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On Regulating New Mexico's Domestic Wells

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ABSTRACT

Hydrologic impacts and equitable water management dictate that the state engineer should require water rights for new domestic wells in Critical Management Areas (CMAs) and on water-short interstate streams. A domestic well permit in New Mexico allows homeowners to acquire water but creates no water right. Balleau and Silver estimate that in 2000 the cumulative effect of 136,800 wells reduced flows in interstate streams by 11,780 acre-feet, and future wells will come in increasing numbers. The problem is that on water-short interstate streams and in CMAs owners of valid water rights, not domestic well owners, cover water shortages. Therefore, a water-right-ownership requirement for new domestic wells in these areas is proposed here to offset their consumption. Moreover, New Mexico should outlaw double dipping (that is, domestic wells for housing developments on land from which water rights have been severed), require annual domestic permit renewal, and take other corrective actions. This author does not suggest universal metering or granting the State Engineer unconstrained authority to deny domestic permits.

INTRODUCTION

It is wondrously easy in New Mexico to start a conversation about domestic wells. Questioning, "should any restrictions be put on them?" is usually enough. The water code has always allowed citizens to construct a well for domestic use or stock water, wherever and whenever they wanted. All it took in any basin under the jurisdiction of the state engineer was a five-dollar permit, which the law required him to grant. We have now started to change that for good and valid hydrologic and regulatory reasons. How far we will go, or should go, with new restrictions is the principal question.

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The fundamental issue is that here in New Mexico, as in much of the West, water rights and their priority dates (sometimes called "paper water") are the measure of the right to get and use "wet" water.[1] Domestic well permits, however, allow one to acquire water for homes but create no water right, no priority date, nor any record at all within the priority system. When there were not many people, or many wells, this grant was both practical and hydrologically unstressful.

The problem today, and in the future, with this concept is that the number of domestic wells has increased to the point that they have a real effect on the state's basic water rights system, and that effect will continue to increase. Balleau and Silver, in "Hydrology and Administration of Domestic Wells in New Mexico," in this issue,[2] estimate that in 2000 there were 136,800 domestic wells in the state, and that by 2040 there will be 203,000. The Office of the State Engineer (OSE) has said that in 2003 it had approximately 7000 new applications for such wells, and in 2004 that number rose to 8,000. Balleau and Silver estimate that in 2000 the cumulative effect of domestic wells reduced total flows in interstate streams by 11,780 acre-feet. They predict that in 2040 the interstate streams reduction will be 20,310 acre-feet.[3] That means in water-short years the volume of water required for delivery downstream by our several interstate compacts, or for endangered species per court orders, must come from other peoples' water rights, usually in the form of irrigation ditches prematurely dry.

Balleau's and Silver's article provides an informative and useful analysis of New Mexico's current domestic well situation state-wide. They have compiled a variety of pertinent data and information, which is a service to the concerned community. In particular, their creation of the statewide MODFLOW model provides a useful tool for dealing with broad water management issues.

However, after Balleau and Silver summarize the situation well with respect to many of the physical realities, I disagree with their fundamental management conclusion that nothing needs to be done to establish additional controls over domestic wells. They propose letting things continue as they are with no effective state regulation. In their

1. In theory, people with the earliest-dated water rights in a basin get to divert and use their entire volumes of water, as specified in each of the respective rights, before people with later priorities may divert water.

2. W. Peter Balleau & Steven E. Silver, *Hydrology and Administration of Domestic Wells in New Mexico*, 45 NAT. RESOURCES J. 807 (2005). *See also* Authors' Response, *id.* at 848.

3. To give the reader a sense of scale, 20,000 acre-feet is approximately equivalent to the consumptive water right required to irrigate 10,000 acres. Alternatively, at typical domestic well pumping rates of one-third acre-foot per household per year, that amount of water will support 60,000 households.

view, if people cannot drill their own wells they will use community wells for most of their water anyway. That is an interesting argument, because people switching from domestic wells to community wells would thereby switch from water now exempt from water-right priority to that which comes under the state's priority system. The purpose of requiring water rights for domestic wells in high-impact environments is not to limit the number of private wells but to make the State's fundamental water law, that of water-right priority, more efficient and more equitable.

