LEGAL AND INSTITUTIONAL IMPEDIMENTS TO INTEGRATED USE IN MANAGEMENT OF SURFACE AND GROUNDWATER

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INTRODUCTION

The Tenth Amendment of the Constitution of the United States provides that, "the powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people". The federal government regulates water quality and, to a lesser degree, water use under power granted by other constitutional provisions. However, since the Constitution neither delegates the power to determine property rights to the United States, nor does it prohibit the states from determining such rights, the states therefore by default are the principal architects of property rights in our federal form of government.

> "Man has coped with the complexity of water by trying to compartmentalize it. The partition committed by hydrologists-into groundwater, soil water, surface water, for instance-is as nothing compared with that which has been promulgated by the legal profession, which has on occasion borrowed from the criminal code to term some waters "fugitive" and others, a "common enemy." The legal classification of water includes "percolating waters," "defined underground streams," "underflow of surface streams," "water courses," and "diffuse surface waters"; all these waters are actually interrelated and interdependent, yet in many jurisdictions unrelated water rights rest upon this classification. (Thomas and Leopold, page 1003).

At bottom, the issue of property rights in any type of water must be governed by two general and fundamental maxims of law: (1) the estate and dominion of the owner of lands extend from the sky to the lowest depths of the earth; and (2) every person shall so use his or her own land as to not injure his or her neighbor (*Miller v. Black Rock Springs Company*, 40 S.E. at page 28). Difficulty arises from the fact that these two maxims conflict directly in many instances involving competing uses of water. Resolution of these basic legal premises continues to haunt the courts and the legislatures.

THE LEGAL FRAMEWORK

> "As long ago as the Institutes of Justinian, running waters, like the air and the sea , were *res communes*-things common to all and property of none. Such was the doctrine spread by civil-law commentators and embodied in the Napoleonic Code and in Spanish Law. This conception passed into the common law. From these sources, but largely from civil-law sources, the inquisitive and powerful minds of Chancellor Kent and Mr. Justice Story drew in generating the basic doctrines of American water law (*United States v. Gerlach Live Stock Co.*, pages 744-745).

State common law[1] and statutory law[2] define four regimes in relation to water rights: (1) Streams, lakes, and similar related waters; (2) Diffuse surface waters; (3) Percolating (non-stream) underground water; and, (4) Atmospheric water (Beck, Section 4.01, Vol. 1, pages 68 to 69.) As to streams, lakes, similar and related waters, two different doctrines have evolved, basically determined by whether the states lies in the east or in the west. In the east, the riparian doctrine predominates. Under the riparian doctrine, water rights are based on the ownership of the soil either abutting or underlying the body of water (*Ibid*., page 70). Riparianism focuses mainly upon "reasonable use" by allowing continued use by down stream owners.

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[1]Common law refers to rules made by judges in adjudicating individual cases.

[2]Statutory law refers to rules enacted by legislatures.

In the west, however, the prior appropriation doctrine dominates the law. Prior appropriation means that the first to appropriate has the better right, subject to many limitations (*Ibid.*). The prior appropriation doctrine today focuses mainly upon "beneficial use" (*Ibid.*).

As to diffuse surface waters, two extreme doctrines first appeared in the law: common enemy and natural flow. Under the common enemy approach, the land owner was free to rid himself of water in any possible way, while under the natural flow approach, the land owner virtually could do nothing (*Ibid.*, page 71). Most jurisdictions ultimately opted for some variety of a reasonable use rule (*Ibid.*).

Courts understandably struggle with groundwater issues. Four potential general legal rules for groundwater exist in the United States: (1) the absolute dominion rule; (2) the reasonable use rule; ; and, (3) the prior appropriation doctrine (4) the correlative rights rule (Beck, section 20.04, vol. 3, page 68). Under the absolute dominion rule, the landowner may extract water for any purpose and use it for any purpose at any location (*Ibid.*). This rule predominated in the nineteen century and earlier twentieth century. It appears in many cases to derive from ignorance of the science of groundwater.

> "Water, whether moving or motionless in the earth, is not, in the eye of the law, distinct from the earth. The laws of its existence and progress, while there, are not uniform, and can not be known and regulated. It rises to great heights, and moves collaterally, by influences beyond our apprehension. These influences are so secret, changeable, and uncontrollable, we can not subject them to the regulations of law, nor build upon them a system of rules, as has been done with streams upon the surface. Priority of enjoyment does not, in like case, abridge the natural rights of adjoining proprietors."

