

# IN DROUGHT, A STORM BREWS: DFCs AND THE OIL AND GAS EXEMPTION

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## I. INTRODUCTION

Texans are usually wary about water. But wariness should be on the rise with record droughts, an exploding population, and the potential for regulatory caps on groundwater production. Oil and gas operators should be particularly wary, given the increase in shale play development, which typically requires more water. While water use by oil and gas operators may be a small percentage of Texas’s overall water demand, operators still must understand the Texas water environment and prepare early for how they will meet their water needs.

This Article discusses the regulatory environment in Texas as it relates to groundwater acquisition for oil and gas operations. The Article focuses on how the desired future condition process may affect exempt groundwater wells used to supply rigs actively engaged in hydraulic fracturing and whether a groundwater conservation district could limit production from such an exempt water well. While the discussion is relevant to groundwater use for any type of oil and gas operation, this Article uses hydraulic fracturing as a backdrop because of its rapidly expanding use in shale and other tight formation development. And, while surface water and diffused water can be used to meet water needs, this Article focuses on groundwater issues brewing in the record drought that persists in Texas.

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## II. WATER DEMAND FOR FRACING

Production from shale requires lots of water, particularly if using hydraulic fracturing (or “fracing”) in a deep, horizontal well. Just how much water is used or will be needed in the future is an evolving topic. The U.S. Department of Energy estimates fracing a horizontal well requires on average between 2 to 4 million gallons of water.<sup>1</sup> With respect to the major Texas shale plays, a recent study commissioned by the Texas Water Development Board (TWDB) estimates that since 2008, operators in the Barnett, Haynesville, and Eagle Ford plays used on average over 3, 2, and 5 million gallons per well (mg/w), respectively.<sup>2</sup>

The variance in water use per well is fairly drastic among wells and basins, ranging from 1 to >13 mg/w, with higher water use occurring more often in the Eagle Ford play.<sup>3</sup> Factors such as well depth, well lateral length, and formation type contribute to this variance.<sup>4</sup>

Total water use for fracing wells amounted to approximately 36,000 acre-feet (AF) in Texas in 2008, with over 25,000 AF of this use occurring in the Barnett Shale.<sup>5</sup> The TWDB Oil & Gas Study predicts overall water use for fracing in Texas will increase from the current 37,000 AF per year to a peak of 120,000 AF by 2020-2030.<sup>6</sup> To put this in context, approximately 17,000,000 AF of water is legally and physically available in Texas today.<sup>7</sup>

While water volumes needed to drill and stimulate shale gas wells can be large, they generally represent a small percentage of total water resource use in shale gas basins (ranging between 0.1% to 0.8% by basin).<sup>8</sup> In Texas, the volume of water used for fracing, and *all* other oil and gas and mining operations, represents less than one percent of total statewide water use, although the use of water for fracing is expected to increase significantly through 2020.<sup>9</sup> One commentator has stated that, in the Carrizo Aquifer of the Eagle Ford shale region, current (non-oil and gas

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1. U.S. DEP'T OF ENERGY, MODERN SHALE GAS DEVELOPMENT IN THE UNITED STATES: A PRIMER 64 (2009), [http://www.irc.state.tx.us/does shale/Shale\\_Gas\\_Primer\\_2009.pdf](http://www.irc.state.tx.us/does shale/Shale_Gas_Primer_2009.pdf) [hereinafter MODERN SHALE GAS PRIMER].

2. TEX. WATER DEV. BD., CURRENT AND PROJECTED WATER USE IN TEXAS MINING AND OIL AND GAS INDUSTRY, FINAL REPORT, 69 fig.29, 73 fig.35, 77 fig.42 (June 2011), [http://www.twdb.state.tx.us/rwpg/rpgm\\_rpts/0904830939\\_MiningWaterUse.pdf](http://www.twdb.state.tx.us/rwpg/rpgm_rpts/0904830939_MiningWaterUse.pdf) [hereinafter TEX. WATER DEV. BD., OIL & GAS STUDY]; *see also* MODERN SHALE GAS PRIMER, *supra* note 1, at 64, ex. 37.

3. TEX. WATER DEV. BD., OIL & GAS STUDY, *supra* note 2, at 59-60, 71, 74, 78.

4. *See id.* at 29.

5. *See id.* at 1, 61, 64 tbl.10. One acre-foot of water equals approximately 325,851.4 gallons.

6. *See id.* at 187.

7. TEX. WATER DEV. BD., WATER FOR TEXAS: SUMMARY OF THE 2011 REGIONAL WATER PLANS 2-3 (2011), <http://www.twdb.texas.gov/wrpi/rwp/documents/2011RWPLegislativeSummary.pdf> [hereinafter SUMMARY OF THE 2011 REGIONAL WATER PLANS].

8. MODERN SHALE GAS PRIMER, *supra* note 1, at 65.

9. TEX. WATER DEV. BD., WATER FOR TEXAS: 2012 STATE WATER PLAN 140, <http://www.twdb.state.tx.us/wrpi/swp/swp.asp> (last visited Apr. 18, 2012) [hereinafter 2012 STATE WATER PLAN].

related) withdrawals amount to roughly 275,000 AF per year, while the total amount of water production from the Eagle Ford play may only be as much as 300,000 AF over the life of the play.<sup>10</sup> Notably, however, the TWDB Oil & Gas Study predicts a larger amount of water use for the Eagle Ford play with peak use in 2024 alone of around 45,000 AF.<sup>11</sup>

Despite the comparatively low estimated amount of water use overall for shale development, operators still face the climate of a growing population, dwindling water supply, and frequent droughts. The TWDB predicts total water demand will be approximately 22 million AF per year by 2060, but water supply will be only 15.3 million AF per year.<sup>12</sup> All water users, not just frac operators, must be mindful of this scenario.

