39; see *Geo Viking, Inc. v. Tex-Lee Operating Co.*, No. D-1678, 1992 WL 80263, at *2 (Tex. Apr. 22, 1992), *withdrawn*, 839 S.W.2d 797 (Tex. 1992).

101. See 8 WILLIAMS & MEYERS, *supra* note 24, at 214.

[There are] two aspects of the doctrine of correlative rights: (1) as a corollary of the rule of capture, each person has a right to produce oil from his land and capture such oil or gas as may be produced from his well, and (2) a right of the land owner to be protected against damage to a common source of supply and a right to a fair and equitable share of the source of supply.

Id.

102. 38 AM. JUR. 2D *Gas and Oil* § 11 (1999).

103. *Elliff*, 210 S.W.2d at 562.

104. See *id.*

105. See, e.g., *Wronski v. Sun Oil Co.*, 279 N.W.2d 564, 571 (Mich. 1979). In Michigan, the Supervisor of Wells serves the function of “protect[ing] the interests of its citizens and land owners from unwarranted waste of gas and oil and foster[ing] the development of the industry.” *Id.* at 568. To carry out this function, the Supervisor is empowered to make and enforce rules. *Id.* In Texas, the Railroad Commission has general powers to regulate the oil and gas production. See R.R. Comm’n of Tex. v. Manziel, 361 S.W.2d 560, 572 (Tex. 1962). The Railroad Commission has two duties: (1) look at each field and determine what is necessary to prevent waste; and (2) allow each operator to recover his fair share of the oil beneath his land. *Id.*

106. *Wronski*, 279 N.W.2d at 569.

107. See *Elliff*, 210 S.W.2d at 562.

D. The Doctrine of Correlative Rights

Like the oil and gas rule of capture, the doctrine of correlative rights developed in Pennsylvania in the nineteenth century.¹⁰⁸ Correlative rights are not created by statute; rather, they “exist because of the peculiar physical facts of oil and gas.”¹⁰⁹ The doctrine originated in a case that involved digging a water well so close to a neighbor’s well that it diverted water away from the neighbor; the owner’s rights were considered not to be absolute and exclusive, but rather qualified and correlative.¹¹⁰ The same principle applies in an oil and gas context.¹¹¹ In 1900, the United States Supreme Court recognized the doctrine of correlative rights.¹¹²

Under the doctrine of correlative rights, each landowner in a common reservoir of oil and gas has legal rights and duties.¹¹³ Each landowner has a legal privilege to take oil and gas through lawful operations on his land.¹¹⁴ Each landowner also has a duty to other landowners over the common reservoir not to exercise his privilege in a manner that would injure the common reservoir.¹¹⁵ In other words, under the doctrine of correlative rights, landowners over a common reservoir have reciprocal rights and duties.¹¹⁶

According to Eugene Kuntz, author of *A Treatise on the Law of Oil and Gas*, the doctrine of correlative rights can be viewed as treating the landowners over a common source of supply as being within a special community.¹¹⁷ In this community, the doctrine of correlative rights

108. See generally *Hague v. Wheeler*, 27 A. 714 (Pa. 1893) (explaining the doctrine of correlative rights as applied in an oil and gas context).

109. *Elliff*, 210 S.W.2d at 562; see 1 SUMMERS, *supra* note 77, § 3.9, at 147.

110. See *Hague*, 27 A. at 716. In *Hague*, the court stated that the owner’s right was qualified by the right of his neighbor in that the owner could not wantonly destroy the water source merely to injure his neighbor. *Id.*

111. See *id.* at 717. In an oil and gas context, when a well is drilled into a common reservoir, where oil and gas will flow from neighboring lands, the right of each owner is qualified. *Id.* In a common reservoir, “each [owner or operator] must of necessity exercise his right with some regard to the rights of the other[] [owners or operators].” *Id.* Each owner or operator is interested in preserving the reservoir, and the reckless waste of the natural resources would cause injury to all. *Id.*

112. See generally *Ohio Oil Co. v. Indiana*, 177 U.S. 190 (1900). This decision recognized that landowners have a coequal right to reduce oil and gas to possession. *Id.* at 209-10. The Court also recognized that the waste by one owner affects other surface owners. *Id.* at 203. In this case, the Court held that states could legislate to protect all the collective owners without such a regulation amounting to a taking of private property. *Id.* at 211-12.

113. *Elliff*, 210 S.W.2d at 562-63; see 1 SUMMERS, *supra* note 77, § 3.8, at 139.

The duty not to injure the common source of supply is similar to the duty of landowners not to pollute or injure a source of supply of underground water. . . . The duty not to take an undue proportion of the oil and gas can only be determined on the basis of scientific information about the common source of supply.

Id. § 3.8, at 139-40; see also *supra* note 101.

114. *Elliff*, 210 S.W.2d at 562-63; see 1 SUMMERS, *supra* note 77, § 3.8, at 139.

115. *Elliff*, 210 S.W.2d at 562-63; see 1 SUMMERS, *supra* note 77, § 3.8, at 139.

116. Pierce, *supra* note 56, at 50.

117. See 1 KUNTZ, *supra* note 48, § 4.3, at 120. In an oil and gas context, considering landowners over a common source of supply as being within a special community is a proposition created by Kuntz. See *id.* Outside of an oil and gas context, property commentators have recognized what is termed the communitarian theory of property rights. See Dan M. Kahan, David A. Hoffman &

is applied by considering what is “socially undesirable.”¹¹⁸ Courts determine social acceptability by “applying the standards applicable to conduct generally, [and by] considering the utility of the conduct in the light of its peculiar consequence to others operating in the same community.”¹¹⁹

Landowners over a common reservoir enjoy several rights against other landowners over the same reservoir. These rights include the rights against waste, spoilage, and malicious depletion, and the right to a fair opportunity to extract oil and gas and to conduct secondary recovery operations.¹²⁰ A unique problem arises when landowners over a common reservoir seek to enjoin the operations of others who threaten to drain oil and gas.¹²¹ Allowing one owner to enjoin another creates a deadlock,¹²² which thereby limits the right of a landowner to use his property as he pleases.¹²³ In *Coastal*, the court did not consider the doctrine of correlative rights, but rather relied solely on the rule of capture in making its decision.¹²⁴

IV. COURT’S DECISION

Coastal is the first Texas Supreme Court case to decide whether hydraulic fracturing can lead to subsurface trespass.¹²⁵ In this case,

Donald Braman, *Whose Eyes Are You Going to Believe? Scott v. Harris and the Perils of Cognitive Illiberalism*, 122 HARV. L. REV. 837, 859 (2009) (stating that a communitarian order subordinates the interests of the individual to the interests of the collective). Carol Rose is one such commentator. Rose’s theory of property regimes supports the idea that owners over a common source of supply operate within a special community. See generally Carol M. Rose, *Canons of Property Talk, or, Blackstone’s Anxiety*, 108 YALE L.J. 601 (1998). According to Rose:

[P]roperty rights have always overlapped social claims with individual ones Property regimes always consist of some individual rights, mixed with some rights shared with nearby associates or neighbors, mixed with still more rights shared with a larger community, all held in relatively stable but nevertheless changing and subtly renegotiated relationships.