(*Roath v. Driscoll*, 20 Conn. 533, 52 Am. Dec. 352 (1850), cited in *Miller v. Black Rock Spring Company*, 99 Va. 747, 40 S.E. 27, 86 Am. St. Rep. 924 (1901)).

Early courts mainly relied on the well-known principle *cujus est solum*, holding that a land owner's domain reaches everything from the depths below to the heavens above (*Ibid.*, page 72). As technology and the ability to show interference with groundwater advance, many courts modify their approach to reflect the new knowledge (*Ibid.*). Other courts leave the change to legislatures which have acted slowly or not at all (*Ibid.*). The case law, particularly older decisions, reflect a lack of knowledge of hydrology and the interconnectedness of groundwater and surface water. Later courts appear reluctant to incorporate new knowledge of water processes.

The reasonable use rule is the rule most constricting to landowners (Beck, section 20.04, vol. 3, page 69). Water use under this rule is limited to the premises overlying the aquifer for beneficial purposes incidental to enjoyment of that land (*Ibid.*).

The prior appropriation doctrine establishes temporal priority among water claimants (*Ibid.*). Under the correlative rights rule, mostly attributed to California, landowners hold proportionate proprietary shares in the aquifer, with the largest landowner having the largest share of the aquifer because that landowner has the largest share of the land above the aquifer (Beck, section 20.04, vol. 3, page 68).

VIRGINIA SURFACE WATER AND GROUNDWATER PROPERTY RIGHT RULES

Virginia Surface Water Law

Common Law

In Virginia, the owner of property adjoining water flowing in a defined stream has an equal right to the reasonable use of the water for every useful purpose to which it can be applied, whether it be domestic, agricultural or manufacturing (*Town of Purceville v. Potts*, 19 S.E.2d at page 702, citing *Minor on Real Property*, 2d Ed.). However, the water must continue to run, after such use, without material diminution or alteration and without pollution (*Ibid.*). One may not diminish it quantity materially or exhaust it (except perhaps for domestic purposes and the watering of cattle) to the prejudice of the lower proprietors, unless he has acquired a right to do so by grant prescription or license (*Ibid.*). The

riparian owner may not divert the water for use beyond his riparian land, and any such diversion and use is an infringement on the rights of the lower riparian proprietors who are thereby deprived of the flow (*Ibid.*).

Statutory Law

In 1989 the Virginia legislature created statutory authority for the formation of surface water management areas (*Va. Code Ann.* § 62.1-242, et seq.). The statute relies mainly upon permits for withdrawals in surface water management areas. Surface water rights remain unchanged in areas not designated surface water management areas.

The legislature specifically denied altering or authorizing any alteration of any existing riparian rights except as set forth in permits issued pursuant to the law (*Va. Code Ann.* § 62.1-253). The conditions in the permit altering riparian rights can only be enforced during times when low stream flows and a potential for low stream flows result in a declaration by the Department of Environmental Quality.

Virginia Groundwater Property Rights

Common Law

Virginia classifies underground water as: (a) Streams or bodies of water existing and known in well defined channels; or, (b) "Percolating waters", which are waters which ooze, seep, or filter through the soil beneath the surface, without a defined channel, or in a course that is unknown and not discoverable from surface indication without excavation for that purpose (*Clinchfield Coal Corporation v. Compton*, 139 S.E. at page 311). For underground water flows in a stream with a well defined channel, and where the existing location and the course is known or knowable from external facts, the same riparian rules applying to surface streams apply to the underground water flow (*Ibid.*).

"The distinction between rights in surface and subterraneous streams is not founded on the fact of their location above or below ground, but on the fact of the knowledge, actual or acquirable, of their existence, location, and course, and the courts endeavor, so far is practicable, to apply the rules of law applicable the surface streams or bodies of water exist in well defined channels to the like streams or bodies underground." (*Wheelock v. Jacobs*, 27 R.C.L., page 1170, section 90.)