Accessing sufficient water for fracing involves numerous legal and pragmatic hurdles. The hurdles are defined by the type, amount, reliability, and proximity of water resources to the shale play. The regulatory framework for accessing water is driven primarily by state and local law. Water needs for fracing are unique in that they require substantial water over a relatively short period of time during the drilling and stimulating phase, which may not coincide with droughts or seasonal changes in water availability.

Moreover, given the diversity of water resources in Texas, operators must consider local water needs and cumulative impacts to local resources from production. Localized impacts could be severe. Producing 4 million gallons of water in a short time from one groundwater well could lower the water table in the area of that well, leaving the landowner dry until aquifer conditions recover. Thus, the water environment could include negative public sentiment towards use of water for fracing because of supply issues, notwithstanding any water quality concerns the public may have.

Given this climate, careful consideration must be given to the state's water-planning process and the exemption for water wells drilled for oil and gas purposes.

### III. GROUNDWATER LAW IN TEXAS

Operators in Texas have three major sources of water to evaluate: groundwater, surface water, and diffused water. They may also consider recycled waste water as a means of meeting some portion of their water demands. The type of water available varies by location. For instance, a 2007 study prepared for the TWDB concluded that 60% of the water supply for the Barnett Shale came from groundwater supplies, and that

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10. Darrell T. Brownlow, *Eagle Ford Shale Play and the Carrizo Aquifer*, FOUNTAINHEAD (TEX. GROUND WATER ASS'N), 4th Quarter 2010, at 1, 4-5, available at <http://www.oilandgaslawyerblog.com/Brownlow%20Article.pdf>.

11. TEX. WATER DEV. BD., OIL & GAS STUDY, *supra* note 2, at 184.

12. SUMMARY OF THE 2011 REGIONAL WATER PLANS, *supra* note 7, at 2-2 to 2-3.

groundwater production for shale development accounted for only 3% of groundwater production in the area.<sup>13</sup> As stated previously, this Article focuses on groundwater.

*A. Starting Premise: Absolute Ownership*

Water rights and regulations differ among the states. With respect to groundwater, Texas is one of the few remaining states that follows the “absolute ownership” doctrine:

An owner of soil may divert percolating water, consume or cut it off, with impunity. It is the same as land, and cannot be distinguished in law from land. So the owner of land is the absolute owner of the soil and of percolating water, which is a part of, and not different from, the soil.<sup>14</sup>

The absolute ownership rule is often referred to by its corollary, the Rule of Capture. The Rule of Capture provides that “landowners have the right to take all the water they can capture under their land and do with it what they please, and they will not be liable to neighbors even if in doing so they deprive their neighbors of the water’s use.”<sup>15</sup> The rule, however, is not without limitations in Texas. A landowner may not negligently cause subsidence of another’s land by his production, “may not maliciously take water for the sole purpose of injuring his neighbor,” and may not wantonly and willfully waste the water.<sup>16</sup>

There are other major limitations on the absolute ownership doctrine—the Conservation Amendment, Texas Constitution art. XVI, § 59, and the statutes enacted pursuant to that authority. Charged by its people with the responsibility of protecting the state’s natural resources, the Texas Legislature regulates groundwater production through local groundwater conservation districts (GCDs), typically authorized and created pursuant to Chapter 36 of the Texas Water Code.<sup>17</sup>

Just how far a GCD can regulate a landowner’s property rights in groundwater, and whether those property rights are constitutionally

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13. JAMES BENE ET AL., NORTHERN TRINITY/WOODBINE GROUNDWATER AVAILABILITY MODEL: ASSESSMENT OF GROUNDWATER USE IN THE NORTHERN TRINITY AQUIFER DUE TO URBAN GROWTH AND BARNETT SHALE DEVELOPMENT 2 (2007).

14. *Hous. & T.C. Ry. Co. v. East*, 81 S.W. 279, 281 (Tex. 1904); *see also* *Friendswood Dev. Co. v. Smith-Sw. Indus., Inc.*, 576 S.W.2d 21, 25 (Tex. 1978) (“[In *East*,] this Court adopted the absolute ownership doctrine of underground percolating waters.”); *id.* at 30 (“[O]wnership of underground water comes with ownership of the surface; it is part of the soil.”); *City of Corpus Christi v. City of Pleasanton*, 276 S.W.2d 798, 800 (Tex. 1955) (“[P]ercolating waters are regarded as the property of the owner of the surface . . .”).

15. *Sipriano v. Great Spring Waters of Am., Inc.*, 1 S.W.3d 75, 83 (Tex. 1999).

16. *See generally id.* at 77-79 (recounting decisions establishing exceptions to the Rule of Capture).

17. *See* TEX. WATER CODE ANN. § 36.0015 (West 2008).

protected, is a controversial issue in Texas, one recently addressed by the Texas Supreme Court in *Edwards Aquifer Authority v. Day*.<sup>18</sup> In this landmark decision, the Court held that landowners have ownership rights in groundwater in place, which groundwater rights are property rights subject to constitutional protection.<sup>19</sup> Despite that groundwater rights may not be taken without just compensation, GCDs still have significant regulatory authority.

### B. Groundwater Conservation Districts (GCDs)

Texas recognizes nine major aquifers and 21 minor aquifers that supply about 59 percent of the total water used in the state.<sup>20</sup> Each aquifer formation is unique, varying in the volume and quality of water stored and ability to recharge.<sup>21</sup> Climate also varies widely across the State, as do other conditions affecting groundwater use, such as population and agricultural production.<sup>22</sup> Thus, the State's preferred method of groundwater management is through local groundwater conservation districts and the rules promulgated by them pursuant to Chapter 36 of the Texas Water Code.<sup>23</sup> At the start of 2011, there were ninety-six confirmed groundwater conservation districts in Texas, with at least one pending confirmation.<sup>24</sup>

When a frac operator seeks to acquire groundwater, its first step is to evaluate if the groundwater acquisition site is located within a GCD. If the site is within a GCD, water production is subject to the GCD's rules. If the site is located outside a GCD, the Rule of Capture applies and the operator may drill a water well and produce groundwater from that well, subject to the above described common law limitations and any agreements with the surface owner.<sup>25</sup>

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18. *Edwards Aquifer Auth. v. Day*, No. 08-0964, 2012 WL 592729 (Tex. Feb. 24, 2012).

