EDWARDS AQUIFER AUTHORITY V. DAY AND *BRAGG*—PREDICTIONS ON THEIR EFFECTS FOR REGULATORY TAKINGS CLAIMS FOR GROUNDWATER USED IN OIL & GAS OPERATIONS

Christopher S. Kulander*

---

* Professor Christopher S. Kulander is a visiting associate professor and Director of the Oil and Gas Law Institute at the South Texas College of Law. He is also Of Counsel with Haynes and Boone, LLP (Dallas, Texas). Professor Kulander holds a J.D. from the University of Oklahoma College of Law and a Ph.D. in Geophysics from Texas A&M University. The author thanks the Property and Environment Research Center (PERC) in Bozeman, Montana, for its support of this work, and the Searle Freedom Trust for its support of PERC. The author also thanks the following people who conducted research, provided comments, or otherwise contributed to this paper: Jeff Civins, Monica Hart, Byron Kulander, Roger Meiners, Glynn Starling, Natalie Tarenko, and Anh Tran. Some background portions of this paper related to groundwater conservancy districts and the procedural history of *Edwards Aquifer Authority v. Day*, updated as necessary, appeared in (a) Christopher Kulander, *Shale Oil and Gas State Regulatory and Litigation Issues and Trends in Texas and Beyond*, Proceedings of Environmental Impacts of Oil & Gas Production, San Antonio, TexasBarCLE and Texas Tech School of Law, Jan. 25, 2013, (b) Christopher Kulander, *2012 Texas Oil & Gas Case Law Update*, 1 TEX. A&M L. REV. 287, 289–91 (2013), and (c) Christopher Kulander, et al., *American Law and Jurisprudence on Fracing—2012*, 47 ROCKY MTN. MIN. L. INST. 277 (2010).

I. INTRODUCTION

In early 2012, a watershed Texas Supreme Court case, *Edwards Aquifer Authority v. Day* (*Day*) turned Texas water law on its head.[1] In a long-anticipated opinion, the court first found that impoundment water could change its character and become "state water" if not put to a beneficial use.[2] Then, in a judicial thunderclap, the court declared that groundwater in place is a real property interest in Texas and cannot be taken for public use without adequate compensation guaranteed by the Texas Constitution.[3] Overnight, claimants appeared, suing Texas regulatory agencies that had denied permits allowing water use at the level sought by landowners.

These claims, and the pause they may give to regulating entities in withholding future permits or passing laws that limit groundwater use, will weigh heavily on the nature of groundwater rights and conservation efforts, particularly in light of increasing scarcity of water resources and the use of

[1] *See generally*, 369 S.W.3d 814 (Tex. 2012).

[2] *Id.* at 822–23.

[3] *Id.* at 833, 838.

groundwater for hydraulic fracturing (fracing) operations. The effect of these claims will especially resonate in areas plagued by drought.

Texas case law is a focus of this paper for three reasons. First, modern Texas case law closely tracks the jurisprudential methodology of the well-known general regulatory takings opinions of the U.S. Supreme Court and thus provides a current snapshot of what contemporary regulatory takings jurisprudence with regards to groundwater looks like. Second, Texas has arguably the broadest and most developed body of oil and gas case law in the nation. When the Texas Supreme Court applied oil and gas jurisprudence to groundwater, a whole new chapter in Texas water law opened. Third, because of population growth and drought, combined with the prodigious development of shale fields such as the Barnett and Eagle Ford Shale and the water required thereby, Texas is today actively grappling with general groundwater regulatory takings on several fronts (the legislature, the state agencies, and the courts) and is beginning to more closely scrutinize groundwater use for oil and gas operations such as hydraulic fracturing. The state's water law is undergoing such rapid and historic changes that other states that are concerned with how oil and gas development will affect their groundwater assets will want to watch closely.

This article first examines relevant general water law, rights, and jurisprudence to establish the legal foundation upon which *Day* rests. A description of the background and results of *Day* then follows. With the real property interest in groundwater established, the article then describes the methodology Texas will use to analyze when and whether a groundwater-sourced takings has occurred, and, if so, how to value the claim. To do this, federal regulatory takings are reviewed before turning to the first water takings case in Texas, *Edwards Aquifer Authority v. Bragg* (*Bragg*).[4] Next, because groundwater is often used in oil and gas drilling and (especially) development, Texas oil and gas regulatory takings case law and how it might influence—and be influenced by—Texas groundwater regulatory takings jurisprudence is discussed, with a focus on groundwater used for oil and gas operations. Finally, the possible effect of this change in regulatory takings law on groundwater conservancy districts, and what the state legislature can do about it, is considered.

[4] *See generally*, 421 S.W.3d 118 (Tex. App.—San Antonio 2013, pet. filed).

II. GROUNDWATER RIGHTS IN TEXAS—A BRIEF BACKGROUND

Water ownership rights are subject to management and regulation by courts and by the state legislature through regulatory agencies.[5] Control of Texas water is bifurcated.[6] Surface water is owned by the public.[7] The Texas Commission on Environmental Quality (TCEQ) regulates surface water appropriation and use.[8] Without a permit from the TCEQ, a landowner cannot use surface water except for exempted livestock or domestic use.[9] In addition, no permit is required for construction of a stock tank or impoundment that contains 200 acre-feet of water or less.[10]

In contrast to surface water, groundwater is the property of the landowner, who can use, move, and sell the groundwater produced with a well.[11] Historically, groundwater use in Texas was essentially a free-for-all; the biggest well got the biggest share.[12] Courts limited this free use by disallowing negligent or wasteful use, use designed to harm a neighbor maliciously, or pumping that caused subsidence.[13]

Still later, the state legislature passed a series of statutes that restrict limitless groundwater pumping, broadly constraining pumping from beneath rivers, from aquifers beneath areas managed by groundwater conservation districts, or from areas subject to the jurisdiction of the Edwards Aquifer Authority, as described below.[14] Groundwater appropriation and use is now subject to either city control or groundwater

---

[5] *See Water Use in Association with Oil and Gas Activities*, RAILROAD COMMISSION OF TEXAS, http://www.rrc.state.tx.us/about-us/resource-center/faqs/oil-gas-faqs/faq-water-use-in-association-with-oil-and-gas-activities/ (last visited Oct. 12, 2014).

[6] *Id.*

[7] *Id.*

[8] *Id.*

[9] *Surface Water Rights in Texas: How They Work and What to Do When They Don't*, TEXAS COMMISSION ON ENVIRONMENTAL QUALITY, http://www.tceq.state.tx.us/assets/public/comm_exec/pubs/archive/gi228/index.html (last visited Sept. 24, 2014).

[10] TEX. WATER CODE ANN. § 11.142 (West 2008 & Supp. 2014); *see also Water Conversion Table*, DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION, http://dnrc.mt.gov/wrd/water_rts/wr_general_info/wrforms/615.pdf (last visited Oct. 12, 2014) (An "acre-foot" is that amount of water that will cover an acre to a depth of one foot and equals 325,850 gallons.).

[11] *See* Edwards Aquifer Auth. v. Day, 369 S.W.3d 814, 831–32 (Tex. 2012).

[12] *See id.* at 825.

[13] WATER § 36.002(b)(1); *Day*, 369 S.W.3d at 832.

[14] *See, e.g.*, WATER § 36.113.

management districts.[15] These districts, known as Groundwater Conservation Districts (GCD) in Texas, are authorized to:

> [M]ake and enforce rules, including rules limiting groundwater production based on tract size or the spacing of wells, to provide for conserving, preserving, protecting, and recharging of the groundwater or of a groundwater reservoir or its subdivisions in order to control subsidence, prevent degradation of water quality, or prevent waste of groundwater . . . .[16]

All state-recognized Texas GCDs are required to promulgate, implement, and enforce a management plan for the effective management of groundwater resources within their jurisdiction.[17] Over the GCDs sits the Texas Water Development Board (TWDB), the statewide agency that must approve of all the GCD's groundwater management plans.[18] As of 2013, all recognized GCDs either possess an approved groundwater management plan or are now in the approval process.[19]

If required by the applicable GCD's management plan, water well drillers may be required to submit reports detailing drilling and completing of water wells and of the production and use of groundwater.[20] For a long time after their creation, however, GCDs were not a major concern for oil and gas companies because they were not allowed to require permits for:

> [the] drilling [of] a water well used solely to supply water for a rig that is actively engaged in drilling or exploration operations for an oil or gas well permitted by the Railroad Commission of Texas provided that the person holding the permit is responsible for drilling and operating the water well and the well is located on the same lease or field associated with the drilling rig . . . .[21]

---

[15] *Id.* § 35.001.

[16] *Id.* § 36.101.

[17] *Groundwater Conservation Districts*, TEXAS WATER DEVELOPMENT BOARD, http://www.twdb.state.tx.us/groundwater/conservation_districts/index.asp (last visited Oct. 16, 2014).

[18] *Id.*

[19] *Id.*

[20] WATER § 36.111.

[21] *Id.* §§ 36.117(b)(2), 36.117(i) (The driller of such an exempted well is still required to file a drilling log with the district.).

Recently, as detailed below, GCDs have taken a more active role in requiring permits for water wells used for oil and gas activities not exempted from GCD control. This reach for control by GCDs, when combined with the finding of *Day*, may put the hydrocarbon industry and the water owners that sell to them on a crash course to litigation with the GCDs.

III. *EDWARDS AQUIFER AUTHORITY V. DAY*

Day involved the Edwards Aquifer Authority (EAA), a state regulatory agency established by the 73rd Legislature in May 1993[22] with the passage of the Edwards Aquifer Authority Act (EAAA) to preserve and protect the groundwater in the Edwards Aquifer that covers all or portions of Atascosa, Bexar, Caldwell, Comal, Guadalupe, Hays, Medina, and Uvalde counties.[23] The Edwards Aquifer is "the primary source of water for south central Texas and therefore vital to the residents, industry, and ecology of the region, the State's economy, and the public welfare."[24] About two million residents rely on the aquifer as their primary source of fresh and livestock grade groundwater.[25] The EAA's mission, as stated in § 1.01, remains to direct "the effective control of the resource to protect terrestrial and aquatic life, domestic and municipal water supplies, the operation of existing industries, and the economic development of the state."[26]

---

[22] *About the EAA*, EDWARDS AQUIFER AUTHORITY, http://www.edwardsaquifer.org/eaa/about-the-eaa (last visited Oct. 16, 2014) ("Legal challenges" prevented the EAA from operating until June 28, 1996.).

[23] *Jurisdiction*, EDWARDS AQUIFER AUTHORITY, http://www.edwardsaquifer.org/eaa/jurisdiction (last visited Oct. 16, 2014).

[24] Edwards Aquifer Auth. v. Chem. Lime, 291 S.W.3d 392, 394 (Tex. 2009).

[25] *About the EAA*, *supra* note 22, Part 3.

[26] Act of May 30, 1993, 73rd Leg., R.S., ch. 626, 1993 Tex. Gen. Laws 2350; as amended by Act of May 16, 1995, 74th Leg., R.S., ch. 524, 1995 Tex. Gen. Laws 3280; Act of May 29, 1995, 74th Leg., R.S., ch. 261, 1995 Tex. Gen. Laws 2505; Act of May 6, 1999, 76th Leg., R.S., ch. 163, 1999 Tex. Gen. Laws 634; Act of May 25, 2001, 77th Leg., R.S., ch. 1192, 2001 Tex. Gen. Laws 2696; Act of May 28, 2001, 77th Leg., R.S., ch. 966, §§ 2.60–2.62 and 6.01–6.05, 2001 Tex. Gen. Laws 1991, 2021-2022 and 2075-2076; Act of May 25, 2001, 77th Leg., R.S., ch. 1192, 2001 Tex. Gen. Laws 2696; Act of June 1, 2003, 78th Leg., R.S., ch. 1112, § 6.01(4), 2003 Tex. Gen. Laws 3188, 3193; Act of May 23, 2007, 80th Leg., R.S., ch. 510, 2007 Tex. Gen. Laws 900; Act of May 28, 2007, 80th Leg., R.S., ch. 1351, §§ 2.01–2.12, 2007 Tex. Gen. Laws 4612, 4627-4634; Act of May 28, 2007, 80th Leg., R.S., ch. 1430, §§ 12.01–12.12, 2007 Tex. Gen. Laws 5848, 5901; Act of May 21, 2009, 81st Leg., R.S., ch. 1080, 2009 Tex. Gen. Laws 2818 [hereafter "EAAA"]. Citations are to the EAAA's current sections, without separate references to amending enactments. The EAAA remains uncodified, but an unofficial compilation can be found on the Authority's website, at http://www.edwardsaquifer.org/files/EAAact.pdf.

On February 24, 2012, almost two years removed from oral argument, the Texas Supreme Court released its opinion in *Day*.[27] *Day* was among the longest-pending cases on the court's docket and attracted over two dozen amicus briefs.[28] In a 49-page opinion, the court ran through a thorny hedgerow both of administrative and constitutional questions, and ultimately determined that Texas courts recognize a landowner's property interest in "groundwater in place" beneath their property.[29] The opinion contained two significant statements regarding ownership and use of groundwater pumped to the surface *and* stored in an impoundment.[30]

Day, a party comprised of two individuals who were successors to a water right holder that produced groundwater from an artesian well, then stored it in an open impoundment and applied for a water well permit to the EAA to expand then current water production.[31] In their application, Day requested from the EAA permission to pump 700 acre-feet of water per year for irrigation from the well.[32] The EAAA guarantees that landowners who have a history of using the Edwards Aquifer groundwater for irrigation purposes will receive a permit of at least two acre-feet of production of water per year per acre irrigated.[33]

Specifically, EAAA regulations placed a limit on water usage based on each landowner's historical use of water from the Edwards Aquifer.[34] With the exception of a small amount of water for domestic or livestock use, use of any other aquifer water requires a permit.[35] The amount of water allowed for on the permits is determined by looking at historical use from aquifer

---

[27] *See generally* Edwards Aquifer Auth. v. Day, 369 S.W.3d 814 (Tex. 2012).

[28] Don Cruse, *Landmark Texas Water Rights Case May Lead to Future Takings Claims or Legislative Fixes:* Edwards Aquifer v. Day, THE SUPREME COURT OF TEXAS BLOG (Feb. 24, 2012), http://www.scotxblog.com/case-notes/landmark-texas-water-rights-case-may-lead-to-future-takings-claims-or-legislative-fixes-edwards-aquifer-v-day-feb-24-2012/.

[29] 369 S.W.3d at 832.

[30] *See id.* at 814.

[31] *Id.* at 818, 820.

[32] *Id.* at 820.

[33] *Id.*

[34] Edwards Aquifer Auth. v. Chem. Lime, 291 S.W.3d 392, 394–95 (Tex. 2009).