Balleau and Silver also find support in their observations that domestic well owners tend to use less water than municipal system customers, that private wells provide water cheaper, and that water-table drawdown caused solely by domestics is nowhere in the state enough to preclude even greater local domestic well density. Take these observations one at a time. Do residences served by domestic wells use less water than municipal residences? Possibly they do use somewhat less, though the data are subject to interpretation. Households supplied by domestic wells are typically quite different from those in traditional residential districts from which much of the municipal data are derived. Among the differences is a smaller likelihood that a lawn will surround a rural home, as they do so many suburban homes. Do private wells provide water cheaper? Possibly they do. It is true that such cost items as municipal water treatment, sewers, wastewater treatment, metering, and water rights acquisition do not apply to domestic well systems. Finally, it probably is true that water-table drawdown due solely to domestic wells is nowhere great enough to preclude adding even more domestic wells—if, that is, there are no nearby large wells to join in creating drawdown. It is noteworthy that a small amount of drawdown from many domestic wells over a large area means they have removed a substantial amount of water. In locations where drawdown is great enough to be worrisome, it is usually because small wells add to the effects of the large wells. Isolating the domestic-well effects, as if they occur in a vacuum, is misleading.

PRESENT DOMESTIC WELL REGULATION

A person desiring a domestic well must obtain a permit from the OSE before drilling anywhere in the state.[4] Upon paying a modest fee,

4. Until very recently, the state engineer had not declared groundwater basins under his jurisdiction in scattered areas comprising about 9.5 percent of the state, mostly in the northeast, the central High Plains, and the southwest. State Engineer John D'Antonio changed that on September 23, 2005, by "declaring" all of these areas.

applicants for all but a few small areas of the state will receive well permits allowing up to three acre-feet of water per year (nearly a million gallons) for domestic use, including gardens. In a few areas suffering heavy pumping, however, permitted annual production will be less than three acre-feet, and other requirements may apply as discussed below.

At sites where three acre-feet of groundwater production is permitted, a well may serve more than one household (sometimes up to six), but its annual limit remains three acre-feet. Wells in the state serving multiple houses must be identified to the OSE. Such wells must be metered and the meter readings sent to the OSE on a schedule set by that office.

Justification for limiting production to less than three acre-feet in nearly all cases is to implement either a decision by a court or an order issued by the state engineer that affects pumping. Such decisions usually relate to water shortage. Court decisions limit domestic well production in the Pojoaque area and the Gila-San Francisco Basin. OSE orders limit domestic production in part of the Estancia Basin and in the small La Luz-Fresnal area (south of Tularosa).

CRITICAL MANAGEMENT AREAS

The state engineer in recent years has designated two areas to be Critical Management Areas (CMAs). A CMA is an area requiring special care to assure that heavy groundwater pumping does not shorten the published management life of the basin—a life span upon which resident water users depend. The two areas are the North Albuquerque Acres suburb of northeast Albuquerque and parts of the Estancia Valley. In North Albuquerque Acres, high-capacity city wells pump most of the water; in the Estancia Valley, irrigation wells are the heavy producers. In both areas, large numbers of domestic wells add fractionally to cumulative impacts on the aquifers.

CMA designation can result in a variety of special water regulations. Domestic permits in the Albuquerque CMA require only metering. Permits in the Estancia Valley CMA limit pumping to one-half acre-foot per home and require metering. Such limitation locally replaces the statewide specification of three acre-feet per year. However, as Balleau and Silver point out, the consensus among technical people is that most existing domestic wells have never used more than this smaller amount. Therefore, such restrictions are ineffective.

REQUIRING WATER RIGHTS FOR DOMESTIC WELLS

Domestic wells in CMAs and near water-short interstate streams should require water rights. One could make a philosophical argument that the state abrogated its responsibility to protect citizens' property rights (water rights) by passing the law placing domestic well water outside of the state's water rights priority system. On a more serious and practical level, one could even argue that the detrimental effects of domestic wells on valid water rights holders could be judged under the law as uncompensated takings. For example, if delivery of water under an interstate compact or under the Endangered Species Act shorted senior water right owners. If that were held in court to be true, all domestic wells causing detriment presumably would need corrective action, not just action proposed herein for new well permits.

