Water Quality Trading in the Context of the Antidegradation Requirements of Federal and State Clean Water Policies

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Abstract

Across the United States, policy makers are interested in developing and implementing water quality trading with the goal of improving regulatory cost-effectiveness and flexibility. However, many barriers to water quality trading implementation remain. One potential barrier is created by the possibility of legal challenges under state and federal antidegradation requirements in clean water policies.

Water quality trading does not exist at this time in Georgia watersheds, but a recent state Supreme Court decision regarding state antidegradation requirements created substantial legal implications for the future of water quality trading in the state. *Hughey v. Gwinnett County*, 278 Ga. 740 (2004). In the wake of this court decision, the Georgia Board of Natural Resources acted to change the state antidegradation regulations and removed this potential barrier to trading. Although this regulatory change was a step toward supporting water quality trading in the state, significant uncertainty remains over the legal issues that federal and state antidegradation policies raise for water quality trading in high quality waters. The U.S. Environmental Protection Agency asserts that antidegradation should not be a barrier to water quality trading and suggests that antidegradation policy be interpreted to apply on a net watershed basis to allow for trading. However, with a dearth of case law to interpret antidegradation requirements, legal concerns vis-à-vis water quality trading remain uncertain and could present a potential barrier to implementation of this innovative policy tool in some watersheds.

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Introduction

Water quality trading has generated a high level of interest among policy makers over the past several years. At this time, at least 50 water quality trading initiatives are in development or implementation in watersheds across the United States, and many more are under consideration. Several states, including Michigan, Pennsylvania, Ohio, Virginia, and Florida, have enacted or are developing state level water quality trading policies. The U.S. Environmental Protection Agency (EPA) has issued a national policy to guide water quality trading development, and the agency has invested substantial resources in supporting water quality trading in the nation's watersheds. At the 2nd National Water Quality Trading Conference in May 2006, Assistant Administrator Ben Grumbles announced that EPA has set a goal to increase the number of trades in National Pollutant Discharge Elimination System (NPDES) permits by 33% over the next year. The U.S. Department of Agriculture (USDA) has also expressed a high level of interest in supporting the implementation of water quality trading and recently initiated a partnership with EPA to advance water quality trading.

Why all the buzz about water quality trading? In theory, water quality trading can support more cost-effective and flexible management of water quality than traditional regulation. It provides incentives for innovation in pollution abatement technology. It also offers an opportunity to re-direct water quality investments from point source controls to nonpoint source controls, when nonpoint controls are less costly.

However, water quality trading faces some barriers to success. These include scientific, political, economic, and legal barriers. This paper focuses on a recent legal case in Georgia that raised concerns about the potential implications of antidegradation policies for water quality trading. We discuss how the subsequent actions of Georgia policy makers addressed this barrier to trading, perhaps inadvertently, and explore broader legal issues for water quality trading that may be raised by antidegradation policies.

Antidegradation Policy

Federal water quality regulations (40 CFR 131.12) require each state and Indian tribe to develop antidegradation policies and procedures. The purpose of antidegradation policies is to maintain and protect *existing* water quality, particularly where existing water quality exceeds the levels necessary to protect the designated uses of fish and wildlife propagation and recreation. Where water quality exceeds the level necessary to support designated uses, existing water quality must be maintained, unless the state finds that allowing for lower water quality is necessary for important social or economic development. Antidegradation procedures identify the questions that must be addressed when a new regulated activity is proposed that could lower existing water quality. These procedures are referred to as an antidegradation review. The level of review is set according to tiers based on the level of existing water quality (e.g., high quality waters, outstanding national resource waters).

When an antidegradation review is triggered by a proposed activity in a water body with existing high water quality, the state must consider whether the activity will lower water quality and, if so, whether it is necessary to support important social or economic

development. This review provides protection against the degradation of existing high water quality, even if the proposed activity would be in compliance with other water quality regulations.

Water Quality Trading

Water quality trading allows pollutant sources to trade pollution control obligations in order to lower the joint costs of compliance. Trading takes advantage of differences in pollution reduction costs among pollution sources. The costs of pollution reduction are not uniform. Different pollution sources have different pollution reduction costs as a result of factors such as treatment plant size, level of reduction required, and available treatment technology.

When trading is an option, a discharger can choose between reducing its pollutant load and purchasing pollutant reduction credits from another source that has exceeded its own pollution reduction obligation. Trading allows pollution sources to achieve environmental goals more cost-effectively. Furthermore, trading can be designed to achieve environmental improvement by requiring a trade premium (i.e., the trading ratio is greater than 1:1).