[35] *Id.* n.7 (citing EAAA §§ 1.15(b), 1.35(a)) (Section 1.15(b) states, "Except as provided by Section 1.17 ['Interim Authorization'] and 1.33 [wells producing less than 25,000 gallons per day for domestic or livestock use] of this article, a person may not withdraw water from the aquifer or begin construction of a well or other works designed for the withdrawal of water from the aquifer without obtaining a permit from the authority." Additionally, section 1.35(a) states, "A person may not withdraw water from the aquifer except as authorized by a permit issued by the authority or by this article.").

sources before the EAAA went into effect.[36] An "existing user" who operated a well for three or more years during the historical period was entitled to a permit for at least the average amount of water drawn from the aquifer annually.[37] Therefore, if, during the "historic period" as defined in the EAAA, a certain amount of water was drawn from the aquifer annually, landowners of the same tract could get a permit allowing production of that same amount of groundwater.[38] If only a little water was withdrawn from the aquifer during the "historic period," then the present landowner was allowed only that small amount.[39]

As an attachment to their well application, Day included a statement from its predecessor-in-right.[40] These predecessors claimed to have irrigated 300 acres of grass from the well on the property during 1983 and 1984, and to have recreationally used the fifty-acre lake that was on the property.[41] In reviewing Day's application, however, the Authority determined that the original water right holder had used the water in the impoundment only for recreation purposes—a use not recognized as a "beneficial use."[42] Because of this lack of use, no permit was issued.[43] Day protested the EAA's determination and brought the dispute before an administrative law judge.[44] The administrative law judge agreed with the EAA and found that the water in the impoundment, due to being produced and stored but not used for purposes seen as "beneficial," was now state water beyond the control of both the EAA and the surface owner.[45]

Since surface water is primarily regulated by the TCEQ while groundwater outside cities is primarily regulated by GCDs, the first question that arose over the EAA's finding was whether the water in the impoundment was now state-controlled surface water (that would be subject to TCEQ jurisdiction) and therefore beyond the EAA's sway with respect to Day's water well application.[46] After litigation and appeal, the Texas Supreme Court held that the necessary evidence was present so that the EAA *could* rightfully have found that such impoundment water had

---

[36] EAAA § 1.16(a).

[37] *Id.* § 1.16(e).

[38] *See id.* §§ 1.16(e), 1.16(a).

[39] *See id.*

[40] Edwards Aquifer Auth. v. Day, 369 S.W.3d 814, 820 (Tex. 2012).

[41] *Id.*

[42] *Id.* at 820–21.

[43] *Id.* at 821.

[44] *Id.*

[45] *Id.*

[46] *See id.* at 822.

changed its character and become "state water" if not put to a beneficial use.[47]

Located on Day's property was an intermittent creek that flowed into the fifty-acre lake.[48] In order for the groundwater—that Day produced from his well—to move into the creek, Day constructed a conveyance mechanism.[49] The court found that when the groundwater entered the creek, the water became surface water over which Day no longer had an ownership interest.[50] Therefore, the court's decision implies that if groundwater is on a watercourse and the landowner withdraws any water from that watercourse, the landowner has unlawfully diverted state water even if the landowner was the one who created the watercourse.[51]

Day did not present accepted evidence of prior use of the water by either Day or its predecessors except for some water-based recreation.[52] As a result, the court held Day failed to prove that it was utilizing groundwater, not state water.[53] However, the court recited that it was not holding that such produced water *always* became state water or that an impoundment or lake could never be used to store groundwater for use by its original owner, but that the water would then have to be used for some beneficial purpose such as irrigation, not mere recreation—a use that by law is not a beneficial purpose.[54]

The second major question addressed by the court—and the one most observers waited for with intense interest—was the larger issue of whether land ownership in fee included a real property interest in the groundwater thereunder and whether that interest, if present, is subject to the Texas Constitutional requirement of adequate compensation in the event of a "taking" for a public purpose.[55] The EAA tried to distinguish groundwater from oil and gas by citing numerous differences between the two.[56] However, the court was not persuaded by any of the EAA's arguments.[57] In likening water to oil and gas, the court held that water may be owned in

---

[47] *See id.* at 823.

[48] *Id.* at 818.

[49] *Id.* at 822–23.

[50] *See id.* at 823.

[51] *See id.*

[52] *Id.*

[53] *Id.*

[54] *Id.*

[55] TEX. CONST. art. I, § 17; *Day*, 368 S.W.3d at 823.

[56] *Day*, 369 S.W.3d at 830–31.

[57] *Id.* at 831.

place by one owner while neighboring parties are allowed to drain it without liability through the rule of capture.[58]

After distinguishing earlier cases involving the rule of capture, the court examined various factors to analyze whether the Authority's denial of Day's application had resulted in a "taking" that required compensation, namely whether the tests enumerated in the U.S. Supreme Court cases of *Lucas v. South Carolina Coastal Council*[59] and *Penn Central Transp. Co. v. NYC*[60]—described below—would be applied.[61]

The court ultimately agreed with the court of appeals and remanded the case back to the district court for a determination of whether a "taking" requiring compensation had occurred and, if so, what compensation might be required.[62] Most importantly, land ownership now includes an interest in the actual groundwater in place—like oil and gas in Texas—and not merely an exclusive license to develop, as in Oklahoma.[63] Thus, a landowner in Texas may now assert a suit against the government for uncompensated takings of his groundwater under both the state and federal constitutions.[64]

While attempting to analogize groundwater to oil and gas, the court stated that a landowner's ownership interest is based on "volumes that, while they could be diminished through drainage, with 'proper diligence', could also be replenished through drainage."[65] While this statement recognizes that within the Edwards Aquifer, any drainage of the artesian karst aquifer is quickly and naturally replenished by surface water from the recharge zone of the aquifer,[66] it does not recognize that a typical oil and gas reservoir does not recharge from the surface and drawn hydrocarbons may only be replenished in geologic time—that is, potentially over millions of years, if at all.[67] Therefore, while the volume of an oil and gas formation may be determined by measuring the formation itself, the volume of a rechargeable groundwater aquifer cannot be as easily established because of

---

[58] *Id.* at 831–32.

[59] *See* 505 U.S. 1003, 1015 (1992).

[60] *See* 438 U.S. 104, 124 (1978).

[61] *Day*, 369 S.W.3d at 838–41.

[62] *Id. at* 843.

[63] *See id.* at 838.

[64] *See id.* at 837–38.

[65] *Id.* at 828.

[66] *What is Karst?*, UNIVERSITY OF TEXAS AT AUSTIN: ENVIRONMENTAL SCIENCES INSTITUTE, http://www.esi.utexas.edu/outreach/caves/karst.php (last visited Oct. 16, 2014).

[67] *See What are Oil and Natural Gas?*, ADVENTURES IN ENERGY, http://www.adventuresinenergy.org/What-are-Oil-and-Natural-Gas/How-Are-Oil-Natural-Gas-Formed.html (last visited Oct. 16, 2014).

fluctuation of the water level and recharge rate of the aquifer.[68] In addition, aquifers respond to drainage differently from one another due to factors such as geology, depth, precipitation and surface water flow, and surface topography.[69] For example, the Ogallala Aquifer in the Great Plains recharges very slowly relative to the Edwards Aquifer due to different reservoir rock geology and other factors.[70]

After the court found that a landowner had a constitutionally protected and vested property right in his groundwater, it looked to whether Day had properly asserted a takings claim.[71] The court first determined that Day could not sustain a claim that the government had physically taken its property.[72] The court based its decision on the fact that the EAA had granted Day a permit for the use of fourteen acre-feet of water annually for irrigation purposes due to historic use.[73] Furthermore, pursuant to the EAAA, Day could use up to 25,000 gallons of groundwater per day for domestic and livestock use.[74]

As to whether the Authority had deprived Day of all economically beneficial use of its property, the court found that the summary judgment record was inconclusive.[75] Specifically, in applying the three-part test of *Penn Central* to *Day*, the court found that the record was incomplete on both of the first two factors: (1) whether the claimant was economically impacted by the regulation the government had imposed; and (2) to what extent the regulation interfered with the claimant's distinct investment-back expectations.[76] The court, however, focused most of its discussion on whether the third factor of the *Penn Central* test—the character of the regulation—was applicable in *Day*.[77]

---

[68] Bridget R. Scanlon et al., *Groundwater Recharge in Texas* (2003) (manuscript at 21) (on file with University of Texas Bureau of Economic Geology), *available at* http://www.beg.utexas.edu/environqlty/vadose/pdfs/webbio_pdfs/TWDBRechRept.pdf (noting that water level and recharge rates of the Edwards Aquifer are "dynamic" and citing robust recharge rates in four counties).

[69] *See id.*

[70] *See* E.D. Gutentag et al., USGS, GEOHYDROLOGY OF THE HIGH PLAINS AQUIFER IN PARTS OF COLORADO, KANSAS, NEBRASKA, NEW MEXICO, OKLAHOMA, SOUTH DAKOTA, TEXAS, AND WYOMING 31, 33 (1984).

[71] Edwards Aquifer Auth. v. Day, 369 S.W.3d 814, 838 (Tex. 2012).

[72] *Id.* at 839.

[73] *Id.*

[74] *Id.*

[75] *Id.* at 839–40.

[76] *Id.*

[77] *See id.* at 840–43.

In analyzing whether the third part of the *Penn Central* test was applicable in *Day*, the court differentiated between the goals and methods of regulating groundwater from those of oil and gas.[78] The court concluded that, while the government must emphasize surface area to fairly regulate oil and gas, the government must consider factors other than surface area in order to fairly regulate groundwater.[79] The court then looked to § 36.002 of the Water Code to interpret the legislature's recent amendments.[80] In doing so, the court found that the words "deprive" and "divest" as used in § 36.002(c) did not include the government taking a landowner's property rights for which the government must adequately compensate the landowner.[81] Accordingly, the court recognized that "a landowner cannot be deprived of all beneficial use of the groundwater below his property merely because he did not use it during an historical period and supply [was] limited."[82] The court therefore affirmed the finding of the court of appeals and remanded the case for Day's takings claims to be fully explored.[83]

The end result is that Texas is now one of only five states—and the only Western state—that follows the ownership-in-place rule with regards to water,[84] which, like hydrocarbons, is subject to the rule of capture.[85] Therefore, unless state regulation curtails production or negligent harm is done to the reservoir, surface owners may produce as much water as they like without exposure to surrounding landowners who might complain their aquifers are being depleted.[86]

IV. REGULATORY TAKINGS ANALYSIS GENERALLY

How will water rights be considered in the regulatory takings context? The U.S. Supreme Court provides the basic takings jurisprudential framework that will be applied to water, and its case law on the subject has

[78] *Id.* at 840–41.

[79] *Id.* at 841.

[80] *Id.* at 842.

[81] *Id.* at 842–43.

[82] *Id.* at 843.

[83] *Id.*

[84] A. DAN TARLOCK, LAW OF WATER RIGHTS AND RESOURCES § 4.6 (2014) (noting that the other four are Louisiana, Connecticut, Maine, and Rhode Island.).

[85] Sipriano v. Great Spring Waters of Am., Inc., 1 S.W.3d 75, 76 (Tex. 1999); Hous. & Tex. Cent. R.R. Co. v. East, 81 S.W. 279, 280 (Tex. 1904).

[86] *Sipriano*, 1 S.W.3d at 76.

varied over the decades.[87] The New Deal programs, with their sometimes heavy regulatory loads, led to federal jurisprudence that disfavored property regulatory takings challenges.[88] In the past two decades, the U.S. Supreme Court has more closely scrutinized federal regulation and sought to more actively defend private property rights by allowing for more compensation for regulatory takings in a broader range of circumstances.[89]

Historically, the U.S. Supreme Court recognizes two situations where *per se* takings exist and therefore require automatic compensation to the individual with lost property rights.[90] The first situation involves a physical intrusion onto real property, no matter how small, while the second situation involves a government regulation that prevents "all economically beneficial or productive use of land."[91] A third category of takings are not as black and white.[92] Cases that involve government regulations that limit, but not completely deprive, use of real property are determined on a case-by-case basis.[93] The following summary of two cases illustrates how the U.S. Supreme Court looks at regulatory takings, and lays the groundwork for Texas jurisprudence on such takings that will in turn be applied to water, perhaps as it has been to oil and gas.

A. Per Se Takings—Loretto v. Teleprompter Manhattan CATV Corp.

When a governmental entity actually occupies a private tract, takings compensation is likely.[94] The U.S. Supreme Court noted in *Loretto v. Teleprompter Manhattan CATV Corp.* that the nature of the regulation giving rise to a takings claim is crucial.[95] Laws and rules that lead to a permanent occupation of the caption tract are, in essence, a condemnation action and thus a *per se* takings requiring compensation.[96] A temporary physical occupation is still considered serious and may require

---

[87] *See* Barton H. Thompson, Jr., *Application of the Law of "Takings" to Restrictions on Mineral Development*, *in* MINERAL LAW SERIES 1995, at 8-1. (Rocky Mtn. Min. L. Found. No. 3, 1995).

[88] *Id.*

[89] *Id.*

[90] Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1015 (1992).

[91] *Id.*

[92] Penn Cent. Transp. Co. v. City of New York, 438 U.S. 104, 123 (1978).

[93] *Id.* at 124.

[94] *See* Edwards Aquifer Auth. v. Bragg, 421 S.W.3d 118, 138 (Tex. App.—San Antonio 2013, pet. filed).

[95] *See* 458 U.S. 419, 426–35 (1982).

[96] *See id.* at 427–35.

compensation, but is not a *per se* taking and instead requires some balancing of the facts of the particular case.[97] Regulations that entirely or partially prevent mineral development, however, rarely involve either permanent or even temporary occupation of the land.[98] Moreover, perhaps since whenever a *per se* takings category is created, property owners quickly try to fit every new regulatory takings action into the new category, the Supreme Court has opined that courts should narrowly construe what even physical occupation may entail.[99]

B. Lucas v. South Carolina

If there is no physical invasion, takings cases get thornier. What happens when government regulations entirely eliminate the possibility that any portion of a tract may be developed? It is established that the government generally "takes" property when the landowner is left without any economically beneficial use of his land.[100] A regulatory taking by the government is equivalent to the government physically occupying the landowner's property.[101] The Court acknowledged that there were only two exceptions to the *per se* takings rule.[102] The first exception is if the regulation imposed by the government prevented a nuisance to the extent common law would have prevented the same nuisance.[103] The second exception is if the regulation imposed by the government reflected the state's background principles of real property.[104]

In *Lucas*, the South Carolina Coast Council (SCCC) was created and charged with enforcing the Coastal Zone Management Act in 1977.[105] This Act designated land next to beaches and sand dunes as critical areas that required permits to use the land for any purpose other than what the area was already devoted to.[106] David Lucas purchased two beachfront lots in

---

[97] *See id.* at 432–44.

[98] Thompson, *supra* note 87, at 8-3.

[99] *Id.* at 8-4 (citing Yee v. City of Escondido, 503 U.S. 519, 526-32 (1992)).

[100] *See* Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1015–16 (1992).

[101] *See id.* at 1017.

[102] *Id.* at 1015.

[103] *See id.* at 1029 (Regulations leading to total deprivation of use require compensation unless the rule does "no more than duplicate the result that could have been achieved . . . under the State's law of private nuisance . . . or otherwise.").

[104] *See id.* at 1030–32.

[105] *Id.* at 1007–08.