19. *Id.* at \*11.

20. 2012 STATE WATER PLAN, *supra* note 9, at 163; TEX. WATER DEV. BD., WATER FOR TEXAS: 2007 STATE WATER PLAN 176, [http://www.twdb.state.tx.us/publications/State\\_Water\\_Plan/2007/](http://www.twdb.state.tx.us/publications/State_Water_Plan/2007/) (last visited Apr. 18, 2012) [hereinafter 2007 STATE WATER PLAN].

21. *See* 2007 STATE WATER PLAN, *supra* note 20, at 186-217.

22. *See* 2012 STATE WATER PLAN, *supra* note 9, at 31-127, 145-51.

23. TEX. WATER CODE ANN. § 36.0015 (West 2008). Not all GCDs are created through Chapter 36 of the Texas Water Code. There are districts created by other laws or their own enabling legislation, such as the Edwards Aquifer Authority or the Harris Galveston Subsidence District. This Article focuses on Chapter 36 GCDs.

24. *See* TEX. WATER DEV. BD., GROUNDWATER CONSERVATION DISTRICTS\* (CONFIRMED AND PENDING CONFIRMATION) (Sept. 2011), [http://www.twdb.state.tx.us/mapping/maps/pdf/gcd\\_only\\_8x11.pdf](http://www.twdb.state.tx.us/mapping/maps/pdf/gcd_only_8x11.pdf).

25. For instance, a landowner leasing property to an oil and gas operator could require, through negotiation of the lease, that the operator obtain groundwater only from the leased property and require payment for groundwater withdrawn from the property.

As evidenced by the table below, multiple GCDs have jurisdiction within the major shale plays of Texas. Therefore, it is likely that a frac operator will have to deal with a GCD's rules at some point.

<b>Shale Play</b>	<b>Groundwater Districts in Proximity</b>
Barnett	Middle Trinity GCD Prairielands GCD Upper Trinity GCD Northern Trinity GCD North Texas GCD
Haynesville	Panola GCD Rusk GCD Pineywoods GCD
Eagle Ford	Gonzales County GCD Dewitt GCD Bee GCD Live Oak GCD McMullen GCD Evergreen UWCD Wintergarden GCD

### 1. GCD Permitting Authority

When adopting rules regulating groundwater production, GCDs must comply with their enabling legislation.<sup>26</sup> Chapter 36 of the Texas Water Code grants GCDs broad authority to manage, conserve, and protect groundwater resources through rulemaking and permitting.<sup>27</sup> A GCD must require a permit for the “drilling, equipping, operating, or completing of wells or for substantially altering the size of wells or well pumps,” and it may require permit amendments for changes in “the withdrawal or use of groundwater” during a permit term.<sup>28</sup> By rule, a GCD must “determine each activity regulated by the district for which a permit or permit amendment is required.”<sup>29</sup> It is a violation of Chapter 36 for any person, firm, or corporation to “drill a well,” “alter the size of a well or well pump

26. See *Guitar Holding Co. v. Hudspeth Cnty. Underground Water Conserv. Dist. No. 1*, 263 S.W.3d 910, 918 (Tex. 2008); *In re Entergy Corp.*, 142 S.W.3d 316 (Tex. 2004).

27. TEX. WATER CODE ANN. § 36.101(a) (West Supp. 2011) (rulemaking authority); § 36.113(a) (West Supp. 2011) (permitting authority); § 36.116(a)(2)(A)-(F) (West Supp. 2011) (listing specific methods a GCD may use to limit groundwater production).

28. § 36.113(a).

29. *Id.* § 36.114.

such that it would bring that well under the jurisdiction of the district,” or “operate a well without first obtaining a permit.”<sup>30</sup>

While this permitting authority is applied on a local basis throughout the state, GCDs also play a larger role in regional and state water planning. As explained below, GCDs must adopt rules and develop management plans that enable GCDs to meet the desired future conditions established for regional groundwater resources.

## 2. *Desired Future Conditions*

In 2005 the Texas Legislature substantially rewrote the Texas Water Code, changing the way GCDs develop management plans and participate in regional water planning.<sup>31</sup> At its core, House Bill 1763 required GCDs to work together with other GCDs in their management areas and regional surface water management entities to develop “desired future conditions” (DFCs) for their groundwater resources.<sup>32</sup> In the 2011 regular session, the 82nd Legislature improved the DFC process, although its potential impacts remain unchanged as they relate to the topics discussed here.<sup>33</sup> This Article incorporates the recent and relevant changes to the DFC process.

There are sixteen groundwater management areas in Texas.<sup>34</sup> GCDs within each management area must jointly develop a comprehensive management plan that addresses multiple management goals, including the DFC of the groundwater resources in the shared management area.<sup>35</sup> On five-year intervals (which began no later than September 1, 2010), GCDs must propose for adoption a DFC for the relevant aquifers within the management area that eventually, after a notice and comment period, must be adopted by a two-thirds vote of the representatives representing the GCDs within the management area.<sup>36</sup>

The 82nd Legislature made some important improvements to the DFC process. Prior to the legislative changes in 2011, “desired future condition” was not defined in statute. That phrase is now defined as “a quantitative description, adopted in accordance with Section 36.108, of the desired condition of the groundwater resources in a management area at one or

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30. *Id.* § 36.115.