Id. at 631.

118. See 1 KUNTZ, *supra* note 48, § 4.3, at 120.

119. *Id.*

120. Haymaker v. Okla. Corp. Comm’n, 731 P.2d 1008, 1012 (Okla. Civ. App. 1986); 1 KUNTZ, *supra* note 48, § 4.3, at 119. For a definition of secondary recovery, see *supra* note 77. “Independent of [state regulatory] statute[s], some limitation upon the rights under the law of capture are recognized at common law. The owner may extract gas for ‘legitimate’ purposes, but another owner of land over the common source of supply may enjoin him from wasting the gas deliberately.” 1 KUNTZ, *supra* note 48, § 4.4, at 121. Spoilage of a common source of supply occurs when there is underground waste and a reduction of ultimate recovery. See *id.* § 4.5, at 123. The right to a fair opportunity to extract “does not mean that each owner is entitled to a proportionate share of the substances, but it means that owners have a right to a fair opportunity to extract oil or gas.” *Id.* § 4.7, at 126 (footnote omitted).

121. See R.R. Comm’n of Tex. v. Manziel, 361 S.W.2d 560, 568 (Tex. 1962) (stating that secondary operations would not be carried out if an adjoining landowner or operator could stop the project on the grounds of subsurface trespass); 1 KUNTZ, *supra* note 48, § 4.1, at 114.

122. 1 KUNTZ, *supra* note 48, § 4.1, at 114.

123. See *supra* Section III.A (explaining that every landowner is entitled to the reasonable use of his property); *supra* Section III.C (discussing the landowner’s right to capture oil and gas beneath his property).

124. See *Coastal Oil & Gas Corp. v. Garza Energy Trust*, 268 S.W.3d 1, 4 (Tex. 2008) (relying upon the rule of capture although mentioning correlative rights in passing).

125. See *id.* at 11-12. The issue came before the court in *Geo Viking, Inc. v. Tex-Lee Operating*

Salinas alleged that Coastal committed an actionable subsurface trespass when it fraced the Coastal Fee No. 1, causing fractures to extend beyond Coastal's boundary line.¹²⁶ Coastal pointed to the lack of precedent in support of Salinas' argument and also reasoned that it was contrary to public policy to hold it liable for subsurface trespass by hydraulic fracturing.¹²⁷ The court did not decide whether hydraulic fracturing that crosses property lines constitutes a trespass, rather it decided there was no actionable trespass because Salinas' injury was precluded by the rule of capture.¹²⁸ However, if the hydraulic fracturing had damaged wells or the Vicksburg T formation beneath Share 13, then damages might have been recoverable under a trespass cause of action.¹²⁹

Co., 839 S.W.2d 797 (Tex. 1992), however, on rehearing the court withdrew the opinion. *Coastal*, 268 S.W.3d at 12. In addition to addressing the trespass issue, the court in *Coastal* also addressed several other issues not critical to this Comment. The following is a list of the other issues and how the court decided them:

1. Whether Salinas, as a mineral lessor, had standing to sue. *Id.* at 9. The court held that as long as there was an actual injury caused by the subsurface trespass, mineral lessors with a reversionary interest would have standing to bring such an action. *Id.* at 4.

2. What is the measure of damages for breach of an implied obligation to protect from drainage. *Id.* at 17-18. The court held the measure of damages was the value of the minerals lost due to the lessee's failure to act with reasonable prudence. *Id.* at 4.

3. Whether Coastal breached the implied covenant to develop and whether, as a matter of law, the lessors' repudiation of a lease was a defense. *Id.* at 19, 20. The court held that "some evidence supported the jury's finding of breach of the implied covenant to develop, and whether lessors' repudiation of the lease was a defense was, on this record, a matter of law." *Id.* at 4.

4. Whether the evidence supported a finding of bad-faith pooling. *Id.* at 21. The court held that some evidence supported the finding of bad-faith pooling. *Id.* at 4.

5. Whether it was an abuse of discretion to admit into evidence a memorandum referring to Salinas's predecessors as "mostly illiterate Mexicans." *Id.* at 21. The court held that admitting the memorandum with the racial slur into evidence was reversible error. *Id.* at 5.

6. Whether the action filed in 1997 should have been abated while a 1988 action proceeded. *Id.* at 26. The court held that "the trial court did not abuse its discretion in refusing to abate this case for two related cases." *Id.* at 5.

126. See Respondents' Brief on the Merits, *supra* note 21, at *10-*11. Coastal and Salinas agreed that the hydraulic and propped length extended beyond Coastal's boundary lines, but disagreed over whether the effective length of the fracture extended beyond boundary lines. See *Coastal*, 268 S.W.3d at 7; *supra* note 29 (describing how fractures are measured).

127. See Petitioners' Brief on the Merits at *8-*19, *Coastal Oil & Gas Corp. v. Garza Energy Trust*, 268 S.W.3d 1 (Tex. 2008) (No. 05-0466), 2005 WL 3487532. Coastal argued that fracing is needed to economically produce natural gas in tight sand formations. See *id.* at *13. In addition, if fracing constituted a subsurface trespass, it would discourage the use of fracing, which in turn, would result in substantial waste of natural resources. *Id.* Coastal also argued that an operator who seeks to avoid trespass liability by not fracing or drilling wells could face liability for failure to develop its leases. *Id.* at *14. Coastal's final argument was that "recognizing a cause of action for subsurface trespass by fracing would impose liability . . . without fault, because operators cannot control the direction of fractures, and thus whether they cross lease lines." *Id.* at *16.