[106] *Id.*

1986 and intended to build single dwelling homes on the land.[107] The lots were not designated as a "critical area" under the 1977 legislation and the state had not designated the area as a "construction-free zone."[108] But two years later, when Lucas began to develop his lots, the SCCC had expanded the construction-free zone to include Lucas's lots, and Lucas was prohibited from building on his property.[109] The SCCC also enforced the Beachfront Management Act in an effort to control erosion issues that had affected the area.[110] The legislation set a baseline that connected the furthest landward points of erosion, and prohibited certain activities, including construction of homes, from the baseline to the water.[111]

Unable to build on his property (that had been zoned for construction), Lucas brought suit in South Carolina Court of Common Pleas, stating that the new regulations constituted a taking without just compensation, and therefore violated the Fifth Amendment.[112] The trial court held that the regulation was a taking regardless of the state's authority to exercise its police power because Lucas purchased the land with the intent to build before the restrictions were established.[113] The Supreme Court of South Carolina reversed the decision based on the theory that regulations that serve a valid purpose do not constitute a taking under the Fifth Amendment.[114]

The U.S. Supreme Court began its analysis by citing Justice Holmes's *Pennsylvania Coal Co. v. Mahon* opinion where the Court recognized that "while property may be regulated to a certain extent, if regulation goes too far it will be recognized as a taking."[115] The Court recognized that while no set formula exists to determine when regulations that limit property use go too far, two *per se* takings cases exist (physical intrusion and denial of all economical use of property).[116] When the government denies a property owner all economically viable use of the land, it essentially transforms the use of the land from private use to strictly serving governmental needs.[117] The Court concluded that while the regulations served legitimate

---

[107] *Id.* at 1008.

[108] *Id.*

[109] *Id.* at 1008–09.

[110] *See id.* at 1008.

[111] *See id.* at 1008–09.

[112] *Id.* at 1009.

[113] *Id.*

[114] *Id.* at 1009–10.

[115] *Id.* at 1014 (quoting Pa. Coal Co. v. Mahon, 260 U.S. 393, 415 (1922)).

[116] *Id.* at 1015–16.

[117] *Id.* at 1018.

governmental purposes, the regulations constituted a taking because they deprived Lucas of all economically viable uses of the property.[118]

The Court stated that the South Carolina Supreme Court incorrectly based its decision on the premise that the regulation did not constitute a taking because the regulation served a legitimate public purpose of preventing harm.[119] Instead, regulatory deprivation (and possible takings) cases are based on whether the "restrictions were reasonably related to the implementation of a policy . . . expected to produce a widespread public benefit and applicable to all similarly situated property."[120] Harm prevention, it ruled, cannot be used to excuse the government from justly compensating a property owner when the governmental regulation completely denies the owner of all economically beneficial use of the property.[121]

Just as physical occupation of property requires just compensation, regulations that prevent any economically beneficial use of land require just compensation as well.[122] The Court found that legislation, such as the Beachfront Management Act, could not add additional exceptions allowing the government to forego compensation.[123] Unless regulations are justified through private nuisance laws or a state's power to stop nuisances that affect the general public, the government must compensate property owners.[124] Additional factors to consider in a total taking inquiry include the following: (1) the activity's degree of harm to the surrounding neighbors and area; (2) the activity's social value; (3) whether the activity is suitable for the location; and (4) the ability to avoid harm through private and government measures.[125] Because nuisance laws would not prevent a property owner from building a house, the government regulation constituted a taking and required compensation.[126]

In sum, *Loretto* and *Lucas* help establish initial considerations any claimant should expect a court to make. First, does the regulation at issue advance a legitimate state interest?[127] Second, does the regulation at issue

---

[118] *Id.* at 1031–32.

[119] *Id.* at 1022.

[120] *Id.* at 1023 (quoting Penn Cent. Transp. Co. v. City of New York, 438 U.S. 104, 133–34 n.30 (1978)).

[121] *See id.* at 1026.

[122] *See id.* at 1028–29.

[123] *Id.* at 1029.

[124] *See id.*

[125] *Id.* at 1030–31.

[126] *Id.* at 1031.

[127] *Id.* at 1016.

result in a *per se* takings?[128] This second step, when applied to mineral or water development, likely invokes the *Lucas* test, which asks whether the regulation denies all economic or productive use of the captioned land.[129] If no takings is yet found because not all economic or productive use has been denied, the takings question becomes more difficult, as discussed next.

C. Penn Central Transportation Co. v. City of New York

Regulations that *partially* prevent beneficial uses of a tract of land are more challenging. In the landmark *Penn Central* case, the owners of Grand Central Station (collectively, Penn Central) in New York City (NYC) wanted to further develop the property by constructing office space above the railroad terminal.[130] NYC's ordinances prohibited substantial alteration of historical structures such as Grand Central Station without prior approval.[131] When Penn Central applied for permission to develop the space above the terminal, the NYC's Landmarks Preservation Commission denied the application and required the terminal to remain as it was.[132] The owners brought suit against NYC, alleging that, by restricting their developmental rights to the space above the terminal, NYC had taken their property.[133]

Penn Central sued NYC for violation of the Fifth Amendment Takings Clause applied to the states through the Fourteenth Amendment,[134] seeking injunctive relief to prevent the city from prohibiting construction and damages for a temporary taking.[135] The trial court granted the sought-after injunctive relief and severed the temporary taking claim.[136] The New York Supreme Court Appellate Division reversed the trial court's finding and stated there was no taking because the regulations served a legitimate public purpose in protecting historical landmarks.[137] The New York Court of Appeals affirmed, holding that there could not be a taking claim without a transfer of control of the property to the city or state.[138]

---

[128] *Id.* at 1015.

[129] *Id.*

[130] Penn Cent. Transp. Co. v. City of New York, 438 U.S. 104, 116 (1978).

[131] *Id.* at 111–12.

[132] *Id.* at 116–17.

[133] *Id.* at 119.

[134] *Id.*

[135] *Id.*

[136] *Id.*

[137] *Id.*

[138] *Id.* at 120–21.

The Supreme Court granted certiorari and reviewed the Fifth Amendment taking claim.[139] Previous cases had not established a set formula to determine when government regulations go so far as to constitute a taking.[140] The Court analyzed the circumstances on a case-by-case basis to establish whether compensation was required.[141] It first recognized that "[g]overnment hardly could go on if to some extent values incident to property could not be diminished without paying for every such change in the general law."[142] The Court outlined several historical cases where government regulation did not constitute a taking because either the regulation protected the health, safety, morals, or general welfare of the public or the landowner had a reasonable expectation of regulation.[143] Penn Central argued that the government regulation was so invasive that it constituted an eminent domain action and therefore required just compensation.[144]

The Court noted that there was not, and could not be, any "set formula" for deciding when "justice and fairness" require monetary compensation for regulatory takings for public use.[145] The Court narrowed the question into an analysis of the regulation's impact by applying three factors: (1) the economic impact of the regulation; (2) the interference with investment-backed expectations of the property owner seeking compensation; and (3) the nature of the governmental action (*e.g.*, does the government action result target a legitimate concern?).[146]

The Court pointed out that while the regulation prevents new development, it did not interfere with both the current and historical use of Grand Central Station.[147] Because Penn Central was able to continue to use the station, the regulation did not interfere with Penn Central's primary use expectation.[148] Penn Central was "not only [able] to profit from the Terminal but also to obtain a 'reasonable return' on its investment."[149] The Court determined that limited economic impact on Penn Central existed

---

[139] *Id.* at 104.

[140] *Id.* at 123–24.

[141] *Id.* at 124.

[142] *Id.* (quoting Pa. Coal Co. v. Mahon, 260 U.S. 393, 413 (1922)).

[143] *See id.* at 125–28.

[144] *See id.* at 136.

[145] *Id.* at 124.

[146] *See id.* at 124, 136–38.

[147] *See id.* at 136.

[148] *Id.*

[149] *Id.*

because Grand Central Station continued to operate in the same manner as it always had.[150]

Next, the Court highlighted that while Penn Central could not construct the proposed plans, the regulation did not prohibit construction of all portions above Grand Central Station.[151] The Commission's response to the proposed plans stated that construction approval would depend on ability to "harmonize in scale, material, and character with [the Terminal]."[152] In other words, the Commission's denial in this instance did not preclude future applications for additions and modifications to the station and provided some guidelines for what would be considered in future applications.[153]

The Court held that while the regulation interfered with the ownership rights of Penn Central, the regulation did not constitute a taking.[154] The Court did not find any significant economic impact or interference with investment-backed expectations because the Grand Central Station continued to turn a profit and Penn Central maintained the option of moving the development rights to several other buildings.[155]

The Court based the third part of the test on whether the regulation was reasonable in light of the goals and impacts of the regulation.[156] Finally, although not in dispute, the Court found that the regulation was legitimately related to the public welfare.[157]

V. GENERAL REGULATORY TAKINGS ANALYSIS IN TEXAS

Over time, how federal courts have analyzed the character of a regulation has fluctuated.[158] For example, in *Lucas*, the Supreme Court viewed the result of the regulation to be equivalent to the government physically occupying the property.[159] Accordingly, the Court deemed that the government had taken the property, as opposed to having carried out a regulatory taking.[160] Therefore, if the government imposes a regulation that

---

[150] *See id.*

[151] *Id.* at 136–37.

[152] *Id.* at 137.

[153] *See id.*

[154] *See id.* at 137–38.

[155] *See id.* at 136–38.

[156] *See id.* at 138.

[157] *Id.*

[158] *See* Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1028–29 (1992).

[159] *See id.*

[160] *See id.*

is so burdensome that the property is not economically viable to the landowner, the second and third parts of the *Penn Central* test become irrelevant.[161] Texas has looked closely at the federal case law footprints and, as described below, has followed that general jurisprudential framework, if in slightly a different order.

A. Compensable Regulatory Takings Generally—Mayhew v. Town of Sunnyvale

The common law jurisprudence for regulatory takings in Texas is detailed in *Mayhew v. Town of Sunnyvale*.[162] In *Mayhew*, the Texas Supreme Court adopted the analysis that a compensable regulatory taking may occur (i) if a statute or regulation does not substantially advance a legitimate governmental purpose, **or** (ii) if the statute or regulation prevents the landowner from any economic use of the property, **or** (iii) if the statute or regulation *unreasonably interferes* with the landowner's use and enjoyment of the property.[163]

As for the first possibility, the court in *Mayhew* opined that "[t]he standard requires that the ordinance 'substantially advance' the legitimate state interest sought to be achieved rather than merely analyzing whether the government could rationally have decided that the measure achieved a legitimate objective," before reciting several legitimate government purposes that may be advanced by laws and rules, such as "enhancing the quality of life," "protecting a beach system for recreation, tourism, and public health," and "protecting residents from the ill effects of urbanization."[164] This standard has been an easy hurdle for regulators to meet, particularly in oil and gas regulatory jurisprudence.[165]

---

[161] *See id.*

[162] *See generally* 964 S.W.2d 922 (Tex. 1998). An excellent description of the events of *Mayhew*, a dispute that actually comprised a series of cases leading up to the final Texas Supreme Court case, described above, was presented by attorney Reid C. Wilson in a paper entitled *Practical Tips for Dealing with Local Governments* given to the 27th Annual Advanced Real Estate Law Course, Jul. 7-9, 2005, San Antonio, Texas. Reid C. Wilson, *PRACTICAL TIPS FOR DEALING WITH LOCAL GOVERNMENTS (WHAT A REAL ESTATE LAWYER NEEDS TO KNOW AND DO)*, 11–13 (2005), *available at* http://www.wcglaw.net/docs/Practical%20Tips%20for%20Dealing%20With%20Local%20Goverments.pdf.

[163] 964 S.W.2d at 933, 935.

[164] *Id.* at 934 (citing Nollan v. Cal. Coastal Comm'n, 483 U.S. 825, 834 n.3 (1987)).

[165] Dwight Shupe, *Takings Litigation: Compensable Regulatory Takings in Texas*, SPECIAL INSTITUTE ON DEVELOPMENT ISSUES & CONFLICTS IN MODERN GAS AND OIL PLAYS, 7 (2004), *available at* http://www.klgates.com/files/tempFiles/dc7c600d-e892-47e8-9632-185804d08c41/takingslitigation.pdf.

Moving to the second criterion, the *Mayhew* court noted that "[a] restriction denies the landowner all economically viable use of the property or totally destroys the value of the property if the restriction renders the property valueless."[166] "Determining whether all economically viable use of a property has been denied entails a relatively simple analysis of whether value remains in the property after the governmental action."[167]

Finally, a taking can occur when governmental restrictions unreasonably interfere with the landowner's use and enjoyment of his property.[168] The *Mayhew* court cited two factors to be considered: (1) the economic impact of the regulation; and (2) the extent to which the regulation interferes with distinct investment-backed expectations.[169] Regarding economic impact, the court broadly opined that this prong "merely compares the value that has been taken from the property with the value that remains in the property," and "[t]he loss of anticipated gains or potential future profits is not usually considered in analyzing this factor."[170] Regarding investment-backed expectations, the court noted that these were generally based only on the existing and permitted uses of the property.[171] The increased-density development sought by Mayhew having been "officially" rejected, but with Mayhew still endowed with the ability to develop on a one-unit-per-acre basis, was apparently enough for the court to find no takings had taken place.[172]

B. Interference with Use and Enjoyment—Sheffield v. Glenn Heights

Interference with "use and enjoyment" resonated loudly in the next major Texas case that helped define the general analysis to be applied to an alleged partial regulatory taking.[173] In 1986, Glenn Heights zoned a tract of land as Planned Development District 10 (PD 10) that included a provision that restricted the house density level to 5.5 dwellings per acre.[174] In 1995, the city recognized a surplus of high-density dwelling zones and developed the "Future Land Use Plan" that restricted house density levels to four or

---

[166] 964 S.W.2d at 935.

[167] *Id.*

[168] *Id.*

[169] *Id.*

[170] *Id.* at 935–36.

[171] *Id.* at 936.

[172] *See id.* at 938.

[173] *See generally* Sheffield Dev. Co. v. City of Glenn Heights, 140 S.W.3d 660 (Tex. 2004).

[174] *Id.* at 664.

five houses per acre.[175] This plan rezoned all property within city limits except for a few planned development districts, including PD 10.[176] In 1996, Sheffield Development Company contracted to buy 194 acres within PD 10 for $600 an acre (well below market price).[177] Sheffield intended to develop the land into a housing subdivision and met with city officials several times to ensure no zoning limitations existed before the final purchase.[178]

At the same time they were meeting with Sheffield, but without Sheffield's knowledge, the City officials were also conducting private meetings to discuss "downzoning" PD 10.[179] During this time, a "Vested Rights Statute" existed that allowed landowners to file a plat with the City and vest their zoning rights.[180] In other words, a landowner could file a plat to avoid subsequent zoning changes.[181] On January 6, 1997, the City passed a resolution that prevented landowners from filing plats until February 6, 1997, and later extended the moratorium to March 6, 1997.[182] The City claimed the need to conduct a study of the current zoning structure in order to see if it aligned with the comprehensive use plan.[183] On March 11, Sheffield attempted to file a plat with the city to vest the PD 10 zoning regulations.[184] The City Secretary informed Sheffield that the City Manager had continued the moratorium through May 15, 1998.[185] During this time, but after Sheffield's final purchase, the City rezoned PD 10 restricting the number of houses per acre.[186] Sheffield filed suit claiming that both the City's moratorium and rezoning constituted a taking that required just compensation.[187]

---

[175] *Id.*

[176] *Id.*

[177] *Id.*

[178] *Id.*

[179] *Id.* at 664–65. "Downzoning" is the process by which the number of buildable lots in a zoned tract is lowered by raising the minimum number of contiguous square feet required for an individual lot. In *Sheffield*, the downzoning meant that the minimum lot size went from 6,500 to 12,000 ft^2. *Id.* at 665.

[180] *Id.*

[181] *See id.*

[182] *Id.*

[183] *Id.*

[184] *Id.*

[185] *Id.*

[186] *Id.* at 666.