The Virginia Supreme Court purports to have never elected either the English rule or the American rule (*Clinchfield Coal Corporation v. Compton*, 139 S.E. at page 313). However, the Virginia Supreme Court in *Miller v. Black Rock Spring Company*, 99 Va. 747, 40 S.E. 27, 86 Am. St. Rep. 924 (1901) favorably cites the English Rule of the absolute ownership of percolating water. The question of whether liability attaches on the defendant if cutting off the supply of percolating water was attributable to malice or negligence on the part of the defendant was not before the court. The facts of the case therefore did not necessitate a choice between English and the American Rule, as the interception of the water was warranted by either (*Clinchfield Coal Corporation v. Compton*, page 313.). Nether did the case of *Heninger v. McGinnis*, 131 Va. 76, 108 S.E. 671 (1921) involve the doctrine of "reasonable use" (*Ibid.*). In the *Compton* case, the Virginia Supreme Court again skirted the issue of choosing between the English rule and the American rule by holding the coal company was making a legitimate use of the land for mining purposes, even under the "reasonable use" rule. Therefore the court was not called upon to make a decision (*Ibid.*). The court there explicitly stated that, "if the question shall again come before this court, we shall feel free to consider it de novo [as if it were never addressed]" (*Ibid.*). The common law in Virginia on groundwater rights begs more questions than the cases answer.

Statutory Law

Arguably, however the Virginia General Assembly provides guidance to the courts. No Virginia court has published an opinion directly on Virginia groundwater law since 1927. Interestingly, neither of the two Virginia statutes enacted thus far applying to groundwater contain a statement disavowing alteration of groundwater rights. For surface water, the legislature preserves riparian rights in surface waters, subject to strictly tailored circumstances (*Va. Code Ann.* § 62.1-253).

The Groundwater Act of 1973 represents the Virginia Legislature's first attempt at drawing the boundaries of groundwater rights. The Legislature declared it the policy of the Commonwealth of Virginia to "recognize and declare that the right to reasonable control of all groundwater resources within this Commonwealth belongs to the public and in order to conserve, protect and beneficially utilize the groundwater of this Commonwealth and to ensure the preservation of the public welfare, safety and health, it is essential that provisions be made for control of groundwater resources" (*Va. Code Ann.* § 62.1-44.84 (repealed)).

The statute allowed what was then the State Water Control Board to designate certain areas as groundwater management areas (*Va. Code Ann.* § 62.1-44.96 (repealed)). Except for exempted withdrawals, any groundwater withdrawals in groundwater management areas had to be made pursuant to a permit or certificate of groundwater rights (*Va. Code Ann.* § 62.1-44.97 (repealed)). The Act required a permit for construction, alteration, rehabilitation or extension of any well within a groundwater management area (*Va. Code Ann.* § 62.1-44.101:1 (repealed)). No statutory restrictions existed for withdrawals of groundwater in areas not designated as a groundwater management area.

In 1992, the Virginia Legislature repealed the Groundwater Act of 1973 and replaced it with the Groundwater Management Act of 1992. In the findings and purpose declaration, the General Assembly expounded upon the policies stated in the Groundwater Act of 1973. "The General Assembly hereby determines and finds that, pursuant to the Groundwater Act of 1973, the continued, unrestricted usage of groundwater is contributing and will contribute to pollution and shortage of groundwater, thereby jeopardizing the public welfare, safety and health. It is the purpose of this Act to recognize and declare the right to reasonable control of all groundwater resources within this Commonwealth belongs to the public and that in order to conserve, protect and beneficially utilize the groundwater of the Commonwealth and to ensure the public welfare, safety and health, provision of management and control of groundwater resources in essential" (*Va. Code Ann.* § 62.1-254).

The 1992 Act again relies upon groundwater management areas for regulation and essentially tracks the former statute. Persons outside of a groundwater management area need not apply for a permit, but can be required to provide information to the Department of Environmental Quality. A *de minimis* exception for groundwater withdrawals of less than 300,000 gallons per month survived the repeal and is included in the 1992 Act. The statute, along with the regulations, provides detailed criteria for issuance of permits and requires water conservation and management plans.

The 1992 Act changes little in the general philosophy of the 1973 Act. Given the timing of the repeal and enactment, and the parallel provisions enacted in 1989 for surface water, the author speculates that the 1992 Act attempts to bring uniformity to Virginia statutory law for surface and groundwater. The courts may take notice of that possible purpose.

Although the statute explicitly contains no restrictions on groundwater use outside of groundwater management areas, the stated policy of the Act indicates that the legislature has declared "reasonable use" as the rule. Since no Virginia court has thus far grappled with the issue of whether such legislation has declared groundwater policy, the details remain unclear.