31. Tex. H.B. 1763, 79th Leg., R.S., ch. 970 (2005) (changing § 36.1071, § 36.1072, and § 36.108, and adding new § 36.1132 to Chapter 36 of the Texas Water Code).

32. TEX. WATER CODE ANN. §§ 36.1071, .1072, .108 (West 2008) (as amended by Tex. H.B. 1763, 79th Leg., R.S., ch. 970 (2005)).

33. Tex. S.B. 660, 82d Leg., R.S., ch. 1233 (2011) (amending § 36.1071, § 36.108, and adding § 36.1081 to § 36.1086). The changes to the DFC process went into effect September 1, 2011, and in most cases only apply to DFCs adopted after that date. *Id.* §§ 23-25.

34. See *TWDB Maps: Groundwater Management Areas – Map Series*, TEX. WATER DEV. BD. (Aug. 2007), <http://www.twdb.state.tx.us/mapping/maps.asp>.

35. § 36.1071(a)(8); § 36.108(b) (West Supp. 2011).

36. § 36.108(d), (d-2), (d-3).

more specified future times.”<sup>37</sup> The key is a DFC requires a quantitative description, something that can be objectively measured.<sup>38</sup> A DFC may be a certain water elevation in an aquifer or a certain flow rate at a connected spring.<sup>39</sup>

Also, in proposing a DFC, GCDs must now consider many factors, including aquifer uses and conditions, water supply needs, hydrological conditions, and impacts to environment, subsidence, socioeconomics, and private property rights.<sup>40</sup> Ultimately, a proposed DFC must “provide a balance between the highest practicable level of groundwater production and the conservation, preservation, protection, recharging, and prevention of waste of groundwater and control of subsidence in the management area.”<sup>41</sup>

Once adopted, a DFC must be submitted to the TWDB, which must use groundwater availability models to estimate the “modeled available groundwater” in the management area to meet the DFC.<sup>42</sup> The TWDB must provide GCDs with the modeled available groundwater figure for their respective management areas.<sup>43</sup> Each GCD in a management area must then ensure that its management plan contains goals and objectives consistent with achieving the DFC for the aquifers in the management area.<sup>44</sup> A GCD’s individual management plan must include estimates of the modeled available groundwater in the GCD based on the DFC.<sup>45</sup>

Despite the 2011 improvements, the inherent danger of the DFC process is that the “desired future condition” of existing groundwater users is likely to be preservation of the status quo. GCDs, as local political bodies, are subject to public pressure in that direction. The DFCs, therefore, have potential to skew the process towards protection of existing uses in a management area to the detriment of new uses or users.

This is significant because § 36.1132 of the Texas Water Code, as amended in 2011, states that “[a] district, to the extent possible, shall issue permits up to the point that the total volume of *exempt and permitted groundwater production* will achieve an applicable desired future condition under Section 36.108.”<sup>46</sup> GCDs could read this language to authorize an overall cap on groundwater production within which all permits and exempt use must fit. That is, they may view § 36.1132 as a prohibition against issuing permits after the total “modeled available groundwater” has been

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37. *Id.* § 36.001(30).

38. *See id.*

39. *See id.*

40. § 36.108(d)(1)-(9).

41. § 36.108(d-2).

42. *Id.* § 36.1084 (West Supp. 2011).

43. *Id.*

44. *Id.* § 36.1085.

45. *Id.* § 36.1071(e)(3)(A).

46. *Id.* § 36.1132(a) (emphasis added).

permitted or attributed to exempt use because that is the amount of water modeled to be available to meet the DFC. Thus, caps on total production from an aquifer are imminent.

Notably, before 2011, § 36.1132 did not require GCDs to consider exempt use in meeting their permitting obligations. Now GCDs must consider (and even assist TWDB in estimating) exempt use in an effort to achieve a DFC.<sup>47</sup> While it is important to consider exempt uses, the current method of doing so only means there is less “modeled available groundwater” for new permits or new uses because the DFC process itself does not expressly account for exempt use.<sup>48</sup> Noticeably absent from the DFC considerations is an express requirement to consider the amount of existing and projected exempt use in a management area.<sup>49</sup> The only consideration a GCD might have to give exempt uses is in the development or amendment of its management plan. During that process, a GCD must consider the “amount of groundwater being used within the district on an annual basis” and “the projected total demand . . . according to the most recently adopted state water plan.”<sup>50</sup> But even here there is no express requirement to consider exempt uses, and in any event, a DFC is adopted separately from, and incorporated subsequently into, a management plan.<sup>51</sup>

The only express requirement to consider exempt uses comes from the new amendments to § 36.1132 when a district is identifying how much to permit.<sup>52</sup> That may be too late in the process if GCDs are to use “modeled available groundwater” as a guide for permitting decisions. By this time, a DFC, the “modeled available groundwater” figure, and, most likely, the management plan have already been set. Thus, the TWDB’s “modeled available groundwater” may not actually reflect a true picture of the groundwater available to be permitted to meet a DFC. This means subsequent estimates of exempt use—considered at the permitting stage—will further strain the amount of groundwater available to be permitted by a GCD. This timing will also likely spark piecemeal litigation over estimates of exempt use in permit proceedings, rather than during an appeal of a DFC.<sup>53</sup>

This scenario makes exempt uses of groundwater even more important to an oil and gas operator. Moreover, now that the TWDB is required to estimate exempt use, and GCDs are supposed to assist the TWDB in this

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47. § 36.1132(a), (b)(2), (c).

48. *See id.*

49. *See id.* § 36.108(d)(1)-(9).

50. § 36.1071(e)(3)(B), (G).

51. § 36.1071(e)(3)(G).