[187] *Id.*

The trial court found that the moratorium did not constitute a taking because it "substantially advanced a legitimate governmental interest, [and] did not unreasonably interfere with Sheffield's rights to use and enjoy its property."[188] The court also found that while the rezoning did substantially advance government interests, it severely impacted Sheffield's economic interests, deprived investment-backed expectations, and unreasonably disturbed his use and enjoyment of the property.[189] The court of appeals found that both the moratorium and the rezoning constituted a taking.[190] The Supreme Court of Texas granted certiorari to review the case, and applied federal jurisprudence to determine the issue.[191]

The court outlined three *per se* takings scenarios, including a physical invasion of property, regulations that deny all economically beneficial use of land, and regulations that fail to substantially advance legitimate state interests.[192] It noted that when a situation does not fall within one of these three categories, a question of law then exists whereby a court must balance the public interest against the private owner's interests.[193] The court was therefore compelled to apply the *Penn Central* factors: economic impact; interference with investment-backed expectations; and the character of the governmental action, when balancing the competing interests.[194]

When considering these, the court first determined that the rezoning met the qualifications to constitute a substantial advancement of legitimate governmental interests.[195] In doing this, it noted that a legitimate public use is determined by applying a rational basis test[196] and that a legitimate public use will be found if the regulating entity can conceive any rational reason for protecting the public's interest—a fairly low threshold to meet.[197] The court also found that such a substantial advancement does not have to be proved to the degree of certainty, particularly in situations, such as the present, when the regulation is based on estimates and projections.[198] "The

---

[188] *Id.*

[189] *Id.*

[190] *Id.* at 667–68.

[191] *Id.* at 669.

[192] *See id.* at 671.

[193] *Id.* at 671–72.

[194] *Id.* at 672 (citing Penn Cent. Transp. Co. v. City of New York, 438 U.S. 104, 124 (1978)).

[195] *Id.* at 677.

[196] *See id.* at 675.

[197] *See id.* at 675–76.

[198] *Id.* at 676.

City could reasonably conclude that this would substantially advance its legitimate interest in preserving a smaller community environment."[199]

Next, the court considered the *Penn Central* factors of investment-backed expectations and economic impact.[200] The court stated that lost profits is one of several factors considered when determining the economic impact.[201] In this case, although the regulation had a significant economic impact due to Sheffield's lost profits, the land was still worth substantially more (four times more) than the purchase price.[202] This investment profit seemed to be the determinant factor in the court's economic impact analysis, mitigating the loss caused by the regulation.[203] The court concluded that, while Sheffield's expectations were reasonable in light of his research of previous zoning laws and his efforts to communicate with the City,[204] that did not mean that the restrictions severely interfered with his investment expectations.[205] The purchase investment was speculative in itself because Sheffield was not guaranteed to successfully develop and sell the housing subdivision.[206] Additionally, the purchase price of the land was small in comparison to the cost to develop it.[207]

The court also identified an additional issue not specifically mentioned in *Penn Central* by considering the City's conduct in dealing with Sheffield.[208] The City's decision to rezone and place a moratorium on plat filings did not take effect until *after* Sheffield closed on the property.[209] Although the City's conduct was a cause for concern for the court, it did not take away from the legitimate goals achieved from rezoning.[210] The court therefore determined that while the rezoning and moratorium may have been unreasonable, the City's action did not go so far as to constitute a taking, and therefore Sheffield would take nothing on its takings claim.[211]

This is a harsh outcome, as it appears the city employees were clearly false in their dealings with the developer. As one commentator put it, "[i]f

---

[199] *Id.*

[200] *See id.* at 677–78.

[201] *Id.* at 677.

[202] *See id.*

[203] *See id.*

[204] *See id.* at 678.

[205] *See id.*

[206] *See id.*

[207] *Id.*

[208] *Id.*

[209] *Id.* at 679.

[210] *Id.*

[211] *See id.*

the facts in *Sheffield* do not constitute an unreasonable interference with the use and enjoyment of the PD-10 property by . . . Sheffield (meeting both the test of economic impact and interference with investment-backed expectations), then it is difficult for me to imagine a set of facts that would."[212]

VI. TEXAS WATER REGULATORY TAKINGS LITIGATION BEGINS—*EDWARDS AQUIFER AUTHORITY V. BRAGG*

How will regulatory takings analysis in the water context look in Texas? Once *Day* was released, landowners unhappy with GCD orders curtailing their water production and use quickly filed suit.[213] *Bragg* was the first such case to be considered at the state appellate level.[214] On Nov. 13, 2013, the San Antonio Court of Appeals released its opinion considering whether a GCD's withholding of a water permit from one pecan orchard and the curtailing of another in South Texas were a regulatory taking requiring compensation.[215]

The Braggs owned two tracts over the Edwards Aquifer known as the Home Place Orchard (60 acres) and the D'Hanis Orchard (42 acres) purchased in 1979 and 1983, respectively.[216] After the EAA was established and the EAAA became effective in 1996, the Braggs applied for "Initial Regular Permits" as existing users of groundwater.[217] The applications contained a declaration of maximum annual beneficial use for groundwater in the Home Place Orchard of 228.85 acre-feet of groundwater and 193.12 acre-feet of groundwater for the D'Hanis Orchard.[218] The EAA examined the historical use of water for the two orchards from 1972 to 1993.[219] As a result, the EAA permitted only 120.2 acre-feet of the water for the Home Place Orchard and issued no permit for the D'Hanis Orchard, finding no historical use.[220]

---

[212] Shupe, *supra* note 165, at 9.

[213] *See* Jess Davis, *Texas Water Permit Fight May Foster More Takings Claims*, LAW360, August 28, 2013, *available at* http://www.law360.com/articles/468534/texas-water-permit-fight-may-foster-more-takings-claims (subscription required) (last visited Oct. 16, 2014).

[214] 421 S.W.3d 118, 127 (Tex. App.—San Antonio 2013, pet. filed).

[215] *See generally id.*

[216] *Id.* at 124.

[217] *See id.* at 126.

[218] *Id.*

[219] *See id.*

[220] *Id.*

In response, the Braggs sued, moving for partial summary judgment on the takings claims.[221] The EAA moved also for summary judgment.[222] The trial court found for the Braggs, granting their motion and concluding the EAA's actions amounted to a regulatory taking.[223] In a subsequent bench trial conducted to determine the compensation due, the judge considered the amount of groundwater to which the Braggs were entitled and the value of that groundwater.[224] Ultimately, the trial court held that the Braggs did not suffer an actual or *per se* taking of their groundwater real property and that the tracts still had some value without the water use.[225] The court also measured the value of the regulatory taking at $134,918.20 for the D'Hanis tract and $597,575.00 for the Home Place tract, holding in effect that the statute of limitations did not bar the Braggs' claim.[226] On appeal from both parties, the Fourth Court of Appeals considered four significant questions.[227]

A. Was There a Taking?

After the trial court found a regulatory takings had occurred, the EAA argued to the court of appeals that the EAAA did not unreasonably interfere with the "use and enjoyment" of the orchards to the extent the tracts were unusable for that purpose.[228] Crafting a rather brazen argument, the EAA claimed its reduction/denial of the water permits *enhanced* the value of the Braggs' tracts because the EAAA conserved/preserved the water in the aquifer so that the Braggs could continue to rely on it in the Home Place tract and/or buy water for the D'Hanis tract, could lease the permit rights received for the Home Place tract, and could now lease the permit rights of other parties to irrigate both tracts to their hearts' content.[229] The EAA claimed all of these ethereal "benefits" were leavened only by the all-too-real increased irrigation costs.[230]

The court of appeals pierced this ham-fisted salesmanship of government regulation first with admirable understatement: "We believe

---

[221] *Id.*
[222] *Id.*
[223] *Id.*
[224] *Id.*
[225] *Id.*
[226] *Id.*
[227] *See id.*
[228] *Id.* at 137.
[229] *See id.*
[230] *See id.*

[the EAA] misconstrues the nature of the takings claims asserted here and the analysis of whether a taking has occurred."[231] Then, the court invoked *Day* for the proposition that since the landowner has absolute title in severalty to the groundwater in place beneath his land, subject only to the state's police power and the common law rule of capture, the issue was not whether the Braggs had been denied their ability to sell or lease their groundwater but rather whether their own use had been hindered by the EAAA to the extent that some or all of the losses inflicted on the Braggs by the restrictions ought to be shouldered by the government.[232] Because the trial court found that the highest and best use of the tracts was as pecan orchards, the court defined its task as determining whether the EAA, through the EAAA, impacted the Braggs' pecan irrigation plans to the extent that a compensable taking occurred.[233]

The court then noted the two circumstances when the U.S. Supreme Court recognizes *per se* takings—first, when a direct, physical invasion has taken place and second, when a regulation "denies all economically beneficial or productive use of the land"[234]—did not apply to the facts before them.[235] Instead, after admonishing opinion readers that "the three *Penn Central* factors [are not] the only ones relevant in determining whether the burden of regulation ought 'in all fairness and justice' to be borne by the public,"[236] the court hurried to apply the three *Penn Central* factors with little variation in theme from the original piece.[237] Again, these were: (1) the economic impact of the regulation or law upon the property owner; (2) the extent to which the government action affected the property owner's investment-backed expectations; and (3) the nature of the government's action.[238]

As to the economic impact on the Braggs, the court of appeals first noted that a reduction in property value stemming from a prohibitive regulation cannot by itself create a taking because all real property is owned subject to a state's police power.[239] Likewise, the court also opined that

---

[231] *Id.*

[232] *See id.* at 137–38.

[233] *See id.* at 138.

[234] *Id.* (quoting Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1015–16 (1992)).

[235] *See id.*

[236] *Id.* at 139 (quoting Hallco Tex., Inc. v. McMullen Cnty., 221 S.W.3d 50, 75 (Tex. 2006)).

[237] *See id.* at 139–45.

[238] *See id.* at 138–39 (citing Penn Cent. Transp. Co. v. City of New York, 438 U.S. 104, 124 (1977)).

[239] *Id.* at 139.

even if the single most profitable use of a tract is lost—but others remain—a compensable taking may not automatically be incurred.[240]

Then the court examined the record describing the actual impact on the Braggs' operations caused by the EAA's action on the permits, finding that the Braggs would now have to purchase or lease water under the EAA's permit scheme.[241] The EAA claimed that the impact on the pecan operations would only amount to a ten percent increase in irrigation costs.[242] The court did not consider even this increase, if true, as just an "incidental diminution in value," but rather a significant impact that would force the Braggs to purchase or lease what they had before the EAA's action on their permit requests, being an unrestricted right to use the groundwater on their tracts.[243] Thus, the first *Penn Central* factor went in the Braggs' favor.[244]

Second, the court considered whether or not there existed among the Braggs an investment-backed expectation of profit from the activities that were later curtailed by the permitting activities of the EAA.[245] Acknowledging that applying this prong to groundwater use is difficult because of all the potential uses of groundwater, the court noted that historical, existing, and permitted uses of the captioned tracts comprise the "primary expectation" of the affected groundwater owner.[246] In addition, whether the regulations existed at the time of the purchase by claimants, and whether the claimants knew of the existing regulation—or should have known—are also to be considered.[247]

In *Bragg*, the claimants easily jumped this evidentiary hurdle, with the court commenting on the claimants' long-held and demonstrable intent to use the tracts as pecan orchards, their purchase of pumps and other irrigation equipment, and their expectation that they could use as much groundwater as they liked to irrigate the trees.[248] Further, the court quoted Mr. Bragg as saying the Braggs would never have bought the land if they knew they would be unable to use the Edwards Aquifer to their liking.[249]

---

[240] *See id.*

[241] *See id.* at 141.

[242] *See id.*

[243] *See id.*

[244] *Id.*

[245] *See id.* at 142–44.

[246] *See id.* at 142 (quoting Mayhew v. Town of Sunnyvale, 964 S.W.2d 922, 936–37 (Tex. 1998)).

[247] *Id.*

[248] *See id.* at 142–43.

[249] *See id.* at 143.

On the other side of the ledger, the court also noted that when the Braggs were planning to sink a water well on the D'Hanis tract in 1993, they *did* know of the recently-passed EAAA (that was then delayed by litigation that lasted until 1996).[250] More broadly, the court noted that investment-backed expectations must be reasonable and allowed that the claimants certainly had no reasonable investment-backed expectation that regulatory curtailment of groundwater use could *never* happen in the future.[251]

After a description of Bragg's extensive experience in agriculture generally, and pecan production specifically,[252] the court highlighted a test for the reasonableness of expectations, taken from *Appolo Fuels, Inc. v. United States*: (1) whether the claimant operated in a "highly regulated field" and should have expected close regulatory control; (2) whether the claimant was aware of the issue(s) that triggered the need for the regulation at the time it purchased the captioned land; and (3) whether the claimant could have "'reasonably anticipated' the possibility of such regulation in light of the 'regulatory environment' at the time of purchase."[253] The Braggs were found to have met all three criteria, and therefore prevailed on the second prong.[254]

Third, the court considered the nature of the regulation and, basically, whether the regulators had a good reason to be concerned about the activity and whether the regulation was reasonably directed toward mitigating/ preventing the possible harm to the aquifer.[255] Not surprisingly, the court found that this prong augured against a finding of a compensable taking.[256]

In the end, the court found that a compensable taking existed because two prongs went in favor of the Braggs while only one was found in favor of the EAA.[257]

B. Who Pays—the State of Texas or the Edwards Aquifer Authority?

One unexpected question arose on appeal: who pays the compensation taking—the GCD or the state?[258] Since the trial court found that the EAA

---

[250] *See id.* at 143–44.

[251] *See id.* at 143.

[252] *See id.* at 143–44.

[253] *Id.* at 144 (citing 381 F.3d 1338, 1349 (5th Cir. 2004)).

[254] *See id.* at 144.

[255] *See id.* at 144–45.

[256] *Id.* at 145.

[257] *See id.* at 146.

[258] *See id.* at 126–27.

acted without discretion and as mandated by the state, on appeal the EAA argued that this conclusion could only mean that the state, as opposed to the EAA, should pay the takings liability.[259] Therefore, the EAA argued, the Braggs should have sued the state on their taking claim.[260] The Braggs countered that the EAA is the regulatory agency that promulgated the actions that led to the takings and should therefore bear responsibility for the compensation, whether or not the state could also be a proper defendant.[261]

The EAA cited *Barshop v. Medina County Underground Water Conservation Dist*., a case that arose from the genesis of the EAAA, that claimed the language in § 1.07 of the EAAA meant that "[b]ased on this provision in the [EAAA], we must assume that the Legislature intends to compensate Plaintiffs for any taking that occurs."[262]

The court of appeals responded that, while the EAA was correct, *Barshop* also noted that "the [Edwards Aquifer] Authority may constitutionally take property as long as *it* provides adequate compensation" so that *Barshop* is not dispositive about who—the EAA or the state—should pay takings compensation.[263] After addressing some other federal and Texas cases produced by the EAA that the court acknowledged as being supportive of the argument that when an agency lacks discretion whether or not to "enforce a state law that may be characterized as the effectuation of the policy of the State of Texas embodied in that statute, it is the State that is liable," the court distinguished the current case in that it involved a state actor enforcing a state law and not a county employee enforcing a state law.[264]

In *Day*, the EAA claimed that, like the Braggs, most landowners in its jurisdiction could not show the historical use proof necessary for a permit and that since the EAA was required to shrink the permitted amounts according to the historical use proven, or deny them altogether, a "disastrous" wave of litigation and liability was to come.[265] And as in *Day*, the court of appeals in *Bragg* largely shrugged at this concern, opining instead that the state legislature certainly must have known the potential impact of EAA liability for takings claims when it passed the enabling

---

[259] *See id.*

[260] *Id.* at 127.