128. See *Coastal*, 268 S.W.3d at 12-13 (stating that the broader issue need not be decided). Actionable trespass requires injury. *Id.* at 12. The injury Salinas claimed was "that Coastal's fracing operation made it possible for gas to flow from beneath Share 13 to the Share 12 wells." *Id.* at 12-13. Under the rule of capture, "the gas [Salinas] claims to have lost simply does not belong to him." *Id.* at 13.

129. See *id.* Formation damage can occur during different stages of the production process: [When] a well is being drilled, drilling mud is constantly being circulated and the well is always filled to the top with mud. . . . The solid clay particles in the drilling mud are plastered onto the sides of the wellbore, building up a filter or mud cake. . . . The mud filtrate can cause changes in the reservoir rocks such as swelling of clays that severely reduce the permeability of the reservoir adjacent to the wellbore. This is called formation or skin damage and can also occur in a well during well completion or workover.

Salinas disagreed with the court's use of the rule of capture to preclude recovery of damages.¹³⁰ Salinas argued that the rule of capture should not apply because hydraulic fracturing is unnatural.¹³¹ The court dismissed this argument and interpreted "unnatural" in three ways.¹³² First, the court interpreted "unnatural" to mean that fracing is due to human intervention.¹³³ The court explained that drilling wells requires human intervention and is therefore unnatural.¹³⁴ Second, the court interpreted "unnatural" to mean that fracing is unusual.¹³⁵ The court dismissed this interpretation by explaining that fracing is commonplace in the industry and necessary for commercial production of the Vicksburg T and other formations.¹³⁶ Finally, the court interpreted "unnatural" to mean unfair.¹³⁷ The court explained that it is not unfair because the law affords Salinas ample relief;¹³⁸ Salinas may frac his own wells or sue his lessee, Coastal, for not fracing sooner.¹³⁹

Salinas' final argument was that hydraulic fracturing that extends into another's property is no different from drilling a deviated well.¹⁴⁰ The court rejected this argument and stated that hydraulic fracturing differs from a deviated well because "gas produced through a deviated well does not migrate to the wellbore from another's property; it is already on another's property."¹⁴¹ In addition, an owner or lessee "cannot protect against drainage from a deviated well by drilling his own well."¹⁴² The rule of capture is justified by the landowner's ability to protect his interest by drilling his own well.¹⁴³ In a deviated-well case a

Burney & Hyne, *supra* note 25, at 19-9 to 19-10. A formation can also be damaged by the contact of stimulation fluids with the producing formation. Adel M. Hemeida & Ahmed A. Gawish, *Formation Damage Tests of Some Completion Fluids*, OIL & GAS BUS., 2008, http://www.ogbus.ru/eng/authors/Hemeida/Hemeida_2.pdf. "This damage is caused by the precipitation of suspended solids in treating fluids and plugging the pore channels." *Id.* Another concern when drilling is the protection of ground water, specifically drinking water aquifers. See API, *supra* note 14. Today, the use of diesel fuel in the fracturing process of coalbeds is regulated by the Safe Drinking Water Act. See *id.*

130. *Coastal*, 268 S.W.3d at 13. Salinas argued that the rule of capture should not apply. *Id.*

131. *Id.*

132. *Id.*

133. *Id.*

134. *Id.*

135. *Id.*

136. *Id.*

137. *Id.*

138. *Id.*

139. *Id.* Coastal has fraced all the wells on Share 13 and Salinas has sued Coastal for not fracing sooner. *Id.*

140. *Id.* A deviated well is another term for a directionally drilled well.

141. *Id.* at 14. The dissent did not agree with the court's logic behind the deviated-well analogy. See *id.* at 44 (Johnson, J., dissenting). The dissent analyzed the similarities and differences between hydraulic fracturing that crosses property lines and a deviated well. *Id.* The similarity between a deviated well and hydraulic fracturing that extends past property lines is that they both involve intentional actions by the operator which results in inserting foreign materials into another's property and draining oil and gas by means of that foreign material. *Id.* The differences are the amount of drainage that can be prevented by offset wells and "a fracture's exposure to the reservoir may be greater than that of a deviated well and thus drain more gas." *Id.*

142. *Id.* at 14 (majority opinion).

143. *Id.* ("The rule of capture is justified because a landowner can protect himself from drainage

landowner cannot protect his interest, therefore the rule of capture does not apply.¹⁴⁴

In addition to rejecting Salinas' arguments, the court listed four reasons for its refusal to "change the rule of capture to allow one property owner to sue another for oil and gas drained by hydraulic fracturing that extends beyond [property] lines."¹⁴⁵ The court discussed the first justification, that the law provides recourse, when it addressed Salinas' argument that hydraulic fracturing was unnatural and therefore not protected by the rule of capture.¹⁴⁶ Aside from drilling or suing the lessee, the owner can offer to pool.¹⁴⁷ Second, if the court allows recovery for trespass by hydraulic fracturing, it "usurps to courts and juries the lawful and preferable authority of the Railroad Commission to regulate oil and gas production."¹⁴⁸ Third, the litigation process is the least well-equipped to determine the value of oil and gas drained by fracing.¹⁴⁹

Difficulties arise because trial judges and juries cannot take into account important factors, such as social policies, industry operation, and the greater good, in deciding whether fracing that crosses property lines should constitute a trespass.¹⁵⁰ More specifically, judges and juries cannot consider whether fracing is essential, not optional, to the recovery of oil and gas in many areas.¹⁵¹ Amicus briefs filed by interested associations and corporations in the oil and gas industry are the basis for the court's final justification—"the law of capture should not be changed to apply differently to hydraulic fracturing because no one in the industry appears to want or need the change."¹⁵²

Justice Don Willett agreed with the result of the opinion, but on different grounds.¹⁵³ Justice Willett reasoned that if "tres-frac"—

by drilling his own well, thereby avoiding the uncertainties of determining how gas is migrating through a reservoir.").

144. *Id.*

145. *Id.*

146. *Id.*

147. *Id.* Pooling has been used to achieve the goals of conservation—"more narrowly referred to as prevention of waste—and the protection of correlative rights." 1 BRUCE M. KRAMER & PATRICK H. MARTIN, *THE LAW OF POOLING AND UNITIZATION* § 1.01, at 1-3 (3d ed. 2008).

Pooling, or a pooled unit, . . . describe[s] the joining together of small tracts or portions of tracts for the purpose of having sufficient acreage to receive a well drilling permit under the relevant state or local spacing laws and regulations, and for the purpose of sharing production by interest owners in such a pooled unit.