52. § 36.1132(b)(2) (In issuing permits, GCDs must consider “the [TWDB] executive administrator’s estimate of the current and projected amount of groundwater produced under exemptions granted by district rules and Section 36.117.”).

53. *See id.* § 36.1083 (providing process for appeal of DFC).

process,<sup>54</sup> the tools available to GCDs to monitor exempt use become more important. As explained below, GCDs can require production reports from certain, but not all, exempt users.

So how might the DFC process impact a frac operation? If a GCD determines that only 20,000 AF of water is available to be produced to maintain the DFC of an aquifer, and the GCD also determines it has reached that cap through permitting and estimates of existing exempt production, it could take the position that an operator cannot produce an adequate amount from a new exempt oil and gas water well. Such a position could hamper a new hydraulic fracturing operation and the overall development of oil and gas. The arguments for and against a GCD's authority to limit production in this manner are discussed below as part of an analysis of Chapter 36's exemptions from permitting.

### *C. Exemptions from Permitting*

Section 36.117 of the Texas Water Code requires GCDs, absent contrary language in their enabling legislation, to exempt certain types of wells or activities from the "permitting" requirements in their rules.<sup>55</sup> As it did with the DFC process, in 2011 the legislature made some important clarifications to § 36.117.<sup>56</sup>

In general, § 36.117(b) requires a GCD to provide an exemption from permitting for (1) drilling or operating a well used for domestic and livestock purposes, (2) drilling a well used to supply a rig actively engaged in oil and gas operations, and (3) drilling and production from a well for surface coal mining activities.<sup>57</sup> Section 36.117(l) also provides an exemption for certain production or injection wells permitted by the Texas Railroad Commission (RRC).<sup>58</sup> But the generalizations must end there. A quick glance at the statute makes clear the exemptions are not so clear. Each contains very particular qualifiers and, while only one of the exemptions could apply to water production for hydraulic fracturing operations, each of the exemptions must be evaluated to understand what the exemption for oil and gas activity allows.

Also, it is important to recognize that, while a GCD's rules must at least accommodate the statutory exemptions in § 36.117(b), § 36.117(a) grants GCDs discretion to broaden the exemptions or provide for others with respect to wells.<sup>59</sup> A GCD may "provide an exemption from the district's requirement to obtain a drilling permit, an operating permit, or any

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54. See § 36.1132(c).

55. *Id.* § 36.117.

56. See Tex. S.B. 692, 82d Leg., R.S., ch. 32 (2011) (amending Texas Water Code Ann. § 36.117).

57. § 36.117(b)(1)-(3).

58. § 36.117(l).

59. § 36.117(a).

other permit required by” Chapter 36 or the GCD’s rules.<sup>60</sup> Thus, a GCD’s rules should always be consulted to determine if the GCD has exempted other types of wells or broadened the qualifications set out for the mandatory exemptions.<sup>61</sup>

### 1. Wells for Domestic and Livestock Use

Section 36.117(b)(1) prohibits a GCD from requiring a permit for:

(1) drilling or operating a well used *solely* for domestic use, or for providing water for livestock or poultry, if the well is: (A) located or to be located on a tract of land larger than 10 acres; and (B) drilled, completed, or equipped so that it is incapable of producing more than 25,000 gallons of groundwater a day . . . .<sup>62</sup>

Before 2011, the exemption simply applied to a “well,” without reference to any activity.<sup>63</sup> The 2011 amendments clarified that this exemption applies to the “drilling or operating” of a well for domestic and livestock purposes.<sup>64</sup> The well must be used “solely” for domestic and livestock purposes.<sup>65</sup> A landowner could lose the exemption if he sold water produced from the well to a frac operator.<sup>66</sup>

There is arguably more important language located in § 36.117(c), which states: “A district may not restrict the production of water from any well described by Subsection (b)(1).”<sup>67</sup> For instance, so long as the well continues to qualify for exempt well status under § 36.117(b)(1)—it is incapable of producing more than 25,000 gallons per day—a GCD may not limit production from that well, whether in times of drought or otherwise.<sup>68</sup> Important for oil and gas operators, there is no such express protection provided for other types of exempt wells or groundwater uses. This silence is discussed later.

There is another unique protection provided to exempt domestic and livestock wells with respect to production reports. A GCD is authorized to

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60. *Id.*

61. There are other exemptions from permitting, or restrictions on GCDs, contained within and outside Chapter 36 that are not discussed here. *See, e.g.*, TEX. WATER CODE ANN. § 36.121 (West Supp. 2011); *id.* § 26.131(a)(1)(B) (West 2008); TEX. NAT. RES. CODE ANN. §§ 131.353(c), .354(b)-(e) (West 2008). For a more in-depth discussion of those exemptions and restrictions, and the others discussed here, see Mark McPherson, *Don’t Hand Me No Lines, and Keep Your GCD Hands to Yourself*, ST. B. TEX., 10TH ANNUAL CHANGING FACE OF WATER RIGHTS ADVANCED COURSE (Apr. 2-3, 2009).

62. § 36.117(b)(1) (emphasis added).

63. *Id.* (West 2008).

64. *Id.* (West Supp. 2011).

65. *Id.*

66. *See id.*

67. § 36.117(c).

68. *See id.*

require that owners or operators keep records and reports of the drilling and equipping of water wells and the production and use of water from those wells.<sup>69</sup> A GCD can also require an owner or operator of a water well that must be registered with or permitted by the GCD “to report groundwater withdrawals using reasonable and appropriate reporting methods and frequency.”<sup>70</sup> The GCD cannot, however, require such reporting of withdrawals by owners or operators of exempt domestic and livestock wells.<sup>71</sup> This same protection is not provided to other types of exempt wells.