[261] *Id.*

[262] *Id.* (quoting 925 S.W.2d 618, 631 (Tex. 1996)).

[263] *Id.* (quoting 925 S.W.2d at 628).

[264] *See id.* at 130.

[265] *See* 369 S.W.3d 814, 843 (Tex. 2012).

legislation calling for the EAAA.[266] In any event, the court finally held that, "[a]though the [EAA]'s actions in this case may not have been discretionary and even if the State might be a proper party, we conclude the [EAA] also is a proper party to a takings lawsuit instituted under the [EAAA]."[267]

C. Application of the Statute of Limitations

The parties disputed whether or not the ten-year statute of limitations applied.[268] The EAA argued that the statute of limitations began to run with the final activation of the EAAA in 1996, and thus the Braggs had until 2006 to bring an action.[269] The Braggs countered that the statute was triggered at the time of the application of the regulatory scheme to their tracts—in 2004 and 2005—and that since the EAA had previously argued in federal court the very same thing (in an effort to counter due-process claims), they were judicially estopped from claiming otherwise.[270] The trial court held for the Braggs.[271]

After dismissing the Braggs' judicial estoppel argument and establishing that the ten-year statute of limitations period applied, the court of appeals found that the statute of limitations began to run on the dates that the permits were granted or denied, in 2004 and 2005, respectively.[272] First, the court noted the difference between physical invasions and regulatory takings and that it is often inappropriate to apply the analysis of one type of case to the facts belonging to the other variety, but that generally a cause of action accrues the moment an activity invokes liability.[273] The court then noted that in Texas, "[w]hen . . . there has been no 'entry' on land, but rather an interference with the right to use the property, limitations must begin when that interference first occurs."[274] Drawing on that entry syllogism, the court held that the Braggs' cause of action "did not accrue, until the [EAA] made its final decisions regarding the application of the [EAAA] to the Braggs' permit applications. . . . As to the Braggs, the

---

[266] *See* 421 S.W.3d at 131.

[267] *Id.*

[268] *See id.*

[269] *See id.*

[270] *Id.* at 131–32.

[271] *Id.* at 131.

[272] *See id.* at 133–34, 136–37.

[273] *Id.* at 134–35.

[274] *Id.* at 135 (quoting Trail Enters., Inc. v. City of Hous., 957 S.W.2d 625, 631 (Tex. App.—Houston [14th Dist.] 1997, pet. denied)).

provisions of the [EAAA] were not implemented or applied until 2004 and 2005."[275]

D. How Much Compensation Is Due and When Is It Measured?

Finally, the court turned to the measure of compensation.[276] As for the Home Place Orchard, the trial court calculated the takings damages as the difference between the market value of the tract if the requested permit had been issued and the market value of the tract with the lessened permitted amount actually received.[277] In essence, the trial court measured the value of the land by valuing the lost water at the time of trial.[278] Since the water rights in the orchard were found to have a market value of $5,500 per acre-feet of water, and the permit was for 108.65 acre-feet less than the amount requested, the trial court held that the product of the two was the correct measure of compensation, being $597,575.[279] As for the D'Hanis Orchard, where the water permit had been denied, the trial court looked at the value of irrigated farmland vs. unirrigated farmland in the county and multiplied the difference by the acreage of the D'Hanis Orchard to arrive at $134,918 as the correct measure of compensation.[280] As a result of the differences in damage measurement methodology (loss of value for diminished water rights per acre vs. difference in value per acre for irrigated farmland vs. unirrigated farmland), even though the Home Place Orchard was less than 50% larger than the D'Hanis Orchard and did have some water rights associated with it approved by the EAAA, the takings compensation was over four times greater for the Home Place Orchard than the D'Hanis Orchard.[281]

The court considered two questions—what is the correct methodology to calculate the takings compensation and what is the correct time to measure the values associated with calculating the correct measure of compensation.[282] The EAA argued that the correct measure of compensation associated with a restriction that merely interferes with "use and enjoyment" should have been the difference between the value of the orchards immediately before and after the date of the regulation that

---

[275] *Id.* at 136–37.

[276] *See id.* at 146.

[277] *See id.*

[278] *See id.*

[279] *Id.*

[280] *See id.*

[281] *See id.*

[282] *Id.*

incurred the takings compensation.[283] Thus, the EAA argued that the market value takings measurements should have arisen in either May 1993, when the EAAA was enacted, or in June 1996, when the EAAA became effective after various legal challenges.[284] The Braggs countered that the date of the takings was when the EAA issued/denied the permits but, citing § 21.0421 of the Texas Property Code (the portion of the code covering condemnation proceedings initiated by state or local regulatory entities), that the value of the property should have been calculated at trial and not the date of the takings.[285]

The court of appeals agreed with the Braggs that the takings liability was incurred when the EAAA's stipulations impacted the two tracts but disagreed that the values of the tracts should be determined at trial, holding instead the value should have been determined at the time the EAA's final permitting incurred takings compensation.[286] The court of appeals noted that § 21 of the Texas Property Code does not apply to inverse condemnation suits—the takings at issue in *Bragg*—and that cases of inverse condemnation that require takings compensation assess damages either when the regulation is enacted or, as in *Bragg*, when the regulation is implemented.[287]

Turning to the question of how to value the takings compensation, the court of appeals noted the difficulty in defining what "property" was actually taken—was it the groundwater that was taken, or a portion of the surface estate?[288] The court also noted that Texas takings jurisprudence recognizes that cases requiring the valuation of subsurface estates fall into two general categories: (1) cases involving property taken in a condemnation/eminent domain context that require valuation of the sub-surface estate as a component of the whole land estate[289] and (2) cases involving taking all or a component of the sub-surface where the sub-surface estate must be valued as property separate from the land.[290] The bifurcation of the two types of cases hinges upon whether the mineral estate is being taken along with the rest of the fee estate and is a separate

---

[283] *Id.* at 146–47.

[284] *Id.* at 147.

[285] *Id.*

[286] *Id.*

[287] *Id.* at 148. "An inverse condemnation may occur when the government physically appropriates or invades the property. . . such as by restricting access or denying a permit for development." Westgate, Ltd. v. State, 843 S.W.2d 448, 452 (Tex. 1992).

[288] *Bragg*, 421 S.W.3d at 150–51.

[289] *Id.* at 150.

[290] *Id.* at 150–51.

component of the value of the entire fee estate (the first variety) or is being taken as a separate component alone (the second variety).[291] The proper measure of compensation due in the first strain of cases is the market value of the total fee estate as it was enhanced by the minerals actually taken.[292] The proper measure of compensation due in the second is the loss of value of the mineral estate itself.[293]

While *Bragg* does not neatly fit into either category, the appeals court noted that a common thread in such cases is that the sub-surface estate consisted of "property" or a "commodity" that comprised the business of the plaintiffs.[294] In *Bragg*, the water itself was not the commodity being sold, but rather was a component necessary for operation of another concern—growing pecans.[295] Therefore, the court determined that the "property" taken was the amount of irrigation water necessary to maintain the Braggs' enterprise and therefore the value of that "property" was the value of the pecan orchards right before and right after the application provisions of the EAAA were implemented and affected the orchards in 2004 and 2005—in other words, the difference between the value of the land as a commercial orchard with unlimited access to the Edwards Aquifer and the value of the land as an orchard with the permitted amount of water.[296]

VII. TEXAS OIL & GAS REGULATORY TAKING JURISPRUDENCE

With only two Texas water takings cases released (as of the time of this writing) and the court of appeals' admittance that such cases will largely be determined not by application of a rote jurisprudential formula but instead will entail fact-specific analysis, and with the obvious analogous qualities between hydrocarbons and water, one way to help predict how Texas water takings jurisprudence may develop for groundwater generally and, more specifically, for water produced and used for oil and gas operations, is to consider recent Texas regulatory takings jurisprudence in the realm of oil and gas.

---

[291] *See id.*

[292] *See id.* at 150.

[293] *See id.* at 151.

[294] *Id.*

[295] *Id.*

[296] *Id.* at 152.

A. Denial of All Economical Use

The mineral estate is considered dominant over the surface estate, and absent development restrictions in the severance, fee mineral ownership comes freighted with the ability to exclusively enter the mineral estate—and the surface estate above it within the same fee tract or leasehold as reasonably necessary—and to explore, produce, develop, and take away the minerals, and any other necessary incidents that will allow same.[297] Courts long ago noted that without this right of development over the resistance of the surface owner, the mineral estate would be worthless.[298]

But can a city or state agency by regulation prevent groundwater development for use in operations for oil and gas development? If they do, is compensation forthcoming? The answers after *Day* and *Bragg* are now "yes" and "maybe," respectively.[299] For example, the City of Grand Prairie, located on the eastern boundary of the Barnett Shale in (primarily) Dallas County, Texas, became in August 2011 the first municipality in Texas to ban the use of city water for fracing.[300]

With only two Texas opinions released considering a taking related to groundwater use—and that not for oil and gas development—little guiding jurisprudence yet exists in Texas for a groundwater owner who seeks taking compensation for regulations like that found in Grand Prairie. For those hoping to find analogous case law in oil and gas jurisprudence, there is also a legal lacuna of cases in Texas that rule that a statute or regulation that prevents—or *effectively* prevents—hydrocarbon development establishes a claim for a compensable regulatory taking.

Like a federal claimant, a property owner facing regulations that deny him the beneficial use of *all* his property faces a less difficult path in Texas, but to go down the relatively easy path of *Lucas* requires that a landowner establish that the statute and/or rule in question nullifies the value of the property.[301] With the advent of *Day*, the owner of land now has title to the groundwater in that land, just as the owner of oil and gas in Texas has title

---

[297] *See* Harris v. Currie, 176 S.W.2d 302, 305 (Tex. 1943). These rights have been recognized for at least 150 years in Texas. *See* Cowan v. Hardeman, 26 Tex. 217, 222 (1862).

[298] *Harris*, 176 S.W.2d at 305.

[299] *See* Edwards Aquifer Auth. v. Day, 369 S.W.3d 814, 843 (Tex. 2012); *Bragg*, 421 S.W.3d at 146.

[300] Mike Lee, *Parched Texans Impose Water-Use Limits for Fracking Gas Wells*, BLOOMBERG BUSINESSWEEK (Oct. 6, 2011), http://www.businessweek.com/news/2011-1006/parched-texans-impose-water-use-limits-for-fracking-gas-wells.html.

[301] *See* Mayhew v. Town of Sunnyvale, 964 S.W.2d 922, 936 (Tex. 1998).

in severalty to the unproduced hydrocarbons in place.[302] In Texas, development of that oil and gas is subject the police power of the state[303] as manifested by the regulations of the RRC.[304]

Lucas, and situations where it or the state case law equivalent are invoked, are generally more favorable to mineral owning taking claimants than situations where some economic use may remain.[305] Mineral owners generally fail in their claims when they fail to conclusively show either economic impact,[306] that the activity regulated may be curtailed through public or private nuisance law,[307] or that the mineral right still had some value.[308]

Another question touched upon in *Lucas* and that could greatly affect water-for-hydrocarbon-development taking claims is: what is the relevant piece of land when determining whether the landowner has been deprived of all beneficial use of his property right?[309] For example, if a landowner owns groundwater rights on two contiguous tracts and a permit for water use is denied for one, has that denial eliminated all beneficial use of the groundwater right for that tract, leading to a *Lucas* analysis, or is such a limitation considered only a partial taking, as groundwater use of the other tract was not obviated, and leading to a *Penn Central* analysis?

The *Lucas* Court provides little guidance in answering this question, but does helpfully acknowledge in a footnote that the right definition of a property right is a "difficult question."[310] The Court did provide that courts should not take into consideration all the tracts that a claimant owns when the tracts are noncontiguous and/or unrelated,[311] before theorizing somewhat vaguely that:

> [t]he answer to this difficult question may lie in how the owner's reasonable expectations have been shaped by the

---

[302] Elliff v. Texon Drilling, 210 S.W.2d 558, 561 (Tex. 1948).

[303] *Id.*

[304] *Oil & Gas*, RAILROAD COMMISSION OF TEXAS, http://www.rrc.state.tx.us/oil-gas/ (last visited Oct. 17, 2014).

[305] *See* Thompson, *supra* note 87, at 8-5.

[306] *See, e.g.*, Goldblatt v. Town of Hempstead, 369 U.S. 590, 595 (1962).

[307] *See* Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1022–23 (1992).

[308] *See, e.g.*, Keystone Bituminous Coal Ass'n v. DeBenedictis, 480 U.S. 470, 506 (1987) (upholding a Pennsylvania law requiring that an underground coal mine owner leave 50% of the coal in place even if surface owners have waived their rights to support).

[309] *See* 505 U.S. at 1016–17 n.7.

[310] *Id.*

[311] *See id.* at 1030–31.

> State's law of property—*i.e.*, whether and to what degree [that] [s]tate's law has accorded legal recognition and protection to the particular interest in land with respect to which the takings claimant alleges a diminution in (or elimination of) value.[312]

Since *Lucas*, state and lower federal courts have carried the ball on the question of determining the relevant piece of land to consider when determining whether the landowner has been deprived of all beneficial use of his or her property right. Contiguousness remains a primary tension, as was shown in *Loveladies Harbor, Inc. v. U.S.*, wherein the federal authorities argued that a claim by a landowner that a law preventing development on wetlands did not constitute a taking because the landowner had several noncontiguous tracts that were still available for development and because all the captioned tracts had originally been purchased as one large tract before subdivision.[313] The court of claims appears to have split the difference in its opinion.[314] First, focusing only on the location of the wetlands and not tract contiguousness, the court found a taking had occurred.[315] But then, since all the tracts had been acquired together as one original tract, the court considered the entire original tract when considering the value lost.[316] The court highlighted several considerations that should go into deciding the correct size of a tract to value, such as purchase history, proximity of the tracts and their contiguousness, whether or not the tracts have been considered a single unit in the past, and whether the restrictions actually raise the value of the unrestricted tracts.[317]

Ultimately, however, in the groundwater realm, and particularly for groundwater used for new oil and gas operations, denial of *all* possible economic use of a tract's groundwater will likely be very difficult to prove, particularly if the contemplated use is for a relatively new process such as hydraulic fracturing. Water may be used in many profitable enterprises

---

[312] *Id.* at 1016–17 n.7.

[313] *See* 15 Cl. Ct. 381, 391–92 (1988).

[314] *See id.* at 391–93.

[315] *See id.*

[316] *See id.* at 393. This can lower the potential compensation because if the entire original tract is considered and only a portion of the tract cannot be developed, that can lead a fact finder to determine that the loss is relatively small as large tracts are often not entirely developed anyway even without regulatory curtailment. On the other hand, if just the smaller tract is considered whereon no development is possible at all, then the tendency is to find more compensation is due because the owner can do nothing.