Id. § 1.02, at 1-3. If an offer to pool is rejected, the landowner or operator may apply to the Commission for forced pooling. *Coastal*, 268 S.W.3d at 14. In addition, the Commission can regulate production to prevent drainage. *Id.*

148. *Coastal*, 268 S.W.3d at 14-15. It is up to the Commission to regulate production of oil and gas so as to prevent waste and protect correlative rights. *Id.* at 15.

149. *Id.* at 16.

150. *Id.*

151. *Id.*

152. *Id.* at 16-17 (stating that "briefs from every corner of the industry . . . all oppose liability for hydraulic fracturing, almost always warning of adverse consequences in the direst language"); see *id.* at 17 n.56 (discussing the amicus briefs submitted).

153. *Id.* at 29 (Willett, J., concurring).

trespass liability for fracking—suits were not barred, much of the state’s energy supplies would remain undeveloped.¹⁵⁴ Unlike the majority, Justice Willett would have ruled that no trespass occurred at all.¹⁵⁵ Nonetheless, Justice Willett stated that plaintiffs could sue for nondrainage damages under the theory of negligence.¹⁵⁶

The dissenting justices disagreed with the majority’s approach to this case.¹⁵⁷ First, the dissent would have analyzed whether hydraulic fracturing that crosses property lines is a trespass.¹⁵⁸ Then, the dissent would have determined whether the owner legally recovered oil and gas under the rule of capture.¹⁵⁹ As for the majority’s use of the rule of capture, the dissent reasoned that it did not apply because the gas “did not migrate to Coastal’s well because of naturally occurring pressure changes in the reservoir.”¹⁶⁰ Furthermore, legal recovery of oil and gas under the rule of capture depends on whether Coastal’s fracture into Share 13 was a trespass.¹⁶¹ In response to the majority’s four reasons for refusing to modify the rule of capture, the dissent argued that the majority’s ruling did in fact change the rule of capture.¹⁶² In the end, the dissent balanced the interests involved and argued that even if hydraulic fracturing constitutes a subsurface trespass, it would be reasonable to preclude recovery of exemplary damages.¹⁶³

154. *Id.*

155. *Id.* at 29-30. In this case, Justice Willett thinks the case should turn on the absence of wrongfulness. *Id.* Justice Willett examined the court’s decision in *R.R. Comm’n of Tex. v. Manziel*, 361 S.W.2d 560 (Tex. 1962). *Coastal*, 268 S.W.3d at 29-30. In *Manziel*, the court looked at whether the underlying act was wrongful instead of focusing on the injury caused. *Id.* at 29. “Balancing the respective interests as we did in *Manziel*, this type of subsurface encroachment, like the waterflood in *Manziel*, simply isn’t wrongful and thus isn’t a trespass at all, not just a nonactionable trespass.” *Id.* at 30.

156. *Id.* Damages include the cost of damage to the reservoir or nearby drilling equipment. *Id.* Justice Willett also discussed some of the public policy considerations for barring “tres-frac” suits, including: the costs on society for unbounded tort liability, the need for production, and the effect on tax and royalty revenue for the state. *See generally id.* at 30-35.

157. *See id.* at 42 (Johnson, J., dissenting). The dissent was written by Justice Phil Johnson who was joined by Chief Justice Wallace Jefferson and Justice David Medina. *Id.*

158. *Id.* The very issue the court set out to decide, whether hydraulic fracturing that crosses property lines is a trespass, was ultimately avoided by saying there were no recoverable damages. *See id.* at 4 (majority opinion). The dissent did not decide whether there was a trespass, but said that the possibility was not foreclosed based on precedent and commentaries. *Id.* at 44 (Johnson, J., dissenting).

159. *Id.* at 42.

160. *Id.* at 42-43. If the gas had migrated to Coastal’s well due to naturally occurring pressure changes, the dissent “probably would agree that the rule of capture insulates Coastal from liability.” *Id.* at 42.

161. *Id.* at 43.

162. *Id.* at 45. The dissent rebutted some of the four reasons given by the majority for not changing the rule of capture. *Id.* at 45-47. With regard to alternative remedies being available, property owners may not be knowledgeable enough or have the resources to pursue the remedies available to them. *Id.* at 45. Furthermore, some property owners may not benefit from the suggested remedies. *Id.* The effect of the court’s holding is to allow, by unilateral decision, operators to expand the boundary lines of their lease as opposed to contracting for new lease lines, pooling, or paying compensatory royalties. *Id.*

163. *Id.* at 47. Precluding exemplary damages would protect the continued use of hydraulic fracturing. *Id.*

V. COMMENTARY

The Texas Supreme Court faced an issue of first impression—whether hydraulic fracturing that crosses property lines is a trespass.¹⁶⁴ The court avoided the issue of trespass, however, and relied upon the rule of capture, the cornerstone of the oil and gas industry, by deciding that it barred recovery of the alleged damages.¹⁶⁵ Before the rule of capture can be properly applied, the court must determine whether hydraulic fracturing that crosses property lines constitutes a trespass.¹⁶⁶ Ultimately, an analysis of trespass and the rule of capture would not be necessary, and yet the same outcome of no liability would be reached, if the court used correlative rights to define the property rights of the parties. The first part of this commentary will explore how the Texas Supreme Court misapplied the rule of capture by failing to analyze trespass first. The second part of this commentary will explore the common understanding of trespass, how it finds its limits in oil and gas law, and how correlative rights define and limit property rights.

A. The Texas Supreme Court's Misapplication of the Rule of Capture

The Texas Supreme Court skirted the main issue in this case, whether hydraulic fracturing that crosses property lines constitutes a trespass, by stating that the rule of capture precluded Salinas' claim of injury.¹⁶⁷ Yet, the rule of capture only bars liability when there is reasonable and legitimate drainage.¹⁶⁸ Accordingly, a court cannot determine liability under the rule of capture if it does not first analyze whether the hydraulic fracturing that occurred constituted a trespass.¹⁶⁹ If the court applied the *surface* law of trespass to the subsurface, then hydraulic fracturing that crosses property lines would constitute a trespass.¹⁷⁰

According to the *Restatement (Second) of Torts*, if a “thing” remains on the land or if a person fails to remove a thing he is under a duty to remove, then there is a trespass.¹⁷¹ Based on the *Restatement*, hydraulic fracturing that crosses property lines is considered a trespass

164. *Id.* at 4, 11 (majority opinion).

165. *Id.* at 12-13.

166. *See id.* at 42 (Johnson, J., dissenting).