## 2. Wells for Certain Oil and Gas Activities

Section 36.117(b)(2) prohibits a GCD from requiring a permit for:

(2) *drilling* 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 water well is located on the *same lease or field* associated with the drilling rig . . . .<sup>72</sup>

To begin, it is important to note the exemption only expressly prohibits a GCD from requiring a permit for “drilling” a water well used for oil and gas drilling and exploration operations.<sup>73</sup> It does not expressly preclude a GCD from requiring a permit for “production” from such a well, from restricting production from such a well, or from requiring an oil and gas operator to comply with production limitations.<sup>74</sup> If such prohibitions on GCD authority exist, they must come from somewhere else.

Because § 36.117(b)(2) is limited to an exemption for “drilling” a water well to be used for oil and gas operations,<sup>75</sup> a GCD could argue that it is authorized to permit or limit production from such a well. A GCD might also refer to § 36.117(c), which, as explained above, prohibits a GCD from restricting production from only exempt domestic and livestock wells.<sup>76</sup> Because § 36.117(c) is silent as to such a restriction on production from an exempt oil and gas water well, a GCD could take the position that an exempt oil and gas water well is not exempt from production limits.

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69. *See id.* § 36.111(a) (West 2008).

70. § 36.111(b).

71. *See id.* (excepting wells exempt under § 36.117(b)(1) from this GCD authority).

72. § 36.117(b)(2) (West Supp. 2011) (emphasis added).

73. *Id.*

74. *See id.*

75. *See id.*

76. § 36.117(c).

Even though § 36.117(c) does not expressly limit a GCD's ability to restrict "production" from an exempt oil and gas water well, various provisions in Chapter 36 appear to establish a minimum amount of exempt production for oil and gas water wells that a GCD may not infringe upon. First, the rig to which water is being supplied must be "actively engaged in drilling or exploration operations" and must be "located on the same lease or field" as the water well.<sup>77</sup> Only so much water can be used for this purpose, even if not quantified in the exemption.<sup>78</sup> The "actively engaged" requirement establishes a temporal restriction, and the "same lease or field" requirement provides a geographic restriction.<sup>79</sup> This is consistent with, and should be construed as recognizing, the common law right of a dominant mineral estate owner to use as much groundwater as is reasonably necessary to develop the mineral estate.<sup>80</sup> Accordingly, the RRC refers to these types of exempt wells as "temporary rig supply wells."<sup>81</sup> The RRC "interprets the phrase 'a rig that is actively engaged in drilling or exploration operations for an oil or gas well permitted by the commission' to mean a drilling rig or a workover rig and interprets 'exploration operations' to include well completion and workover, including hydraulic fracturing operations."<sup>82</sup>

Second, § 36.002 prohibits a GCD from enacting rules that could be interpreted as depriving or divesting landowners, or their lessees, heirs, and assigns, of their ownership or rights in groundwater, as described in § 36.002.<sup>83</sup> The legislature recognized that a "landowner owns the groundwater below the surface of the landowner's land as real property" and that those rights include the right "to drill for and produce the groundwater below the surface of [the] real property."<sup>84</sup> And, while these rights are subject to a GCD's right to regulate groundwater production pursuant to § 36.113, § 36.116, and § 36.122, nothing in § 36.002 supersedes the exemptions provided in § 36.117. Because § 36.002 prohibits a GCD from enacting rules that could be interpreted as infringing on the ownership rights of the mineral estate, a GCD cannot restrict

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77. § 36.117(b)(2).

78. *See id.*

79. *See id.*

80. *See Sun Oil Co. v. Whitaker*, 483 S.W.2d 808, 811 (Tex. 1972); *Stradley v. Magnolia Petroleum Co.*, 155 S.W.2d 649, 651-52 (Tex. Civ. App.—Amarillo 1941, writ ref'd). Of course, this implied right can be modified by express contractual provisions in the conveyance of the mineral estate. *See Sun Oil*, 483 S.W.2d at 810-11.

81. *See Water Use in Association with Oil and Gas Activities Regulated by the Railroad Commission of Texas*, R.R. COMM'N OF TEX., at ¶ 4.C & associated table, <http://www.rrc.state.tx.us/barnettshale/wateruse.php> [hereinafter *Water Use in Association with Oil and Gas Activities*] (last visited Apr. 17, 2012).

82. *Id.* Despite the RRC's position, some GCDs could interpret the restriction to "drilling and exploration" to create an exemption only until oil and gas is found and that the exemption cannot be used to supply water to rigs engaged in enhanced recovery operations.

83. TEX. WATER CODE ANN. § 36.002(c) (West Supp. 2011) (incorporating amendments by Tex. S.B. 332, 82d Leg., R.S. (2011)).

84. § 36.002(a)-(b).

production to an amount below what would be reasonably necessary to develop the minerals.<sup>85</sup> That amount, though not quantified, is captured by the language in § 36.117(b)(2) and protected by § 36.002(c).<sup>86</sup>

Finally, and perhaps most importantly, § 36.117(d)(2) states that a GCD may cancel an exemption and

may require an operating permit for or restrict production from a well, if: . . . (2) the *groundwater withdrawals that were exempted* under Subsection (b)(2) are no longer 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].<sup>87</sup>

The emphasized language expressly acknowledges that production from, and not just the drilling of, an oil and gas water well is exempt.<sup>88</sup> Thus, the exemption from “drilling” in § 36.117(b)(2) is actually broader, extending to production from such a water well.<sup>89</sup> When read in conjunction with § 36.117(d)(2), § 36.117(b)(2) provides an exempt amount of production from exempt oil and gas water wells: It is an amount that is reasonably necessary to supply a rig actively drilling or exploring for oil and gas on the same lease or field as the water well.<sup>90</sup>

The problem for GCDs and regional planners is this amount of exempt production is not expressly quantified on an AF basis. It makes sense that the legislature could not quantify the amount due to the variability in amount of water necessary for oil and gas drilling and exploration operations. As explained above, the amount of water needed to frac a horizontal well varies significantly by well and basin, ranging in Texas from 1 to >13 mg/w.<sup>91</sup> It would be unreasonable to attempt to quantify in statute the amount of water needed for this entire class of exempt wells.