[317] *See id.* at 391.

outside of oil and gas operations.[318] Only when the best possible uses are interfered with to an unreasonable degree are compensable takings to be found.[319]

B. Unreasonable Interference with Use and Enjoyment

Instead of claims rooted in allegations that a regulation has removed all possible use of groundwater, it is much more likely in the groundwater taking realm to find claims that the regulation curtailing groundwater use is an unreasonable interference with the use and enjoyment of the captioned tract.[320] Under traditional land use/zoning regulatory takings law, in the absence of a total taking or a physical invasion, a federal court would apply the tri-partite *Penn Central* test to determine if there is a taking.[321] A court applying Texas law would apply basically the same analysis as that outlined in *Sheffield*.[322] In the context of groundwater, *Bragg* is the only modern taking case in Texas.[323] Such takings have, however, been considered in the oil and gas context.[324]

1. *City of Houston v. Maguire Oil Co.*

One such case was the two-decade litigation marathon of *City of Houston v. Maguire Oil Co.* ("*Maguire*").[325] On May 7, 1991, the City of Houston issued Maguire Oil a drilling permit for one well within the city limits proper.[326] On May 22, 1991, the City ratified a modified version of the permit.[327] On Aug. 5, 1991, the City extended the permit.[328] On Halloween later that year, however, the City delivered a trick in the form of a stop work order, shortly followed by a written declaration that the drilling permit had been revoked due to a 1967 City ordinance that prohibited

---

[318] *See* Edwards Aquifer Auth. v. Bragg, 421 S.W.3d 118, 124 (Tex. App.—San Antonio 2013, pet. filed).

[319] *See Loveladies*, 15 Cl. Ct. at 388.

[320] *See* City of Dall. v. Blanton, 200 S.W.3d 266, 272 (Tex. App.—Dallas 2006, no pet.).

[321] *See* Penn Cent. Transp. Co. v. City of New York, 438 U.S. 104, 124 (1978).

[322] *See* Sheffield Dev. Co. v. City of Glenn Heights, 140 S.W.3d 660, 672–73 (Tex. 2004).

[323] *See generally* 421 S.W.3d 118.

[324] *See generally* City of Hous. v. Maguire Oil Co., 342 S.W.3d 726 (Tex. App.—Houston [14th Dist.] 2011, pet. denied).

[325] *See generally id.*

[326] *Id.* at 729.

[327] *Id.*

[328] *Id.*

drilling in the City's extraterritorial jurisdiction and within 1,000 feet of Lake Houston.[329]

Relying on the May permit, Maguire Oil had spent at least $250,000 by Oct. 31, 1991 preparing the drilling site for operations.[330] After mediation attempts by Maguire failed,[331] the company filed suit, both seeking to recover its sunk costs and arguing that the City's prevention of its drilling was a regulatory taking effectively depriving it of all economically viable use of its mineral property.[332] The company sought recompense measured at the alleged value of the oil and gas in place.[333] The City riposted, arguing that Maguire Oil's action was blocked by the 10-year statute of limitations and that the company had produced no evidence to substantiate its damages.[334]

A procedural dogfight ensued. First, the City removed the case to the U.S. District Court.[335] The trial court held in favor of the City, granting its motion for summary judgment on all claims.[336] The federal court, however, then determined that it did not have jurisdiction after all and sent the case back to a Harris County district court.[337] In 2002, the state district court in Harris County held for the City, and Maguire appealed.[338] The court of appeals both affirmed and remanded, rejecting the city's argument that Maguire's claim was barred by the statute of limitations on the grounds that Maguire's lease was in the city limits of Houston and not in the its halo of extraterritorial jurisdiction.[339] Maguire then reasserted its inverse

---

[329] *Id*. at 730. A city's zone of extraterritorial jurisdiction was established by the State to allow cities to "designate certain areas as the extraterritorial jurisdiction of municipalities to promote and protect the general health, safety, and welfare of persons residing in and adjacent to the municipalities." TEX. LOC. GOV'T CODE ANN. § 42.001 (West 2008).

[330] *Maguire*, 342 S.W.3d at 729.

[331] Alex Mills, *Drawn-out Houston Drilling Case Judged in Oil Company's Favor*, TIMES RECORD NEWS (Nov. 18, 2012), http://www.timesrecordnews.com/news/2012/nov/18/drawn-out-houston-drilling-case-judged-in-oil/?print=1.

[332] *Maguire*, 342 S.W.3d at 730–31.

[333] *Id.* at 731.

[334] *Id.*

[335] *Id.*

[336] *Id.*

[337] *Id.*

[338] *Id.*

[339] *Id.* The Extraterritorial Jurisdiction halo—often referred to by practitioners as the "ETJ"—is the area outside of a municipality that restricts the area that the municipality may annex and may impose various police power regulations, including zoning and planning regulations, in that area.

condemnation claim in the district county.[340] The court then dismissed the claim on Nov. 29, 2005, but the 14th District Court of Appeals reversed and remanded.[341] The City appealed up to the Texas Supreme Court, but its appeal was denied.[342]

When a jury finally considered the question of a regulatory takings and damages on March 16, 2009, Maguire was found to have suffered a regulatory taking and was awarded two million dollars.[343] The City appealed, but the court of appeals upheld the trial court's finding of a taking and the award, citing both the Fifth Amendment of the U.S. Constitution and the Texas Constitution.[344]

Maguire, however, may prove to be an outlier because of the nature of what constituted the taking. Maguire's finding of a compensable partial regulatory taking did not turn on the no-drilling ordinance *per se*—it was not the prohibition itself that caused the taking—but rather on the application of the ordinance to property interests not covered by the geographic coverage of the ordinance—on its face the ordinance did not geographically apply to the permitted Maguire wells.[345]

Maguire does offer an important precedent for the measure of damages in an oil and gas takings context. The court of appeals noted "the primacy of comparable sales evidence to determine market value of property taken. However . . . when comparable sales figures are lacking or the method is otherwise inadequate as a measure of fair market value, other methods of determining market value can be applied."[346] The developer in *Maguire* provided petroleum geology and engineering data estimating there was 47,304,000 mcf of recoverable natural gas under the captioned lease, with a potential value estimated to be at least $33,586,000.[347] The claimant's geoscience expert admitted, however, that "he had no opinion concerning the price a willing buyer would pay a willing seller for the gas. In fact, he expressed doubt that a willing buyer would pay $33,586,000 for the mineral prospect."[348] The court agreed that "evidence of comparable sales of mineral interests would provide a superior measure of market value, given

---

[340] *Id.* at 732.

[341] *Id.*

[342] *Id.* at 733.

[343] *Id.*

[344] *Id.* at 735.

[345] *See id.* at 738.

[346] Maguire Oil Co. v. City of Hous., 69 S.W.3d 350, 363 (Tex. App.—Texarkana 2002, pet. denied) (citation omitted).

[347] *Id.* at 361.

[348] *Id.*

that the existence of recoverable gas under Maguire's lease is as yet unproven."[349] In addition, in reversing the trial court's summary judgment in favor of the City, the court of appeals noted that if adequate comparable sales data could be produced, the party or parties obtaining same should possess the opportunity to present it at trial and the court must "admit it to the exclusion of any other valuation evidence."[350]

Would such analysis apply to groundwater? Obviously, permit denial such as the EAA imposed on the Braggs would not result in a physical invasion.[351] Since groundwater is typically owned by the surface owners, there is neither denial of all economic use (a "total taking") since the entire property interest—groundwater and all the other uses—would be considered under the majority view of the regulatory takings analysis.[352]

2. *City of Houston v. Trail Enterprises, Inc.*

Another such case was presented recently when the Texas Fourteenth Court of Appeals handed down its opinion in *City of Houston v. Trail Enterprises, Inc.*, delivered on August 9, 2012, potentially deciding a long-standing dispute between mineral interest owners and the City of Houston regarding the City's alleged inverse condemnation of the fee mineral interests in and around the Lake Houston watershed.[353] Specifically, the owners' 2003 suit against Houston claimed that restrictions on oil and gas drilling dating from 1995 amendments to an ordinance dating originally from 1967 constituted a compensable taking of their property rights under the Texas State Constitution.[354]

In 2005, the court, in a bench trial, found in favor of the mineral owners, with a subsequently convened jury calculating damages at $19,046,700, being the diminution of value of the mineral property before and after application of the drilling restrictions.[355] The City appealed, challenging the verdict on ripeness grounds in that the mineral owners had not exhausted their administrative remedies because they had not filed a formal application for new drilling permits during a period in 1997 when the

---

[349] *Id.* at 364.

[350] *Id.*

[351] *See* Edwards Aquifer Auth. v. Bragg, 421 S.W.3d 118, 126 (Tex. App.—San Antonio 2013, pet. filed).

[352] *See* Palazzolo v. Rhode Island, 533 U.S. 606, 617 (2001).

[353] *See generally* 377 S.W.3d 873 (Tex. App.—Houston [14th Dist.] 2012, pet. denied).

[354] *Id.* at 876.

[355] *Id.* at 877.

drilling ban was temporarily abated.[356] After the Texas Supreme Court found that the claim was ripe,[357] the court again found that a compensable taking had occurred.[358] This time, the trial court entered a judgment for the mineral owners of $17,000,000 and awarded the City the oil and gas not recoverable from the wells that already existed on the field.[359] Both parties appealed, with the City challenging the takings and the mineral owners appealing the transfer of the mineral interests to Houston.[360]

Considering only Houston's argument that the claimants had not established that a taking had occurred as dispositive and therefore only considering that claim in its opinion, the court of appeals reversed.[361] Relying on *Sheffield Development Company*,[362] which, as seen above, largely incorporated the analysis of the U.S. Supreme Court in *Penn Central*,[363] the court considered the same three factors described in those cases—and in *Bragg*—for balancing of the public's interest vis-à-vis the real property owner's private interest.[364]

The court first found that, since the stated purpose of the drilling ban was to protect the drinking water of Houston—an important goal that could be compromised by drilling near the source of Lake Houston—the first factor leaned heavily in favor of the city.[365] The court next found that, since the landowners had largely failed to prove any investment-back expectations of profit from their estate because they could point to no investments that they made or put at risk to develop the property, the second factor also leaned heavily in favor of the City.[366] Finally, the court considered the economic impact of the regulation on the mineral owners, considering especially the diminution of value of the mineral estate.[367] While the court found significant loss of value to the mineral estate, this loss was partially ameliorated by the facts that some wells were producing from the restricted estate already and that the restriction did not deny all economically beneficial use of the property as the regulations did not

---

[356] *See id.*

[357] City of Hous. v. Trail Enters., Inc., 300 S.W.3d 736, 737 (Tex. 2009).

[358] *Trail Enters., Inc.*, 377 S.W.3d at 877.

[359] *Id.*

[360] *Id.*

[361] *Id.* at 877, 885.

[362] *See generally* Sheffield Dev. Co. v. City of Glenn Heights, 140 S.W.3d 660 (Tex. 2004).

[363] *See generally* Penn Cent. Transp. Co. v. City of New York, 438 U.S. 104 (1978).

[364] *Trail Enters., Inc*., 377 S.W.3d at 879.

[365] *Id.* at 879–80.

[366] *Id.* at 883.

[367] *Id.*

prevent drilling of new wells on 70-75% of the total mineral property of the mineral owners.[368]

Considering the three *Penn Central/Sheffield* factors *in toto*, the court ultimately found that while the anti-drilling regulations did significantly affect the value of the mineral estate of the landowners, the combination of the other two factors outweighed the first, and ruled that the landowners should take nothing.[369]

VIII. PREDICTIONS ON FUTURE "UNREASONABLE INTERFERENCE" GROUNDWATER JURISPRUDENCE

A. Balancing of the Factors

Penn Central begat *Sheffield* that begat the Texas analysis that steered *Trail Enterprises* in the oil and gas context and *Bragg* in the groundwater context.[370] The analysis under this jurisprudence looks at three factors, sometimes called prongs, with the party carrying the majority of factors being the winner.[371] *Trail Enterprise* and *Bragg* suggest a pattern, however, with the "government interest" prong being more easily claimed by the regulatory agency and the "economic impact" prong being more easily won by the claimant.[372] The tiebreaker is the "reasonable investment-backed expectation" prong.[373]

1. Legitimate Government Interest

Regarding the judicial scrutiny of the "government interest" prong and the government's regulatory means to a desired end, "rational basis" review is the most lenient form of judicial review for questions of equal protection and due process.[374] Rational basis analysis is far less rigorous, for example,

---

[368] *Id.* at 883–84.

[369] *Id.* 884–85.

[370] *See* Penn Cent. Transp. Co. v. City of New York, 438 U.S. 104, 124 (1978); Sheffield Dev. Co. v. City of Glenn Heights, 140 S.W.3d 660, 672–73 (Tex. 2004); *Trail Enters., Inc*., 377 S.W.3d at 879; Edwards Aquifer Auth. v. Bragg, 421 S.W.3d 118, 138–39 (Tex. App.—San Antonio 2013, pet. filed).

[371] *See Penn*, 438 U.S. at 124; *Sheffield*, 140 S.W.3d at 672–73; *Trail Enters., Inc*., 377 S.W.3d at 879; *Bragg*, 421 S.W.3d at 138–39.

[372] *See Trail Enters., Inc*., 377 S.W.3d at 880; *Bragg*, 421 S.W.3d at 141.

[373] *See Bragg*, 421 S.W.3d at 142–44.

[374] *See* Neelum J. Wadhwani, *Rational Reviews, Irrational Results*, 84 TEX. L. REV. 801, 805–06 (2006) (indicating that rational basis review is typically utilized in cases where no fundamental rights or suspect classifications are at issue).

than that found in cases requiring strict scrutiny or intermediate scrutiny, and so this analysis generally is decided favorably for the regulating agency as courts have set the bar low for government actors to show the challenged law is rationally related to a legitimate government interest.[375] For takings cases, however, the U.S. Supreme Court has worded the government interest prong so that a taking has occurred if the regulation at hand does not "substantially advance legitimate state interests."[376] Thus, as the Court has opined, analysis of a state's interest in making a regulation is different—and the scrutiny level is a little higher—in the takings realm than in due process or equal protection claims.[377] Still, despite the slightly higher level of scrutiny afforded state action in takings cases, if the regulation at issue is a reasonably-worded rule purported to be in the interest of public health, safety, and the environment—as most regulations affecting groundwater can easily be argued to be—the regulator will prevail as to the "government's interest" prong more often than not.[378]

Indeed, with the exception of the U.S. Supreme Court in *Nollan*, federal and state courts have been hesitant to increase the level of scrutiny they afford to the underlying legislative motivations for land use regulations.[379] While a couple of decisions have appeared in lower courts that invalidate a land use regulation that is ruled to have no close connection or substantial relationship between the purported goals of the statute and the curtailed use by the property owner,[380] few cases have followed the Court's distinguishing comments in *Nollan* regarding heightened scrutiny for takings cases.[381] In fact, courts strongly favor regulations on mineral (including oil and gas) development designed to protect health, safety, tax bases, land values, and even historical preservation.[382]

In both *Trail Enterprises* and *Bragg*, the opinions quickly found the regulation of oil and gas production near public sources of water and the

---

[375] *See id.*

[376] Nollan v. Cal. Coastal Comm'n, 483 U.S. 825, 834 (1987).

[377] *Id*. n.3. ("We have required that the regulation 'substantially advance' the 'legitimate state interest' sought to be achieved, not that 'the State '*could rationally have decided*' that the measure adopted might achieve the State's objective.'").

[378] *See id.*

[379] Thompson, *supra* note 87, at 8-14.