167. *Id.* at 4, 12-13 (majority opinion).

168. *Elliff v. Texon Drilling Co.*, 210 S.W.2d 558, 562 (Tex. 1948).

169. *See Coastal*, 268 S.W.3d at 42 (Johnson, J., dissenting) (stating that he would determine whether hydraulic fracturing was a trespass before addressing whether the rule of capture precludes damages); *Burney & Hyne*, *supra* note 25, at 19-39 (stating that the rule of capture cannot be validly exercised if fracing constitutes a trespass).

170. *See Burney & Hyne*, *supra* note 25, at 19-45 (“Under both common law and modern definitions, a trespass occurs if a ‘thing’ physically crosses property boundaries. . . . [T]his definition is satisfied when fracing extends beyond lease or unit lines.”); *Geo Viking, Inc. v. Tex-Lee Operating Co.*, No. D-1678, 1992 WL 80263, at *2 (Tex. Apr. 22, 1992), *withdrawn*, 839 S.W.2d 797 (Tex. 1992).

171. RESTATEMENT (SECOND) OF TORTS § 158 (1965).

because one landowner propels proppants into another landowner's land and the proppants are left behind to hold the cracks open.¹⁷²

In *Gregg v. Delhi-Taylor Oil Corp.*,¹⁷³ the court stated, in dicta, that a fracture that crosses property lines is a trespass.¹⁷⁴ On the other hand, the court in *Railroad Commission of Texas v. Manziel*¹⁷⁵ held that no trespass occurred when recovery waters from a Commission-authorized waterflooding project crossed property lines.¹⁷⁶ The cases involving secondary recovery operations, however, are not comparable to cases involving hydraulic fracturing because secondary recovery involves permission from the Commission, or similar state authority, and that is not the case here.¹⁷⁷ Under the *Restatement (Second) of Torts*, a trespass does not occur when the intrusion is privileged; when the Commission grants authority, the subsequent intrusion is privileged.¹⁷⁸

Furthermore, a distinction can be drawn between primary recovery by hydraulic fracturing and secondary recovery operations involving waterflooding. “[F]racing involves the injection of fluids designed physically to penetrate the formation to create cracks propped open by sand,” while waterflooding involves the injection of substances which “*may migrate*” across property lines.¹⁷⁹ These differences do not absolutely preclude consideration of cases involving secondary recovery, but their precedential value should be limited to their public policy analysis.¹⁸⁰

After determining that hydraulic fracturing that crosses property lines is a trespass, the rule of capture can be analyzed to determine if it would preclude recovery. In his dissent in *Coastal*, Justice Phil Johnson analyzed trespass and the rule of capture and concluded that the rule did not apply because it only applies to oil and gas that is legally recovered.¹⁸¹ The above analysis and the dissent's analysis of trespass and the rule of capture would become unnecessary if courts applied the long-recognized doctrine of correlative rights which defines property rights in oil and gas.

172. See *Coastal*, 268 S.W.3d at 4, 6-7 (stating that proppants lodge themselves in the cracks, propping them open); RESTATEMENT (SECOND) OF TORTS § 158.

173. 344 S.W.2d 411 (Tex. 1961).

174. See *id.* at 416. For an explanation of the facts and holding in *Gregg*, see *supra* note 85.

175. 361 S.W.2d 560 (Tex. 1962).

176. See *id.* at 568.

177. See *id.* (holding that there was no trespass because the operation was authorized by the Commission).

178. See RESTATEMENT (SECOND) OF TORTS § 158 cmt. e (1965).

179. See Burney & Hyne, *supra* note 25, at 19-25 (emphasis added); see also *supra* notes 78-83 and accompanying text (discussing other differences between hydraulic fracturing and waterflooding).

180. The public policy rationale behind allowing secondary recovery operations and hydraulic fracturing are the same—to prevent waste. *Coastal Oil & Gas Corp. v. Garza Energy Trust*, 268 S.W.3d 1, 15 (Tex. 2008); *Manziel*, 361 S.W.2d at 568.

181. *Coastal*, 268 S.W.3d at 43 (Johnson, J., dissenting).

B. The Correct Approach: Correlative Rights

The previous section analyzed trespass using traditional notions of trespass law. This commentary will reveal that identifying the parties' property rights may effectively dissolve the need to analyze trespass altogether. Defining the property rights is important because trespass by definition requires that a party have a property right that can be violated.¹⁸² The doctrine of correlative rights modifies these property rights, limiting the rights of landowners over a common reservoir.

Because trespass presupposes that a landowner has property rights, it is necessary to define the property rights before determining if there was a trespass.¹⁸³ The ad coelum doctrine plays an important role in both the law of trespass and in defining property rights.¹⁸⁴ The ad coelum doctrine is "[t]he common-law rule that a landowner holds everything above and below the land, up to the sky and down to the earth's core."¹⁸⁵ In *Edwards v. Sims*,¹⁸⁶ the court relied upon the ad coelum doctrine when it decided that a court-ordered cave survey was appropriate under the circumstances to determine if the defendants had been trespassing on the plaintiff's land.¹⁸⁷ However, there are differences between *Edwards*, or any similar case, and oil and gas cases involving a common reservoir.

In an oil and gas case, if the court only applied the ad coelum doctrine, then one landowner could act in a manner that would adversely affect his neighbor and other landowners over the same reservoir, and not be responsible for wrongdoing.¹⁸⁸ The landowner would not be liable because he would own everything that is below the surface of his land, including his part of the common reservoir.¹⁸⁹ The problem with only applying the ad coelum doctrine is that it does not consider that the

182. See RESTATEMENT (SECOND) OF TORTS § 158 (defining "trespass" to include when a person or something enters land in possession of another); 1 KUNTZ, *supra* note 48, § 2.6, at 78 (referring to the measure of damages in an action to condemn land being computed by determining the extent of the loss of the property rights).

183. See RESTATEMENT (SECOND) OF TORTS § 158; 1 KUNTZ, *supra* note 48, § 2.6, at 78; see also *supra* Section III.B (discussing trespass).

184. See *Edwards v. Sims*, 24 S.W.2d 619, 620 (Ky. Ct. App. 1930) (referring to "ad coelum" in the old maxim "cujus est solum, ejus est usque ad coelum ad inferos"); *Comanche Duke Oil Co. v. Tex. Pac. Coal & Oil Co.*, 298 S.W. 554, 559 (Tex. Comm'n App. 1927) (indicating that there is absolute immunity on one side of the property boundary and absolute responsibility for trespass on the other); RESTATEMENT (SECOND) OF TORTS § 158 cmt. i (referring to property boundaries in an example and stating that an actor can enter another person's land by propelling a thing beneath the surface of the land).