New Mexico should require water rights for domestic wells in CMAs and on floodplains of water-short interstate streams. As noted above, the cumulative impacts of all pumping threaten to prevent a CMA from reaching its planned lifetime. Of course, large wells producing irrigation or municipal water cause the greatest part of the threat. However, pursuant to New Mexico's priority system, solid water rights will back these wells. On the other hand, domestic wells in the CMA will pump a much smaller portion of the total but, given the present law, their portion will have no basis in water rights. Under these conditions, in a basin that fails to reach its published lifetime, the meaning of the terms "water right" and "priority" have limited usefulness and the effects on those claiming senior water rights could be costly. I suggest that new legislation requiring a water right for domestic well water in CMAs is the proper way to correct this problem.

Similarly, one can argue that on interstate streams that experience water shortages, dense arrays of domestic wells consume water with no accounting to the water rights and priority systems. New Mexico's Middle and Lower Rio Grande reaches, for example, already have tens of thousands of domestic wells and thousands more are added each year. In eight interstate-stream compacts,[5] the state has agreed to specific divisions of water. On nearly all of these streams, it has committed to deliver annually specified volumes of water to downstream states.

However, owing to water shortages, it has failed in past years to deliver several times on the Rio Grande and the Pecos River. In 1956, on

5. New Mexico's interstate-stream compacts affect the Canadian River, Colorado River, Upper Colorado River Basin, La Plata River, Animas-La Plata Project, Pecos River, Amended Costilla Creek, and Rio Grande.

the Rio Grande, New Mexico was more than 500,000 acre-feet in debt on its deliveries below Elephant Butte Dam even though the Rio Grande Compact strictly limits such debt to 200,000 acre-feet. Texas owns about one-third of such deliveries, so it sued. Its lawsuit became moot when the end of the drought in the 1950s and completion of the Lowflow Conveyance Channel below San Acacia allowed New Mexico to reduce its debt to the legal limit. In 1988, on the Pecos River, the U.S. Supreme Court, in its Amended Decree, stated that New Mexico had failed to meet its past water delivery obligations to Texas. The Court fined the state $14 million and, by ordering that New Mexico never short the downstream users again, forced the state to commit many tens of millions of dollars to buy up land and water rights from willing sellers to assure compliance.

Although domestic wells caused neither of these earlier shortfalls, demands on the waters of both rivers have increased markedly since the time of past shortages. Surging domestic wells, discussed herein, add to all other demands on the rivers. Both rivers now operate on the legal edge of their compact commitments. The current drought diminished New Mexico's water credits at Elephant Butte Dam from 265,000 acre-feet in 2002 to 35,600 acre-feet in January 2005.[6] A comprehensive probabilistic study on the Rio Grande concludes that, "On average, *the historically available water supply is not adequate* (including San Juan-Chama Project water and groundwater withdrawals) to meet the present demands in the Middle Rio Grande region."[7] In addition, "[g]iven the historic variability of water budget terms, under Year 2000 conditions Rio Grande Compact *debit conditions are expected to occur 3 out of every 5 years.*"[8] Finally, "*[u]nder conditions of increased water use in any sector, a reduction of water use from other sectors is required* to avoid increasing the Rio Grande Compact debit."[9]

In water-short years, the burden of attempting to deliver wet water falls solely on the holders of valid water rights (both surface water and ground water), and not at all on the domestic well permittees. I propose that the solution to this inequity is to require valid water rights to be acquired as a precondition for getting a domestic well permit anywhere on the modern geological floodplain[10] of each interstate

6. REPORT OF THE RIO GRANDE COMPACT COMMISSION TO THE GOVERNORS OF COLORADO, NEW MEXICO AND TEXAS 20 (2002, 2004).

7. S.S. PAPADOPULOS & ASSOCS., INC., MIDDLE RIO GRANDE WATER SUPPLY STUDY, PHASE 3, ES-7 (2004).

8. *Id.*

9. *Id.*

10. The "geological floodplain" of a river or stream, wherever one exists, is an easily identified geomorphic feature. It is the flat swath of valley floor that the river's meanders

stream in New Mexico where compact deliveries have failed, or are anticipated to soon fail.[11] To cover certain special cases such wells might also have to be more than 1,000 feet (or other explicit distance) from the bank of the river.