[380] *See, e.g.*, Surfside Colony, Ltd. v. Cal. Coastal Comm'n, 277 Cal. Rptr. 371, 373 (Cal. Ct. App. 1991) (holding that state authorities cannot mandate public access to a beach as a condition for granting permission to construct a seawall).

[381] 483 U.S. at 834 n.3. This may have been read narrowly by other courts, perhaps due to the questionable procedural maneuvering by the regulating entity in the case.

[382] Thompson, *supra* note 87, at 8-18.

permitting schemes that may quantitatively curtail or even block the use of groundwater, respectively, to both be easily within the scope of legitimate areas for government regulation.[383]

2. Economic Impact of the Regulation

The third prong discussed in *Trail Enterprises* requires examination of the economic impact of the regulation on the claimant.[384] Here, although the claimed loss may be attenuated by evidence of other profit possibilities, such as other minable minerals if development of one mineral is partially occluded by regulation, or pre-existing profit centers such as productive wells grandfathered before the regulation, the claimant can still often be found to have suffered a significant economic impact, as in *Trail Enterprises*.[385] The finding of a significant economic impact in *Bragg*, where the cost of irrigation of the pecan orchards allegedly went up only 10%, helps illustrate that total occlusion of the best economic use is not necessary for a groundwater owner to prevail on the "economic impact" prong.[386]

Partial regulatory takings cases, however, also turn on whether the claimant can make a profit from other activities in the captioned land.[387] Simple commercial differences exist between water and hydrocarbons.[388] Water, known by chemists as the "universal solvent,"[389] may be both more easily produced and stored.[390] Potable or livestock grade groundwater is found in a much different environment than almost all commercial-grade hydrocarbons, existing in aquifers generally found within a couple of hundred feet of the surface.[391] Commercial hydrocarbons, in contrast, are

---

[383] *See* City of Hous. v. Trail Enters., Inc., 377 S.W.3d 873, 880 (Tex. App.—Houston [14th Dist.] 2012, pet denied); Edwards Aquifer Auth. v. Bragg, 421 S.W.3d 118, 145 (Tex. App.—San Antonio 2013, pet. filed).

[384] 377 S.W.3d at 883.

[385] *See id.*

[386] *See* 421 S.W.3d at 141.

[387] *See id.* at 140.

[388] *See* Edwards Aquifer Auth. v. Day, 369 S.W.3d 814, 831 (Tex. 2012).

[389] Anne Marie Helmenstine, *Why Is Water the Universal Solvent?*, ABOUT.COM, http://chemistry.about.com/od/waterchemistry/f/Why-Is-Water-The-Universal-Solvent.htm (last visited Oct. 18, 2014).

[390] *See* Bruce Lesikar et al., *Questions about Groundwater Conservation Districts in Texas*, TEXAS WATER RESOURCES INSTITUTE 5 (2002), http://twri.tamu.edu/reports/2002/2002036/2002-036_questions-dist.pdf.

[391] *Groundwater and Aquifers*, FRACFOCUS.ORG, http://fracfocus.org/water-protection/groundwater-aquifers (last visited Oct. 18, 2014).

typically found thousands of feet below ground.[392] Therefore, potable groundwater aquifers are much more easily tapped than most hydrocarbon deposits.[393] Water is not flammable or poisonous and requires none of the often elaborate processing methods needed for hydrocarbons.[394]

Although *Bragg* suggests that the "best possible use" is the benchmark for groundwater takings cases in Texas, and that any possible use other than that so decreed as the "best possible use" that may happen to use less water—say, for example, grazing instead of irrigation farming—would not count as another use that might eliminate the necessity of compensation, more general takings jurisprudence suggests that the ability to use the tract for another use could eliminate the necessity of compensation.[395] In addition, a use other than the "best possible use" would presumably be of lesser value to the landowner, otherwise the landowner would be doing it already, but this may not always be so.

Given that the category of parties that can develop and use groundwater is so much broader than those that can develop and use hydrocarbons, combined with the fact that groundwater has so many more uses than hydrocarbons, regulations that curtail or prevent groundwater use for oil and gas operations still allow the groundwater to be used for other purposes.[396] It follows that courts not following *Bragg* and the "best possible use" may rule these other uses may alleviate the economic impact on the groundwater owner, hindering a takings recovery even if the most lucrative use of the groundwater is to sell it for use in oil and gas operations.

Texas regulation does not, in general, favor transfer of surface water,[397] and regulation of groundwater that is removed from an aquifer or GCD jurisdiction has increased.[398] Groundwater drawn from oil and gas exempted wells and then transported outside the district is subject to

---

[392] *Hydraulic Fracturing: The Process*, FRACFOCUS.ORG, http://fracfocus.org/hydraulic-fracturing-how-it-works/hydraulic-fracturing-process (last visited Oct. 18, 2014).

[393] *See Groundwater and Aquifers*, *supra* note 391; *Hydraulic Fracturing: The Process*, *supra* note 392.

[394] *See* Len Fisher, *If Water Contains Hydrogen, Which is Flammable, Why Doesn't It Burn?*, SCIENCEFOCUS.COM (July 22, 2009), http://sciencefocus.com/qa/if-water-contains-hydrogen-which-flammable-why-doesnt-it-burn.

[395] *See* Agins v. City of Tiburon, 447 U.S. 255, 260 (1980) (holding that land use regulation can effect a taking if it "does not substantially advance legitimate state interests, or denies an owner economically viable use of his land.") (citations omitted).

[396] *See id.*

[397] Mary Sahs, *Water Law*, 76 TEX. B.J. 733, 736 (2013).

[398] *See* Lesikar, *supra* note 390, at 11.

applicable production and export fees.[399] In addition, exempted wells still require registration with the appropriate GCD, and like non-exempt wells must be maintained, both to prevent the migration communication of groundwater from an aquifer to a non-aquifer as well as to generally prevent groundwater contamination.[400] GCDs often track new well permits issued by the RRC in their jurisdictions and are aware that water wells used initially for frac water are often turned over to other parties after fracing ceases.[401] These new well owners may then use the groundwater for purposes clearly not exempted from GCD permitting requirements, hence the GCDs' interest in gathering information regarding such wells, through either permits or required forms.[402]

3. Investment-Backed Expectations

Since the nature of the first and third *Trail Enterprise* prongs discussed above are such that they will often be split among the litigants one-to-one, a tiebreaker will often be needed.[403] This leaves the second prong discussed in *Trail Enterprises*, the "reasonable investment-backed expectations" of the mineral owning claimant prong.[404] Namely, did the parties claiming compensation believe that, given the state of regulation at the time of purchase, investments could be made (or actually were made) in the property with the reasonable expectation that new development could go forward?[405] This limitation was established to prevent a party entitling itself to a windfall compensation by procuring a mineral interest in a property where extraction of the minerals was prohibited before the purchase.[406]

Here, in the context of oil and gas development, the identity of the mineral claimant—depending on whether it is an energy company or a party

---

[399] TEX. WATER CODE ANN. § 36.117(k) (West 2008 & Supp. 2014).

[400] *Id.* § 36.117(h)(1)–(2).

[401] Telephone Interview with Jim Conkwright, Director, High Plains Underground Water Conservation District No. 1, Lubbock, Texas (Dec. 5, 2012).

[402] *Id*.

[403] *See* 377 S.W.3d 873, 880, 884 (Tex. App.—Houston [14th Dist.] 2012, pet denied).

[404] *See id.* at 883.

[405] *See id.*

[406] *Id.* at 882 ("The purpose of consideration of plaintiffs' investment-backed expectations . . . is to limit recoveries to property owners who can demonstrate that they bought their property in reliance on a state of affairs that did not include the challenged regulatory regime.") (internal quotation marks omitted); Sheffield Dev. Co., Inc. v. City of Glenn Heights, 140 S.W.3d 660, 677 n.88 (Tex. 2004) (quoting Mayhew v. Town of Sunnyvale, 964 S.W.2d 922, 937 (Tex. 1998)). Such a purchase would likely be made at a nominal sum as the seller may not believe that mineral development can take place and therefore the minerals are valueless.

unable to develop the minerals that acquired and owned the property independent of a specific profit motive in mineral development—can make a significant difference.[407] Put more simply, energy companies can much more easily argue that they had an initial and continuing interest in profiting from mineral development (as well as the ability to self-develop those same minerals) than a farmer who does not know where or how to drill and who did not purchase the land with the initial intention to develop minerals.[408] Energy companies would therefore seem to be at an advantage when considering the investment-backed expectation prong in cases like *Trail Enterprises* when considering hydrocarbon development.

Assuming that the above prediction holds, it follows that in regulatory takings cases involving water, Texas and other courts may attempt to apply the takings analysis found in oil and gas cases to groundwater development where the water would be used for oil and gas development. After all, the Texas Supreme Court looked to oil and gas jurisprudence in *Day*.[409] Stark differences exist, however, in the uses of water when compared to oil and gas and the differing methodologies of their development.[410] With that in mind, a closer examination of the application of the reasonable investment-backed expectation prong in *Trail Enterprise* and *Bragg* is warranted.

In *Trail Enterprises*, the City of Houston alleged no evidence existed that the landowners made any investment in the property with the expectation that new oil or gas wells would be drilled.[411] To support this premise, the City investigated and presented evidence of how each landowner came to own its mineral interest, highlighting that only one landowner had received part of his interest during the period before the regulations preventing development were in place.[412] The evidence presented by the City further showed that most landowners had "never expended any money on drilling or potential drilling activities."[413] While this may be true, however, the value of minerals is capitalized and paid for by landowners who acquire the property right after the value of the minerals is made apparent, so post-"value discovery" landowners are paying for the minerals when they purchase the property—the seller would raise the price

---

[407] *See Trail Enters., Inc.*, 377 S.W.3d at 880-83.

[408] *See id.*

[409] Edwards Aquifer Auth. v. Day, 369 S.W.3d 814, 831 (Tex. 2012).

[410] *See id.*

[411] 377 S.W.3d at 881.

[412] *Id.*

[413] *Id.*

accordingly.[414]

The City of Houston cited *Mayhew v. Town of Sunnyvale*, wherein the Texas Supreme Court held that a regulation existing at the time a property interest is acquired must be considered when deciding whether the property owner ever had a reasonable investment-backed expectation of profit from mineral development. [415] The City argued that the landowners had never shown any investment-backed anticipation of drilling.[416]

The landowners reposted *Mayhew* with the well-known federal case *Palazzolo v. Rhode Island*, wherein the U.S. Supreme Court ruled that a takings regulation claim is not barred just because the captioned property was purchased or inherited after the regulation was in effect.[417] Using *Palazzolo* as authority, the landowners argued that receiving the interest after the curtailing regulation had taken effect "should not preclude consideration of evidence of their reasonable investment-backed expectations."[418]

In their analysis, the court of appeals first largely brushed off the use of *Palazzolo*, believing instead that while *Palazzolo* allowed that takings claims could be considered if the claimants got the captioned property after the curtailing regulation became effective, it did not provide that courts can never consider development-curtailing regulations in effect at the time of the conveyance.[419] The court expressed a policy concern that disallowing consideration of when a regulation was enacted relative to the conveyance to the claimant could then mean that a party could purchase, perhaps for a nominal fee, a mineral interest with the express purpose of seeking compensation for not being able to develop that mineral interest which, in fact, it never really intended to develop at all.[420] Then the court made its definitive statement of the purpose of the requirement and whom it covers:

> [T]he purpose of the investment-backed expectation requirement is to assess whether the landowner ha[d] taken legitimate risks with the reasonable expectation of being able to use the property, which, in fairness and justice,

---

[414] See Edwards Aquifer Auth. v. Bragg, 421 S.W.3d 118, 143 (Tex. App.—San Antonio 2013, pet. filed).

[415] 964 S.W.2d 922, 937 (Tex. 1998).

[416] *Id.* at 936.

[417] 533 U.S. 606, 632 (2001).

[418] *Trail Enters., Inc.*, 377 S.W.3d at 881.

[419] *Id.* at 882.

[420] *Id.*

> would entitled him or her to compensation. This is true *regardless of the nature of the property interest owned*.[421]

Applying the above rule, the court found that since the property owners had "failed to demonstrate that investments were made (*i.e.*, put at risk) in the property with the reasonable expectation that new wells could be drilled, concepts of fairness and justice do not militate in favor of compensation."[422] Since almost all the "investment" (*i.e.*, purchases and inheritances) took place after imposition of the anti-drilling laws, the court relied on *Sheffield*, *Mayhew*, and similar cases to find the investment expectation prong lay with the City of Houston, cinching for it victory in the case.[423]

Notice should also be given to the words chosen by the court that lurk at the end of the quote from *Trail Enterprises*, ". . .regardless of the nature of the property interest owned."[424] The investment-backed expectation prong therefore applies to all types of underground wealth, be it hydrocarbons, groundwater, or kryptonite.[425] *Bragg* demonstrates this, with the court closely analyzing the investment in the orchards and the professional history of the Braggs and, upon finding a long record of investment and pecan-producing prowess, awarding the prong to them.[426] Again, however, the value of minerals is capitalized and paid for by landowners who acquire the property after the value of the minerals is made apparent.[427] The court does not address why this expected value could not be discounted, measured, and considered as an investment-based expectation.[428]

While *Bragg* suggests that groundwater owners who can point to an existing and longstanding activity supported by their groundwater will be successful in seeking a measure of compensation, particularly if that activity has been deemed the best economic use of the groundwater/land,[429] landowners who cannot do so face a more difficult battle. This scrutiny into the material investment and professional history of groundwater owners is especially worrisome for owners who want to use or sell groundwater for use with new oil and gas operations. Such new operations will not have the historical use record that long-lasting agricultural practices such as the

---

[421] *Id*. at 883 (emphasis added) (citations omitted).

[422] *Id.*

[423] *Id.*

[424] *Id.*

[425] *See id.*

[426] 421 S.W.3d 118, 143–44 (Tex. App.—San Antonio 2013, pet. filed).

[427] *See id.* at 143.

[428] *See id.* at 143–44.

[429] *See id.* at 143.

Braggs' pecan operations had. Moreover, with the exception of hydrocarbons that may be used to power leasehold operations or that may be provided to the surface owners' (usually residential or agricultural) use, oil and natural gas are developed strictly for profit by professional corporations.[430] Both usually require extensive processing and subsequent transportation to markets and then to distributors.[431] Both are often found thousands and thousands of feet beneath the surface and can be developed only with the use of sophisticated and expensive exploration, drilling, and production equipment.[432]

Simply put, almost any landowning party can develop its water assets to at least some extent, while only sophisticated companies with expensive equipment can find, develop, transport, and refine petroleum. The modern oil and gas business is not for typical homeowners or farmers but rather is the province of experienced professionals backed with highly technological logistics.[433] Owners of the groundwater, unless they are energy companies themselves, will likely possess neither experience in oil and gas operations, nor—given the long-held belief that Texas shale formations such as the Cline, Eagle Ford, and the Barnett were not productive—any long-held belief that the strata comprising their mineral estate held marketable hydrocarbons. Deriving a provable expectation of profit of record in such circumstance would seem to be difficult.

Most importantly, water has all manner of uses.[434] Oil and gas are developed to be sold for profit. Groundwater itself is sometimes sold for profit, certainly, but if not used for residential purposes, it can more often be used to facilitate profit from other activities such as agriculture and livestock, or oil and gas development.[435] The prospect for whether these possible uses—or even just future plans for such uses—count as an "investment-back expectation" appears dim.