185. BLACK'S LAW DICTIONARY, *supra* note 69, at 40.

186. 24 S.W.2d 619 (Ky. Ct. App. 1930).

187. *Id.* at 620, 622. This case is based upon the facts from *Edwards v. Lee*, 19 S.W.2d 992 (Ky. 1929).

188. *Hague v. Wheeler*, 27 A. 714, 717 (Pa. 1893) ("[Oil and gas] are not, like coal and iron ore, fixed in their place in the rocks, so that the owner may know his own, protract his lines downwards to mark his boundaries, and take them when he pleases."); BLACK'S LAW DICTIONARY, *supra* note 69, at 40 (defining ad coelum).

189. See BLACK'S LAW DICTIONARY, *supra* note 69, at 40.

actions of one landowner over a common reservoir can destroy the reservoir entirely, to the detriment of other landowners over the same reservoir.¹⁹⁰ Simply stated, “[t]he orthodox rules and principles applied by the courts as regards surface invasions of land may not be appropriately applied to subsurface invasions as arise out of the . . . recovery of natural resources.”¹⁹¹

Because orthodox rules and principles cannot be appropriately applied, the doctrine of correlative rights was developed to define ownership in oil and gas in a common reservoir. Just as courts use the ad coelum doctrine to define property rights outside of the oil and gas context,¹⁹² courts must use the doctrine of correlative rights to define the property rights of landowners over a common reservoir.¹⁹³ Under the doctrine of correlative rights, a landowner has rights in common with other landowners, but simultaneously owes duties to other landowners in the same reservoir.¹⁹⁴ If a landowner’s actions do not violate a duty owed to other landowners, then there is no liability for damages.¹⁹⁵ Such duties may include respecting an adjoining landowner’s right against waste, spoilage, and malicious depletion; the right to a fair opportunity to extract oil and gas; and the right to conduct secondary recovery operations.¹⁹⁶

Oil and gas cases provide for other rights and duties. Even though the early cases did not specifically mention correlative rights, they recognized rights and duties of landowners.¹⁹⁷ The court in *People’s Gas Co. v. Tyner*¹⁹⁸ recognized the right of landowners or operators to drill a well and produce gas that naturally flows to the well.¹⁹⁹ The court also recognized that the landowner could not be enjoined from exploding nitroglycerin in the well solely on the basis that such action would increase the flow of gas to the well.²⁰⁰ The court did enjoin the landowner’s use of nitroglycerin because it constituted a nuisance and endangered the

190. See *Ohio Oil Co. v. Indiana*, 177 U.S. 190, 201 (1900); BLACK’S LAW DICTIONARY, *supra* note 69, at 40.

191. R.R. Comm’n of Tex. v. Manziel, 361 S.W.2d 560, 568 (Tex. 1962).

192. See *Edwards*, 24 S.W.2d at 620.

193. See *Elliff v. Texon Drilling Co.*, 210 S.W.2d 558, 562-63 (Tex. 1948) (defining correlative rights).

194. *Id.*

195. *But see id.* at 562 (stating that immunity should not be extended to landowners that negligently waste or destroy oil and gas). *Restatement (Second) of Torts* defines “duty” as the requirement of an actor “to conduct himself in a particular manner at the risk that if he does not do so he becomes subject to liability to another to whom the duty is owed for any injury sustained by such other, of which that actor’s conduct is a legal cause.” *RESTATEMENT (SECOND) OF TORTS* § 4 (1965).

196. See 1 KUNTZ, *supra* note 48, § 4.3, at 119.

197. See generally *Ohio Oil Co. v. Indiana*, 177 U.S. 190, 211-12 (1900) (recognizing the right of states to protect landowners over a common reservoir from waste, but not specifically mentioning correlative rights); *People’s Gas Co. v. Tyner*, 31 N.E. 59, 60 (Ind. 1892) (inferring from the opinion that rights and duties exist even though the court does not mention correlative rights).

198. 31 N.E. 59 (Ind. 1892).

199. See *id.* at 60.

200. *Id.*

property and lives of people not involved in the operation.²⁰¹ Although the *People's Gas Co.* court did not specifically mention correlative rights, it recognized that landowners have rights and duties. The landowners have the right to drill a well and produce oil and gas, but also have a duty to avoid being a nuisance and causing physical injury to the local residents.²⁰² The court enjoined the landowner when he sought to act in a way that would violate the duty owed to his neighbors.²⁰³

One year after the Indiana Supreme Court decided *People's Gas Co.*, the Pennsylvania Supreme Court, in *Hague v. Wheeler*,²⁰⁴ explicitly recognized the doctrine of correlative rights.²⁰⁵ In *Hague*, an adjoining landowner plugged his neighbor's well to keep gas from escaping into the air.²⁰⁶ The landowner who plugged the well then sought to enjoin his neighbor from removing the plug.²⁰⁷ *Hague* recognized the right of the landowner to do as he pleases with the gas he produces, which includes wasting it.²⁰⁸ However, the right is subject to two limitations: First, the owner cannot disregard his obligations to the public; and second, the owner cannot disregard his neighbor's rights.²⁰⁹ The court further stated that the right is only absolute until the legislature regulates it by statute.²¹⁰ In *Hague*, the owner of the plugged well was not causing injury to other property or people; therefore, his actions could not be enjoined.²¹¹ Like previous cases, *Hague* recognizes the right of landowners to drill and produce, and it also recognizes that the landowner

201. *Id.* at 60-61.

202. *See id.* at 60.

203. *Id.* at 61.

204. 27 A. 714 (Pa. 1893).

205. *Id.* at 716. The issue in *Hague* was one of first impression. *Id.* at 715. The lower court's opinion, which is included in the Pennsylvania Supreme Court's opinion, specifically referred to rights that were qualified and correlative. *Id.* at 716.

206. *Id.* at 718.

207. *Id.*

208. *Id.* at 720 (stating that the landowner could sell, use, give away, or squander gas that he produces from his wells). If the same facts were presented today, the lower court's injunction would likely have been upheld based on an analysis similar to the one in *Elliff*. *See generally* *Elliff v. Texon Drilling Co.*, 210 S.W.2d 558 (Tex. 1948) (holding a landowner responsible for negligent waste).

209. *Hague*, 27 A. at 720.