NO DOUBLE DIPPING

Prohibiting housing developments from using domestic wells on land from which previous owners have sold water rights ought to be an overriding concern. As demands for water increase in our river valleys, and as growing municipalities purchase more rights, farmlands from which water rights have been sold off become more common. This creates a temptation to plant houses on the land and then provide water to them from domestic wells, whose permits the OSE must grant under current law. This practice, not at all uncommon on the floodplain of the Rio Grande, takes imprudent advantage of two characteristics of present law: first, the obligatory approval of domestic well applications under the law, and second, the fact that these domestic well permits are issued without any consideration of water availability or rights priorities within the water basin.

This arrangement of course does precisely what should be recognizable to all as a direct violation of the spirit of New Mexico water law. It creates two direct consumptive uses of wet water associated with a single piece of land, which originally had only one right attached to it, probably for irrigation. It effectively doubles the wet water use rate associated with that plot. Thus, double dipping makes a farce of our fundamental water-rights priority system.

In the water-short environments of New Mexico's river valleys it seems passing strange that we have not, in the five years that advocates

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can and do sweep across when unconstrained by levees and other man-made control devices. Floodplains are bounded on each side by upward slopes, either gentle or steep, to higher terrain, and deposits, thin or thick, of unconsolidated river alluvium, commonly underlie the floodplains themselves. Many river reaches have no floodplain beyond their banks, but where there is a floodplain and good water there usually will be farming, because the soils are rich and that is where the water is.

11. ALLETTA BELIN, CONSUELO BOKUM & FRANK TITUS, TAKING CHARGE OF OUR WATER DESTINY: A WATER MANAGEMENT POLICY GUIDE FOR NEW MEXICO IN THE 21ST CENTURY (2002). Various attempts have been made in the past to identify geographically where water rights should be mandatory as a condition for groundwater use. For example, I am told that the OSE in the 2005 New Mexico legislature favored a zone within two miles of stream channels. Additionally, Alletta Belin, Consuelo Bokum, and I suggested in 2002 that, along with CMAs, undefined "Stressed Management Areas" be identified for monitoring. However, I now think concentrating on CMAs and the floodplains of water-stressed interstate streams is the most effective and equitable solution.

have been trying in annual legislatures to bring domestic well regulation into modern times, even mentioned this flagrant double dipping in any of the many bills put into legislative hoppers. A key reason, reportedly, for ignoring this travesty is that addressing it would automatically doom any such bill. However, have we served the state well by ignoring it? After all, we have not managed to pass any of those more superficial substitute bills. Why not focus on the issue that is of greatest importance. Whose interests have we served by ignoring the problem of double dipping?

OTHER USEFUL ACTIONS & CONCEPTS

Although the changes recommended above would make New Mexico's priority system fairer and more stable in coming years, it will not be easy to meet our internal and external commitments for water resources in a future with increasing demand. Below are some additional concepts that can ease some of the inevitable stresses. None of them concern water-rights management.

Fee for Renewal

Requiring a modest fee for annual renewal of domestic well permits will help assure that the state has up-to-date records of all active domestic water permits. My sense is that data indicating whether a given well is active are non-existent for most wells. Perhaps of greater importance, it will improve the chances that the OSE will have a chance to establish a record of proper closure and abandonment for wells no longer in use. The annual fee, though small, will defray record-keeping costs.

Well Production

The state engineer, with good justification, has assumed authority to reduce well production below three acre-feet per year within a CMA. However, the legislature should confirm this authority.

Well Construction and Aquifer Testing

Balleau and Silver are generally correct regarding their recommendations that wells be drilled, tested, and equipped to professional standards. I agree that in most terrains that support domestic wells, involving professionals would increase the number of

successful wells, provide much more useful test information, and result in fewer well failures.

TWO ILL-ADVISED PROPOSALS

Universal domestic well metering and blanket authority for the state engineer to deny domestic permits should be disapproved. The first is far too expensive for its limited benefits, and the second gives the State Engineer too much undefined authority.

Universal Domestic Well Metering

I do not support universal domestic well metering. There has been a frequent call for meters on all domestic wells, and for well owners to report cumulative pumpage to the OSE. On the surface, it is beguilingly simple and seems to offer much useful data for little effort. In fact, this very procedure has long been at work. Domestic wells that pump water for more than one household are required to supply the OSE with production data. Therein lays one reason I question the justification for metering all wells. I do not know what percentage of wells supply multiple households. However, from the domestic well density with which I am familiar in the Albuquerque area and the east slope of the neighboring mountains, the multiple-household arrangement seems common enough that the OSE has access to considerable data on pumpage. Perhaps the OSE has enough data that a massive reporting from all wells is unnecessary.