This universality of water use, the relative ease wherein it may be produced, and the ready-to-use nature of potable water—all in contrast to oil and gas—show that *any* landowner now owning the recognized right to groundwater in place is much more capable of both producing it and using

---

[430] *See Oilfield Development*, PETROLEUM ONLINE, http://www.petroleumonline.com/content/overview.asp?mod=5 (last visited Oct. 18, 2014).

[431] *See id.*

[432] *See Hydraulic Fracturing: The Process*, *supra* note 392.

[433] This is not to say that purchasers of mineral rights covering known oil and gas prospects are not paying value for those minerals and do not have an investment-based expectation based on the discounted price paid for those minerals over a purchase of just the surface estate.

[434] *See* Lesikar, *supra* note 390, at 2-3.

[435] *See id.*

it for a variety of profitable enterprises.[436] Hence, the "tiebreaker" prong of the partial regulatory takings analysis used in *Trail Enterprise* and *Bragg*—the investment-backed expectation of the mineral owning claimant—looks in most instances to favor regulators interested in curtailing or preventing groundwater use for oil and gas operations.[437] Since this prong is potentially the "tiebreaker," a shift towards one party when considering this prong can tilt the entire takings analysis towards that party.[438]

The analysis applied in *Trail Enterprises*, if affirmed by the Texas Supreme Court, will be an important touchstone and clearly suggests that as long as a municipal ordinance is couched in terms of public health and/or safety concerns and not anti-mineral development rhetoric, it will not incur an actionable takings. How this case will play out with regards to permitting schemes that curtail water use and other regulations that may deny the use of water at the level desired by the landowner is less clear.

IX. GROUNDWATER DISTRICTS GROUNDED?

Water is necessary for mineral development.[439] Water is used in drilling and completion operations, and a large amount of water is used in enhanced recovery operations like fracing.[440] For example, with today's technology, a typical fracing operation in the Marcellus Shale requires between one to five million gallons of fracing fluid, mostly water, per well, according to most estimates, equivalent to about 15 acre-feet per well,[441] and four to five million gallons of water for every well in the Eagle Ford in Texas.[442] While this number is dropping with the development of new fracing technology

---

[436] *See Groundwater and Aquifers*, *supra* note 391; *Hydraulic Fracturing: The Process*, *supra* note 392.

[437] *See* City of Hous. v. Trail Enters., Inc., 377 S.W.3d 873, 880–83 (Tex. App.—Houston [14th Dist.] 2012, pet. denied); Edwards Aquifer Auth. v. Bragg, 421 S.W.3d 118, 142–44 (Tex. App.—San Antonio 2013, pet. filed).

[438] *See Trail Enters, Inc.*, 377 S.W.3d at 880–83; *Bragg*, 421 S.W.3d at 142–44.

[439] *See Water Use in Association with Oil and Gas Activities*, *supra* note 5.

[440] *See id.*

[441] Michele Rodgers, et al., *Marcellus Shale: What Local Governments Need to Know*, PENN STATE COLLEGE OF AGRICULTURAL SCIENCES 5 (2009), http://pubs.cas.psu.edu/FreePubs/pdfs/ua454.pdf.

[442] John Kemp, *Don't Mess with Texas Water, Frackers Warned*, REUTERS (May 1, 2013), http://www.reuters.com/article/2013/05/01/us-column-kemp-texas-fracking-idUSBRE9400HB20130501.

that utilizes CO_2 or guar-based gels instead of water,[443] water will remain a large constituent of any drilling or fracing operation for the foreseeable future.[444] In dry parts of Texas, concern exists about the use of groundwater for oil and gas operations.[445] This concern has led some to question whether state agencies, local government, and GCDs should more thoroughly regulate, curtail, or even prevent the use of groundwater for oil and gas operations.[446]

GCDs have responded by more closely examining groundwater use for oil and gas operations in their districts. This closer examination is now possible because, while the Texas water code exempts hydrocarbon exploration and drilling activities from most GCD permitting requirements,[447] "exploration" or "drilling" activities and "fracing" enhanced recovery operations are being contrasted from one another by GCDs so that fracing activities are being excluded from the general permit exception for groundwater used in drilling and exploration—an "exception to the exception."[448] Specifically, while GCDs must except from any permitting requirement a "water well used solely to supply water for a rig that is actively *engaged in drilling or exploration operations* for an oil or gas well permitted by the [RRC]," the GDCs are not including water wells used to provide water for *hydraulic fracturing* in this exception.[449] This exception had, until mid-2011, prevented permitting requirements by GCDs from coverage of water wells intended to provide water for oil and gas operations, including fracing.[450]

The 2011-12 drought and the dramatic increase in fracing operations

---

[443] Terrence Henry, *Water Use in Fracking Draws Legislature's Attention*, STATEIMPACT (Feb. 14, 2013), http://stateimpact.npr.org/texas/2013/02/14/water-use-in-fracking-draws-legislatures-attention/.

[444] *See Water Use in Association with Oil and Gas Activities*, *supra* note 5.

[445] *See* Kemp, *supra* note 442.

[446] *Id*.

[447] TEX. WATER CODE ANN. § 36.117(b)(2) (West 2008 & Supp. 2014) (The oil and gas exception to local groundwater conservancy district control covers "the drilling of a water well used solely to supply water for a rig that is actively engaged in *drilling or exploration operations* for an oil or gas well permitted by the Railroad Commission of Texas provided that the person holding the permit is responsible for drilling and operating the water well and the well is located on the same lease or field associated with the drilling rig . . . ") (emphasis added).

[448] Telephone Interview with Jim Conkwright, Director, High Plains Underground Water Conservation District No. 1, Lubbock, Texas (Nov. 8, 2011).

[449] WATER § 36.117(b)(2)(emphasis added).

[450] Telephone Interview with Jim Conkwright, Director, High Plains Underground Water Conservation District No. 1, Lubbock, Texas (Dec. 5, 2012).

statewide sparked this change in the interpretation of the statute.[451] GCDs and cities are now requiring permits (or completion of a questionnaire) for water wells used to supply water for fracing operations because fracing is seen as a separate and different activity than "drilling or exploration operations."[452] Section 36.117(d)(2) of the Water Code provides support for this interpretation by removing the permitting exemption if *any* water from an exempted water well is *not used* for oil and gas drilling or exploration.[453]

Examples abound statewide of municipalities and GCDs taking up permitting and curtailment of groundwater use for fracing. For example, the Evergreen Underground Water Conservation District, which directs aquifer use for Atascosa, Frio, Karnes, and Wilson Counties in South Texas, expressly applied its preexisting water use limits to fracing in 2008.[454] After drought struck in late 2010, conservancy authorities for the southern end of the Ogallala Aquifer, which partially overlaps the Permian Basin near Midland/Odessa, approved that district's first-ever restrictions on water use for fracing in July 2011.[455] In 2012, the High Plains Underground Water Conservation District No. 1, centered on Lubbock and covering an area bigger than New Hampshire, passed new water use restrictions that do not exempt fracing operations.[456] Other GCDs are considering similar actions in the future.

Day will impact future oil and gas operations that require permitting to drill water wells for drilling and recovery projects. One commentator has noted that since the analysis required for the *Penn Central* test is a fact-intensive balancing of factors specific to each case, such litigation will often require extensive expert witness analysis and testimony, discovery, and extensive trial preparation.[457] Therefore, when GCDs are determining whether or not to withhold a permit, they will have to be mindful of whether a "taking" has occurred and, if so, what compensation may be required.[458] The threat of litigation may make them reluctant to deny permits in similar situations in the future to avoid litigation and possible

---

[451] Telephone Interview with Brian Sledge, Attorney, Government Relations Practice Group Chairman, Lloyd Gosselink Rochelle & Townsend, P.C., Austin, Texas (Nov. 8, 2011).

[452] *Id.*

[453] WATER § 36.117(d)(2).

[454] Kemp, *supra* note 442.

[455] Lee, *supra* note 300.

[456] Telephone Interview with Jim Conkwright, Director, High Plains Underground Water Conservation District No. 1, Lubbock, Texas (Dec. 5, 2012).

[457] *See* Jeff Civins, *Ground(water)-Breaking Decision*, LAW360, http://www.law360.com/articles/315752/print?section=appellate (subscription required).

[458] *See id.*

subsequent "takings" liability.

Worry among mineral owners who do not possess the ability to self-develop or who have not leased and who may feel they cannot prevail in a partial regulatory takings action utilizing the takings jurisprudence started with *Bragg* may be misplaced. This author predicts that, given the cost of litigating a partial regulatory takings involving groundwater, GCDs—particularly smaller or cash-strapped GCDs—may think twice about fighting such battles.[459] The court in *Day* acknowledged that its holding—that land ownership includes an interest in groundwater in place and not merely a right to extract it—could open the floodgates of litigation, but stated that groundwater regulation need not result in takings liability.[460] While the *Day* opinion contrasts the EAA's requirements governing the allocation of groundwater with those requirements under Texas Water Code that apply statewide, the court plainly does not propose that any curtailment of groundwater use made under the EAA must result in a compensable taking.[461] This may be so, but the *Sheffield/Penn Central* test referenced by the court and utilized in *Bragg* is necessarily rather equivocal and its application potentially very expensive due to the case-by-case, fact-intensive data inputs required for a reasoned decision.[462] When each permit on groundwater use promulgated by a water conservation district that curtails the requested amount now comes freighted with the potential to turn into a litigious money-disposal exercise, GCDs will now have to more carefully mull if their permit constitutes a regulatory taking, and if so, to what extent.

One commentator predicts a grim outcome for the districts: "The net effect on groundwater conservation districts, most of which are not well funded and are unable to bear the costs of litigation, will be to severely chill their ability to manage groundwater because of the liabilities they may incur in issuing permits."[463]

If groundwater districts like the Edwards Aquifer Authority are forced to litigate expensive takings claims, the money to fund this legal warfare will eventually have to come from the entities that provide financial support to the district. San Antonio gets most of its water from the Edwards

---

[459] *Id.*

[460] 369 S.W.3d 814, 843 (Tex. 2012).

[461] William Burford, Permian Basin Oil & Gas Law 2013, Live Oak CLE, Midland, Texas, February 22, 2013.

[462] *See generally* Edwards Aquifer Auth. v. Bragg, 421 S.W.3d 118 (Tex. App.—San Antonio 2013, pet. filed).

[463] Civins, *supra* note 457.

Aquifer.[464] Because the court held that the EAA violated Day's constitutional rights by only allowing it a permitted volume far below the amount requested, the City of San Antonio Water System and its customers are faced with the prospect that they will now underwrite via higher water rates the compensation for future takings claims cases.[465] Robert Puente, a former state legislator familiar with San Antonio water development and use, said:

> If the Supreme Court ruled there was a taking, I think the EAA would get inundated with lawsuits to protect the private interests that individuals think they have in the property underground, the water . . . We provide 55 percent of the funding for EAA, so we, in essence, would be funding the defense of all these lawsuits.[466]

If GCDs are charged with paying compensation for regulatory takings themselves, as *Bragg* suggests, greater reticence on their part in choosing to issue permits for less water than requested—or to even deny permits—is an easy thing to predict. On the other hand, if GCDs go ahead and, as a part of their state-mandated duty to manage groundwater assets, incur takings claims that they cannot cover, eventually the state will have to step in with money and/or legislation to satisfy claimants or to make claims more difficult to pursue, respectively. Otherwise, GCDs will simply be unable to maintain litigation and settlements stemming from permit denial or permit challenges by groundwater owners. How a GCD will not end up as a "rubber stamper" of permits without state support for settling compensation claims and litigation is unclear.

Trepidation exists about the status of ownership of groundwater in San Antonio after *Day*. Mr. Puente said, "We have water under the ground . . . If there's a taking, the Supreme Court has basically ruled that we no longer own that water, but that it belongs to [landowners] who can pump that water out from the ground into their holdings."[467]

It remains to be seen what practical effect the court's decision has beyond the Edwards Aquifer Authority itself. The court's discussion of the factors involved will perhaps trigger not only more legal wrangling over

---

[464] Morgan Smith, *Lawsuit Could Determine Future of Groundwater*, THE TEXAS TRIBUNE (Apr. 22, 2010), http://www.texastribune.org/texas-environmental-news/water-supply/lawsuit-could-determine-future-of-groundwater/.

[465] *Id.*

[466] *Id.*

[467] *Id.*

property rights, but also future legislative attempts to address water rights in Texas. The 2013 Texas Legislative session was surprisingly quiescent regarding possible statutory remedies designed to shield groundwater districts from liability. However, this author has doubts about the continuing viability of compensable takings based solely on unreasonable interference with use and enjoyment in Texas.

X. CONCLUSION

The regulatory takings claims made by oil and gas producing lessees may be very difficult to win. Leases terminate because of lack of production—production disallowed by regulation—and the fee simple determinable interest is over unless the lease does not contain an adequate force majeure clause that suspends, perhaps indefinitely, the running of the primary term during periods when regulations are enacted that prevent development. Therefore, effectively, lessees really do not possess a property interest capable of being taken. Owners of groundwater will not face this particular issue, as their interest typically does not expire or get suspended.

Edwards Aquifer Authority v. Day will affect the future of enhanced recovery operations that require permits to drill water wells. Legal analysts have noted that since the required data for the *Penn Central* or *Lucas* tests are detail intensive balancing of dynamics specific to each conflict, such litigation will often require wide expert witness scrutiny and testimony, discovery, and courtroom preparation.[468] Therefore, when GCDs decide whether or not to issue a permit, they must be cognizant of the "taking" specter that might be invoked by the landowner, and if so, what compensation may be due. This may make GCDs reluctant to deny permits in scenarios such as that encountered in *Day* to avoid costly litigation and possible subsequent "takings" liability.

Concern exists, however, as to whether the "takings" game is rigged against a water owner, as *Trail Enterprises* suggests it may be rigged against a mineral owner that is not an oil and gas developer—but who paid value for the minerals upon purchase. With the third prong invoked in *Trail Enterprises*, taken from *Sheffield*, requiring an "investment backed expectation" possibly being the deciding factor, how can a water owner show such a thing? In addition, will case law now be developed that recognizes that hydrocarbons and water are very different things located in different places and which are developed for very different reasons?

The oil and gas industry and landowners are watching the development of water takings jurisprudence closely because of the necessity of water for

[468] Civins, *supra* note 457.

exploration, development, and enhanced recovery operations, primarily fracing. Permitting schemes that significantly lower availability of groundwater for use in fracing operations would cause serious strife to the wave of operators developing Texas shale gas plays such as the Eagle Ford and Barnett Shale. However, fracing technology marches on. Already, techniques for saving and/or recycling water used for fracing are now prevalent.[469] There may come a day when advancing fracing techniques and technology lower the amount of water necessary for fracing to such an extent that compensatory actions arising from water use for unconventional plays fades.

However, groundwater use and the regulation thereof will only wax in importance in the future. Even though enhanced oil and gas recovery operations can hinge on groundwater use and are currently perhaps the most contentious use of groundwater in the public's view, many other users of significant amounts of groundwater, such those involved in agricultural projects, should follow closely the development of groundwater takings jurisprudence and the corresponding reaction of cities, GCDs, and the state legislature. *Day* represents only the first drops of what could rise into a flood.

[469] *See* Alison Sider, et al., *Drillers Begin Reusing 'Frack Water,'* WALL ST. J. (Nov. 20, 2012), *available at* http://online.wsj.com/news/articles/SB10001424052970203937004578077183112409260.