210. *Id.* In 1900, the United States Supreme Court recognized the right of states to legislate to preserve and protect rights in oil and gas. *See* *Ohio Oil Co. v. Indiana*, 177 U.S. 190, 212 (1900).

211. *See Hague*, 27 A. at 716. The lower court affirmed the injunction and recognized that landowners who are able to obtain gas from a common reservoir have a common interest in preservation and that reckless waste is an injury to all the owners. *Id.* The court also stated that "owners cannot be permitted to carry on their operations in lawless irresponsibility, but must submit to such limitations as are inevitable to enable each to get his own." *Id.* at 717. The Pennsylvania Supreme Court reversed the lower court, dissolved the injunction and stated:

If he uses his product in such a manner as to violate any rule of public policy or any positive provision of the written law, he brings himself within the reach of the courts. If the use he makes of his own, or its waste, is injurious to the property or the health of others, such use or waste may be restrained, or damages recovered therefor; but, subject to these limitations, his power as an owner is absolute, until the legislature shall, in the interest of the public as consumers, restrict and regulate it by statute.

Id. at 720.

has obligations toward the public and his neighbors.²¹²

The Texas Supreme Court more recently addressed correlative rights in *Elliff v. Texon Drilling Co.*²¹³ In *Elliff*, a well drilled by Texon blew out, caught fire, and cratered, causing huge quantities of oil and gas to be released into the air.²¹⁴ *Elliff* recognized the correlative rights of landowners to produce oil and gas, while at the same time holding the landowner, or operator, responsible for negligence.²¹⁵ At common law, a person has a “duty to exercise ordinary care to avoid injury or damage to the property of others,” and when he fails to exercise due care, the injured person has a cause of action for negligence.²¹⁶ According to the court this means that, in an oil and gas context, a landowner or operator has a duty to avoid the negligent waste or destruction of minerals beneath his neighbor’s land.²¹⁷ The *Elliff* court recognized “that there is a certain amount of reasonable and necessary waste incident to the production of oil and gas,” therefore, a landowner or operator would only be liable for negligent waste.²¹⁸ The rule of capture did not protect the landowner or operator in *Elliff* because such drainage was not “reasonable and legitimate.”²¹⁹

Negligent waste is one problem that the doctrine of correlative rights is meant to protect against;²²⁰ intentionally violating a proration order is another.²²¹ In *Wronski v. Sun Oil Co.*,²²² the landowner was held liable for drainage that violated a proration order limiting production to seventy-five barrels of oil per day per well.²²³ Sun Oil Company over-produced 150,000 barrels of oil, 50,000 barrels of which were drained from beneath Wronski’s property.²²⁴ The court of appeals held that a violation of a proration order constitutes conversion and “subjects the violator to liability to all the owners of interests in the pool for conversion of the illegally-obtained oil.”²²⁵ The rule of capture did not apply in *Wronski* because the rule was modified to exclude operations that violate a conservation order.²²⁶ By using correlative rights to define

212. *See id.*

213. 210 S.W.2d 558 (Tex. 1948). Elliff owned land over half of an oil and gas reservoir; the other half was owned by Driscoll and drilled by Texon. *Id.* at 559.

214. *Id.*

215. *See id.* at 562-63.

216. *Id.* at 563.

217. *Id.*

218. *Id.* at 562.

219. *Id.*

220. *Id.*

221. *See Wronski v. Sun Oil Co.*, 279 N.W.2d 564, 571 (Mich. Ct. App. 1979).

222. 279 N.W.2d 564 (Mich. Ct. App. 1979).

223. *Id.* at 567, 571.

224. *Id.* The court determined the amount of oil drained from beneath Wronski’s property based on the lower court’s findings; Wronski claimed that Sun Oil Company had over-produced 180,000 barrels of oil. *Id.*

225. *Id.* at 571.

226. *Id.* at 570.

property rights, *Wronski* recognizes the obligation of landowners to abide by the state's conservation orders or be liable to landowners over the common reservoir for damages.²²⁷ Failure to abide by a proration order would also violate a landowner's right to a fair opportunity to extract oil and gas, because the actions of Sun Oil Company reduced the amount of oil that could have been drained by *Wronski*.²²⁸

If the Texas court applied these cases to the facts in *Coastal*, it would not have needed to analyze the law of trespass or the rule of capture. Applying correlative rights, both *Salinas* and *Coastal* would have had the right to drill as many wells on their land as they desired and produce oil and gas therefrom.²²⁹ In an effort to increase the flow of gas to their respective wells, both could frac their wells.²³⁰ The right of each landowner over a common reservoir to a fair opportunity to extract oil and gas includes the right to frac, especially in areas where fracing is necessary to commercial production of oil and gas.²³¹ If the fracture crossed property lines, the fracing party would not be liable unless the frac damaged another landowner's well or the reservoir, or the action somehow violated other laws or public policy.²³²

The outcome would be the same under *Kuntz's* view of correlative rights. Applying this view, *Salinas* and *Coastal* operate within a special community because they both have tracts of land overlying a common reservoir.²³³ In this case, *Salinas* and *Coastal* could frac their wells, even if the fracture would extend beyond property lines, because such action is socially desirable.²³⁴ Without hydraulic fracturing, *Coastal* would not

227. See *id.* at 571.

228. See *id.*; 1 KUNTZ, *supra* note 48, § 4.7, at 126.

229. See *Elliff v. Texon Drilling Co.*, 210 S.W.2d 558, 562 (Tex. 1948) (stating that a landowner has a right to "sink as many wells as he desires upon his tract of land and extract therefrom and appropriate all the oil and gas that he may produce"). In Texas, the Commission's well-spacing regulations limit the number of wells that can be drilled. *Id.* If a landowner or operator disregarded the state's conservation statutes or orders, then he would be liable for damages to other landowners or operators in the common reservoir. See *Wronski*, 279 N.W.2d at 571.

230. See *People's Gas Co. v. Tyner*, 31 N.E. 59, 60 (Ind. 1892) (stating that a landowner could not be enjoined from shooting his well with nitroglycerin solely on the basis that it would increase the amount of gas that flowed to the well). Producing oil and gas after fracturing may even fall under the definition of "natural flow," which "is defined to include only that amount of gas that would flow into the well bore when 'retarded only by atmospheric pressure.'" *Kramer & Anderson, supra* note 88, at 917 (quoting *Richmond Natural Gas Co. v. Enter. Natural Gas Co.*, 66 N.E. 782, 786 (Ind. App. 1903)). This assumes that the state has not regulated the use of fracing.