The exemption for domestic and livestock wells is a different story. That exemption contains an express amount of exempt production—up to 25,000 AF per day.<sup>92</sup> Section 36.117(c), which precludes a GCD from further restricting this production amount from a domestic and livestock well, exists in part to ensure the state’s ranchers and rural residents have a minimum water supply.<sup>93</sup> Such protection is neither necessary nor possible with respect to production from exempt oil and gas water wells, given the variable water needs and the dominant mineral estate’s common law rights.

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85. § 36.002(d)(2).

86. See §§ 36.002(c), .117(b)(2) (West Supp. 2011).

87. § 36.117(d)(2) (emphasis added).

88. See *id.*

89. See § 36.117(b)(2), (d)(2).

90. See *id.*

91. TEX. WATER DEV. BD., OIL & GAS STUDY, *supra* note 2, at 59-60, 71, 74, 78.

92. § 36.117(b)(1).

93. See § 36.117(c).

Taken together, it is arguable that the language in § 36.002(c), § 36.117(b)(2), and § 36.117(d)(2) creates an exempt amount of groundwater production that an oil and gas operator may produce from an exempt oil and gas water well. The amount is what is reasonably necessary to supply a rig actively drilling or exploring for oil and gas on the same lease or field as the water well. The exact amount of exempt production cannot be easily quantified for an entire class of exempt oil and gas water wells.

Although not clear, a GCD may be authorized to require a permit to produce this exempt amount, given that the “operation” or “production” from an exempt oil and gas water well are activities not expressly exempted in § 36.117(b)(2).<sup>94</sup> Ultimately, however, a GCD cannot restrict production below the reasonably necessary amount unless the operator begins to use the water for another purpose. A GCD has a stronger argument that it can require a permit for and restrict production of amounts in excess of what is reasonably necessary for the drilling or exploring operation.

Regardless, § 36.117(d)(2) contemplates exempt production from an exempt oil and gas water well. It should be emphasized, however, that the “solely” requirement in § 36.117(d)(2) creates a continuing obligation to produce water from the exempt oil and gas water well for only active oil and gas drilling or exploration operations.<sup>95</sup> This means an operator should not allow a landowner to also use water from the well for domestic and livestock use, or any other use for that matter, as a GCD would then be authorized to cancel the exemption and restrict production.<sup>96</sup> But, if an exempt oil and gas water well is used for mixed purposes, a GCD cannot “deny an application for a permit to drill and produce water for hydrocarbon production activities if the application meets all applicable rules as promulgated by the district.”<sup>97</sup> So, if there is going to be a mixed purpose for the water well, a GCD cannot deny a permit to drill and produce from the well just because the well will involve water production for hydrocarbon purposes.<sup>98</sup>

There is another exemption applicable to oil and gas activities. Section 36.117(l) states:

This chapter applies to water wells, including water wells used to supply water for activities related to the exploration or production of hydrocarbons or minerals. This chapter does not apply to production or injection wells drilled for oil, gas, sulphur, uranium, or brine, or for core

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94. See § 36.117(b)(2).

95. See § 36.117(d)(2).

96. See § 36.117(d).

97. § 36.117(g).

98. See *id.*

tests, or for injection of gas, saltwater, or other fluids, under permits issued by the Railroad Commission of Texas.<sup>99</sup>

According to the RRC, the first sentence in this quotation establishes that Chapter 36 applies to “injection water supply wells,” as distinct from “temporary rig supply wells.”<sup>100</sup> The sentence also reiterates that, even if the oil and gas exemption is available to “drill” a water well to temporarily supply an oil and gas rig, the water well still must meet other requirements in Chapter 36 that a GCD can apply to all wells, such as registering and properly equipping the well and filing a driller’s log.<sup>101</sup>

The second sentence in § 36.117(l) clarifies that Chapter 36 does not apply to certain production or injection wells permitted by the RRC, such as a frac well or a well used to dispose of produced water or flowback.<sup>102</sup> Section 26.131 of the Texas Water Code is helpful to understanding all the activities for which the RRC has jurisdiction and discretion to regulate, including any water wells that might be associated with and permitted for those activities by the RRC.

### 3. Wells for Certain Coal Mining Activities

Section 36.117(b)(3) prohibits a GCD from requiring a permit for: “(3) the *drilling* of a water well authorized under a permit issued by the RRC under Chapter 134, Natural Resources Code, or for *production* from the well to the extent the withdrawals are required for mining activities regardless of any subsequent use of the water.”<sup>103</sup>

Section 36.117(b)(3) expressly exempts both the “drilling” of and “production” from wells permitted by the RRC under Chapter 134 of the Texas Natural Resources Code.<sup>104</sup> A GCD might rely on this express reference to “production,” which is absent from the exemption for oil and gas water wells, as support for its authority to permit and limit production from an exempt oil and gas water well. While the argument may be valid as to permitting, it should not carry forward to authorize a GCD to limit production. The reference to production in § 36.117(b)(3) exists to ensure that a GCD does not require a permit for production of water already permitted by the RRC, regardless of how the water is used after it is used for the mining activity.<sup>105</sup> The GCD may only require a permit for

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99. § 36.117(l).

100. See *Water Use in Association with Oil and Gas Activities*, *supra* note 81.

101. § 36.117(h), (i).

102. § 36.117(l).

103. § 36.117(b)(3) (emphasis added).