Virginia Law - subjacent and lateral support

One stick in the bundle property rights inherent in the ownership of the land is the right to both lateral and subjacent support (*Couch v. Clinchfield Coal Corporation*, 139 S.E. at page 315). The owner of adjoining land is liable for any damages occasioned by his failure to furnish such lateral and subjacent support. (*Ibid.*). Therefore, the owner of the land is not liable for interception or diversion of underground percolating water when the use of his land causes the loss of subjacent or lateral support on his own land, thus intercepting or interfering with the use of underground percolating water (*Ibid.*, pages 315-316).

However, if actions by Landowner A, occurring on Landowner A's property, cause the loss of lateral or subjacent support on Landowner A's property, a different result entails. If Landowner B's percolating water supply is intercepted or diverted because of this loss of support, Landowner A must compensate Landowner B for damages (*Ibid.*).

The rule expounded by the court therefore relies upon a mere fortuity in allocating liability . The results appear coherent in a rough, "geographic" sense (relying upon where the loss of support occurs). However, in either case, the water supply is impeded by the identical actions of a neighbor. Common sense dictates a uniform result in both cases.

LACK OF CLARITY AND CONSISTENCY IMPEDES INTEGRATED USE IN MANAGEMENT

The tangled web of confusion woven by the courts and illustrated here by reference to the law of the Commonwealth of Virginia fails to provide incentives to integrate use and management of surface and groundwater. For example, in a jurisdiction having the English rule for groundwater use, a landowner may avoid the prohibitions of the riparian rule for surface water by drilling a well and using groundwater instead. His use may impede his neighbor's use of water no less than had he diverted the water from the surface. However, the inconsistent and incoherent legal rules allow the unfettered use of groundwater and prohibit the unfettered use of surface water.

Not only would clarification and unification of rights promote integrated use and management, but efficiency would result also. Pareto-efficiency is defined as a situation in which it is impossible to make anyone better off without simultaneously making at least one person worse off by trading resources (Randall, page 104). All possibilities for voluntary trades to reallocate resources or redistribute commodities more efficiently have been exhausted (*Ibid.*). Pareto-efficiency requires nonattenuated property rights (*Ibid.*, page 157). A set of nonattenuated property rights is: (1) completely specified, so that it may serve as a perfect system of information about property rights and the penalties for violation; (2) exclusive, so that all rewards and penalties resulting from an action accrued directly to the owner; (3) transferable, so that rights may gravitate to the highest-value use; and, (4) enforceable and completely enforced (*Ibid.*, pages 157-158).

Although Posner and others claim that the common law is economically efficient while statute law is more concerned with redistribution towards special interests (See e.g., Posner, particularly chapters 13 and 19), statutory law must step in to fill the void left by common law in defining property rights in water. Courts rely on the doctrine of *stare decisis* ("let the decision stand"). Common law consists of a constant building upon prior cases. Court rarely overturn prior decisions. This process of building upon prior case law proves inefficient and illogical with respect to property rights in water, particularly groundwater. Scientific knowledge now far exceeds customary legal reasoning. Legislature delineation and clarification of the property rights puzzle left by the courts in the case of groundwater will lead to both efficiency and integrated use of surface and ground waters.

CONCLUSION

Water habitually does not subscribe to our efforts at compartmentalization according to special interests in irrigation, industrial use, recreational use, municipal use; or to allocation of fields for the chemist, for the geologist, for the sanitary engineer, for the physicist, any more than it does to separation into areas bounded by property lines, county lines, states lines, or even some river-basin boundaries. As the areas of heavy demand expand toward each other and the necessity for water management increases, these artificial barriers will have to yield more and more to the realities of the hydrologic cycle (Thomas and Leopold, page 1003). The legislature must act at the state or federal level and clarify and integrate the property rights in surface and groundwater for integrated use in management to occur.

The federal government may lack the constitutional authority to adopt a national permit or tax system applicable throughout the nation. The author joins Bergin in urging the state legislatures to adopt a uniform permit system for use of groundwater or surface water (Bergin, page 231). If the legislatures of the respective states lack the resolve to adopt a permit system applicable generally throughout the state, the next best alternative would be legislation imposing a riparian rights rule for surface water and correlative rights rule for groundwater (*Ibid.*) The effect of adopting these rules would be to essentially have a riparian right (reasonable use) rule for all water (*Ibid.*). Certainly that rule contains shortcomings, but the rule is preferable to the inconsistent rules between surface and groundwater (*Ibid.*).

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