Requiring individual meters on all wells would be very costly. In this, I concur with Balleau and Silver, though I have not critically evaluated their specific cost estimate. In addition, once meters are installed, there is the question of maintenance and of reporting pumpage to the authorities. There is an enormous amount of data on the cost of metering of municipal residents. Nevertheless, unlike municipal metering, the cost of meters on private wells cannot be justified by any product that well owners receive. Its justification must be simply from the value of the data collected. This cost-to-benefit ratio seems much too high. Balleau and Silver, reaching a similar conclusion, also question the reliability of self-reported data. Additionally, monitoring and inspecting meters would likely be rare, even non-existent. Finally, the cost to the OSE of accepting, collating, checking, storing, analyzing, and reporting

volunteered data from well owners seems high when placed against its usefulness.[12]

Denial of a Domestic Well Permit

I do not support authorizing the OSE to deny domestic well permits, excepting perhaps for unusual or dangerous conditions such as localized groundwater contamination. In general, in any areas where water-right offsets are required, if a well owner can obtain a water right in open competition, then the OSE should issue a permit. Of course, where rights are not required, which would be the great majority of the state, the question is moot.

Some have proposed that to stop urban sprawl the OSE should deny domestic well permits in CMAs or perhaps other areas. Land use laws and regulations properly control land use issues, and since these are usually within the arena of local regulation, they should analyze and decide them there. The state engineer in the past has indicated that the OSE will support local governments when they have regulations controlling land development. I agree.

IMPACT OF REGULATIONS

The changes in domestic well permit processes proposed herein affect only very limited geographical parts of the state. Only if one is interested in parts of the Estancia Valley, or the floodplains of the Rio Grande, or limited parts of the Pecos River might the acquisition of a permit be more complex. For all the rest of the state's landscape, persons wanting a domestic well need only apply and the OSE will issue a permit.

REPLY TO BALLEAU'S AND SILVER'S RESPONSE

Balleau and Silver will say in their response[13] to the principal proposal in this article, "There is no historical example of Compact shortages being covered by valid rights in the Middle Rio Grande or in other interstate streams of New Mexico, because priority enforcement is unknown in the interstate streams of New Mexico. Domestic wells,

12. *Id.* at 29–30. When Belin, Bokum, and I wrote *Taking Charge of Our Water Destiny*, *id.*, in 2002, we recommended universal metering. Suffice it to say here that on this one matter, I have changed my mind. I no longer think the benefits of metering all domestic wells justify the costs. This is my own conclusion, I am sure not totally shared by Belin and Bokum, and perhaps not shared at all.

13. Balleau & Silver, *supra* note 2, at 848.

therefore, are not penalizing other rights. Managing the large riparian depletion would yield a better payoff in terms of Compact deliveries."[14] I suggest, however, that when irrigation supply ditches are dry late in a growing season because water must stay in the river for compact delivery or under court-order to preserve endangered species, farmers may rightly claim that their early rights are in effect covering for water that should be supplied from later priority dates. After all, no municipal, industrial, or domestic wells are ever shut down for this reason.

Balleau's and Silver's main argument seems to be that because domestic users individually create very small effects, and because even their collective effects are smaller than the collective effects of the more prominent users such as agriculture and municipalities, the domestic users should not have to endure the nuisance of complying with the state's water-rights priority system.

The underlying problem may be that nowhere in our water-management system is there an accounting of domestic well production. When society deals with any commodity that is carefully counted, no one ever argues that an illegal taking should be tolerated because it is small.

They advance various arguments, some abstruse, against requiring water-right accountability for domestic wells and they elaborate on several alternatives to it. They bring into the discussion various facets of water management unrelated to domestic wells that might mitigate water shortages. Water resources systems are highly complex, and I certainly agree that orderly and detailed consideration of some of the complexities would be productive for water-management planning. However, the state's withdrawal of the now-burgeoning set of domestic wells from water-right accountability should be corrected in areas where their impacts are inequitable.

It is my hope that the changes proposed herein will mainly be judged in the context of their support for New Mexico's priority system. I believe in reinstating the relevance of priority, modernizing it, and assuring that it is a tool for fairness and justice in future negotiations over water.

14. *Id.* at 849.