104. *Id.* Chapter 134 is the Texas Surface Coal Mining and Reclamation Act, which grants the RRC authority to regulate and issue permits for surface coal mining and reclamation operations. TEX. NAT. RES. CODE ANN. §§ 134.001-.188 (West 2001 & Supp. 2008).

105. TEX. WATER CODE ANN. § 36.117(b)(3).

production of water that exceeds the amount “required” for the mining activity.<sup>106</sup> Thus, this language creates an exempt production amount akin to that created by the “actively engaged” and “same lease or field” language contained in § 36.117(b)(2) for exempt oil and gas water wells.

Moreover, exempt coal mining water wells are subject to a similar continuing production obligation like that created by § 36.117(d)(2) for exempt oil and gas water wells. A GCD may cancel an exemption and require an operating permit for or restrict production from an exempt surface coal mining water well if “the [groundwater] withdrawals that were exempted under subsection (b)(3) are no longer necessary for mining activities or are greater than the amount necessary for mining activities specified in the permit issued by” the RRC.<sup>107</sup>

To assist a GCD in monitoring the amount of water required for the mining activity, the entity holding the RRC permit must file monthly reports to the GCD containing: “(1) the total amount of water withdrawn during the month; (2) the quantity of water necessary for mining activities; and (3) the quantity of water withdrawn for other purposes.”<sup>108</sup> This requirement allows a GCD to determine whether to require a permit for any amount of water produced in excess of what is necessary for the mining activity.

A similar purpose is accomplished through § 36.111(b), which authorizes a GCD to require production reports from an owner or operator of an exempt oil and gas water well.<sup>109</sup> If a GCD determined that an oil and gas operator was producing an unusually large amount of water from an exempt oil and gas water well, it could inquire further to determine if the operator is using more than is reasonably necessary for the exempt purposes set out in § 36.117(b)(2).<sup>110</sup> If so, presumably the GCD could require a permit for that excess production.<sup>111</sup>

#### 4. *Qualifications to the Exemptions*

Despite these various exemptions from permitting, it is important to note that a GCD can still require certain things of owners and operators of water wells within its jurisdiction. The exemptions in § 36.117 are only from permitting, not from other requirements that a GCD can place on well owners or operators.

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106. *Id.*

107. § 36.117(d)(3). Even if a GCD can regulate a water well of this type, however, the GCD may not require the well to comply with the GCD’s spacing requirements. § 36.117(f).

108. § 36.117(e).

109. *Id.* § 36.111(b) (West 2008).

110. *See* § 36.117(b)(2).

111. *See* § 36.117(d)(3).

For instance, even if a water well is exempt for oil and gas purposes, the owner of the well still must ensure that the well is (1) “registered in accordance with rules promulgated by the district” and (2) “equipped and maintained so as to conform to the district’s rules requiring installation of casing, pipe, and fittings to prevent the escape of groundwater from a groundwater reservoir to any reservoir not containing groundwater and to prevent the pollution or harmful alteration of the character of the water in any groundwater reservoir.”<sup>112</sup> The driller of an exempt oil and gas water well must also file a drilling log with the GCD.<sup>113</sup>

Groundwater withdrawn from any type of exempt well and subsequently transported outside the boundaries of the GCD is subject to any applicable production and export fees implemented by the GCD under § 36.122 and § 36.205.<sup>114</sup> This could be an issue in shale development, where groundwater production may have to occur in one GCD and be transported to producing areas located in another, although within the same lease or field. Export fees, however, are typically minor in comparison to the operator’s investment in the oil and gas operation.

More importantly, a GCD can require the owner or operator of a well that is exempt under § 36.117(b)(2)-(3) “to report groundwater withdrawals using reasonable and appropriate reporting methods and frequency.”<sup>115</sup> This means a GCD can require owners or operators of exempt oil and gas water wells or exempt coal mining water wells to file groundwater production reports.<sup>116</sup> As explained above, a GCD cannot require this of exempt domestic and livestock wells.<sup>117</sup>

This GCD authority is important when considering overall state water planning, a significant part of which is the desired future conditions process. It allows GCDs to monitor production from exempt oil and gas water wells and to account for that production in its planning and permitting activities. Estimates of total exempt use, however, will never be accurate unless and until GCDs are authorized to require production reports from owners of exempt domestic and livestock wells. The practicalities of obtaining production reports from all the state’s domestic and livestock wells probably renders complete accuracy unrealistic. But there is room for improvement. As explained previously, the timing of when a GCD considers estimates of exempt use—at the permitting stage, rather than the time of adopting a DFC—may be too late in the process. GCDs may desire to consider exempt use at the DFC stage, and likely will want reports from exempt oil and gas wells to do it.

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112. § 36.117(h).

113. § 36.117(i).

114. § 36.117(k).

115. *Id.* § 36.111(b) (West 2008).

116. *See* § 36.117(b).

117. *See* § 36.111(b).

## IV. CONCLUSION

Given the many water issues facing frac operators, it should come as no surprise that developing a water management strategy is critical. Management strategies will be region dependent and should be developed early enough so they can be accommodated in lease agreements, if necessary. Management strategies should also contain sufficient contingencies to deal with the fast changing water climate, a climate that may see caps on production and attempts by GCDs to apply those caps to groundwater production from exempt oil and gas water wells.

This Article concludes that a GCD cannot restrict production from an exempt oil and gas water well below what is reasonably necessary to supply a rig actively drilling or exploring for oil and gas on the same lease or field as the water well. None of the arguments presented here, however, have been tested in the courts. Until they are, or unless the legislature resolves them through new legislation, the arguments will remain uncertain. One thing is more certain: Today's water climate makes it likely that GCDs will require monitoring and reporting of production from exempt oil and gas water wells, something they are clearly authorized to do. What they do with such information remains to be seen.