231. See 1 KUNTZ, *supra* note 48, § 4.7, at 126.

232. See *People's Gas Co.*, 31 N.E. at 60 (stating that an owner has a duty to avoid being a nuisance and causing physical injury to the local residents); *Hague v. Wheeler*, 27 A. 714, 720 (Pa. 1893) (stating that a violation of public policy and disregarding neighbors' rights are limitations on the landowner's right to drill and produce); *Elliff*, 210 S.W.2d at 563 (stating that the fracing party has a duty to exercise ordinary care to avoid damaging others' property, and when that is not exercised, he may be liable for negligence); *Wronski*, 279 N.W.2d at 571 (violating a proration order subjects the violator to liability); 1 KUNTZ, *supra* note 48, § 4.3, at 119 (stating that landowners over a common reservoir have rights against waste, spoilage, and malicious depletion).

233. See 1 KUNTZ, *supra* note 48, § 4.3, at 120 (stating that owners over a common source of supply should be treated as a special community).

234. See *id.* (stating that correlative rights are applied by looking at what is socially undesirable).

be able to produce the Vicksburg T formation commercially.²³⁵ Furthermore, there are no consequences to others operating in the community because they too can frac their wells.²³⁶ The only instance in which it might be socially undesirable is when the fracturing causes damage to another landowner or operator's well or the formation beneath his property, or when it violates other laws or public policy.²³⁷

Based on the above analysis, a landowner's property rights over a common reservoir are diminished because an action for trespass could not be brought against another landowner over the common reservoir. Under the doctrine of correlative rights, the grounds for a cause of action would be limited to when there is socially undesirable activity, under Kuntz's view, or when the action violates other laws—negligence, nuisance, or conversion—or public policy.²³⁸ Restricting the grounds for a cause of action is consistent with the policy arguments in favor of limiting recovery for subsurface trespass by fracturing.²³⁹

VI. CONCLUSION

Hydraulic fracturing is a technological innovation that many landowners or operators have used to increase production of oil and gas.²⁴⁰ At a time when America's dependence on foreign oil is considered dangerous,²⁴¹ the court reached an outcome favorable to increasing domestic production.²⁴²

235. *Coastal Oil & Gas Corp. v. Garza Energy Trust*, 268 S.W.3d 1, 13 (Tex. 2008); 1 KUNTZ, *supra* note 48, § 4.3, at 120 (stating that social acceptability is determined by looking at the utility of the conduct and the consequences to others in the special community).

236. *See* 1 KUNTZ, *supra* note 48, § 4.3, at 120 (looking at peculiar consequences to others in the community when determining social acceptability). There are instances in which the "go and do likewise" adage does not produce a fair result. Broomes, *supra* note 78, at 20-26. This would be the case when the property of one landowner only sits over a small sliver of the reservoir. *See id.* There would not be much to gain from fracturing into a small sliver, but a landowner over that small sliver would gain a lot by fracturing. *See id.* Even so, the fracturing by the landowner over the small sliver could be considered socially undesirable, and therefore, a violation of correlative rights. *See* 1 KUNTZ, *supra* note 48, § 4.3, at 120 (defining socially undesirable).

237. *Coastal*, 268 S.W.3d at 13 (considering that the court might have been willing to recognize a trespass claim if there had been damage to Salinas' well or the formation beneath Salinas' property).

238. *See Hague v. Wheeler*, 27 A. 714, 720 (Pa. 1893) (stating that a violation of public policy is a limitation on the right of a landowner to drill and produce); *Elliff v. Texon Drilling Co.*, 210 S.W.2d 558, 563 (Tex. 1948) (stating that the fracturing party has a duty to exercise ordinary care to avoid damaging others' property and when that is not exercised, he may be liable for negligence); *Wronski v. Sun Oil Co.*, 279 N.W.2d 564, 571 (Mich. Ct. App. 1979) (violating a proration order subjects the violator to liability for conversion); 1 KUNTZ, *supra* note 48, § 4.3, at 119 (stating that correlative rights are applied by looking at what is socially undesirable).

239. *See Coastal*, 268 S.W.3d at 14-16. The state has an interest in preventing waste and conserving natural resources. *Id.* This is achieved by allowing landowners or operators to frac their wells and produce in formations that they would otherwise not be able to commercially produce. *Id.* at 13. Furthermore, people from every aspect of the industry—regulators, landowners, royalty owners, and operators—oppose liability for hydraulic fracturing. *Id.* at 16-17; *see id.* at 26-42 (Willett, J., concurring) (discussing the need for production, the significance of oil and gas in Texas, and costs to society for tort liability).

240. *See Energy Policy Act of 2005*, *supra* note 12; Mouawad, *supra* note 10.

241. *See CNN.com*, *supra* note 1.

242. *Contra Coastal*, 268 S.W.3d at 17 n.56 (majority opinion) (stating that tort liability would

Although the Texas Supreme Court may have come to the right conclusion—that Salinas could not recover damages—it did so by applying the wrong property concepts.²⁴³ Under traditional notions of the law of trespass as applied to surface disputes, Coastal’s act of fracturing beyond its property line constituted a trespass. When a trespass occurs, the rule of capture does not apply because it only protects a landowner from liability when oil and gas is captured legally.²⁴⁴ If property rights are defined by the doctrine of correlative rights, then the rule of capture and the law of trespass will not have to be analyzed.

The doctrine of correlative rights is the correct rule to apply to cases involving hydraulic fracturing that crosses property lines. In an oil and gas context, the court cannot properly apply common notions of the law of trespass. Rather, the court must use the doctrine of correlative rights to define the more complex reciprocal property rights of landowners over a common reservoir. When this is done, a landowner would not be liable if his fracture extended beyond his property lines because he has not violated other laws or public policy and fracturing is not considered socially undesirable.

In the future, courts should decline to follow the Texas Supreme Court’s approach in *Coastal*; instead, they should define the property rights of the parties by analyzing correlative rights before deciding whether there is a trespass or whether the rule of capture applies. By using the doctrine of correlative rights to define property rights, states are better able to prevent waste and protect oil and gas property rights.

impose massive costs on the oil and gas industry “and impede development and production of vitally needed oil and gas reserves”).

243. *Id.* at 4.

244. *See* *Halbouty v. R.R. Comm’n of Tex.*, 357 S.W.2d 364, 375 (Tex. 1962).