Traditional regulation of water quality is driven by technology objectives that target the installation of particular abatement technologies. Trading shifts the emphasis to a performance basis with a focus on water quality results. By targeting performance, trading can stimulate technological innovation. The potential revenue stream from trading provides an incentive for the development of new abatement technologies. Furthermore, trading can

provide other benefits including flexibility, ancillary environmental benefits such as habitat protection, and the development of watershed partnerships.

Water quality trading is an innovative approach that offers the potential for substantial cost savings, among other benefits. However, trading markets are affected by a broad range of economic, environmental, social, and political factors. Implementation is complex, and the potential benefits can only be realized when trading is implemented under appropriate conditions.

The development of a trading program requires careful attention to several concerns that could pose as obstacles to success. These concerns include:

- Scientific uncertainty
- Economic and political uncertainty
- Hotspots or localized impacts
- Transaction costs
- Liability and enforcement

The success or failure of trading will hinge on the careful consideration of these issues of concern in the design and implementation of a trading program. In this paper, we consider possible legal barriers to trading posed by antidegradation policies and procedures.

EPA: Antidegradation and Water Quality Trading

In January 2003, EPA issued a national water quality trading policy to support the implementation of water quality trading in watersheds across the U.S. The policy provides

guiding principles for water quality trading policies and begins to address how water quality trading can be implemented in the context of other existing clean water policies, including antidegradation.

With respect to antidegradation, the EPA policy states that:

> Trading should be consistent with applicable water quality standards, including a state's and tribe's antidegradation policy established to maintain and protect existing instream water uses and the level of water quality necessary to support them, as well as high quality waters and outstanding national resource waters (40 CFR 131.12). EPA recommends that state or tribal antidegradation policies include provisions for trading to occur without requiring antidegradation review for high quality waters. EPA does not believe that trades and trading programs will result in "lower water quality" as that term is used in 40 CFR 131.12(a)(2), or that antidegradation review would be required under EPA's regulations when the trades or trading programs achieve a no net increase of the pollutant traded and do not result in any impairment of designated uses.

The EPA believes that water quality trading can be aligned with existing water quality programs and policies, including antidegradation. The trading policy suggests the inclusion of provisions to address water quality trading in watershed plans, Total Maximum Daily Loads (TMDLs), NPDES permits, water quality standards, and antidegradation policies in order to clarify how water quality trading can be implemented in compliance with other water quality policies.

The EPA policy states that it does not believe that trading, when conducted in compliance with its guidelines, will result in lower water quality. Further, it suggests that antidegradation reviews should not be required when trading results in no net increase of pollutants in a water body. The policy is generally careful to proscribe trading that would degrade water quality, including localized degradation at the site of increased pollutant discharge, but its position on antidegradation is to consider the pollutant effect on a net watershed basis.

Water Quality Trading in the Context of Antidegradation

Each state sets its own antidegradation policy and therefore the implications for water quality trading of these policies will vary from state to state. While many states track the federal antidegradation policy language, others have unique language that may or may not pose a legal barrier to water quality trading. In Georgia, the state antidegradation policy played a key role in a recent State Supreme Court decision concerning an NPDES discharge to Lake Lanier in North Georgia. Very little case law exists on antidegradation policies, and therefore, its uniqueness made this case potentially very important. Though water quality trading was not the subject of this case, the decision created potential implications for future implementation of water quality trading. Follow-up decisions by state lawmakers have limited the impact of this decision, but the case still warrants analysis to understand the potential issues it created for water quality trading.

Hughey v. Gwinnett County

In late 2004, *Hughey v. Gwinnett County* was decided by the Georgia State Supreme Court. *Hughey v. Gwinnett County*, 278 Ga. 740 (2004). The case followed from a citizen suit in 2000 that challenged the permittee and the permitting agency (the Georgia Environmental

Protection Division) on the issuance of a NPDES permit for the new Gwinnett County F. Wayne Hill Water Resources Center, a wastewater treatment plant with a discharge to Lake Lanier. The new treatment plant uses state-of-the-art ultrafiltration technology to remove pollutants. While the permit challenge was deliberated in the courts, the plant initiated operations, but discharged through an alternative, existing, permitted Gwinnett County outfall to the Chattahoochee River below Lake Lanier. During this time, the plant demonstrated the high levels of treatment that its technology could attain, levels that exceeded the regulatory standards to which the plant would be held in the proposed permit. The case advanced from an Administrative Law Judge to Hall County Superior Court to the state Court of Appeals and finally to the State Supreme Court.

In late 2004, the Supreme Court found that the treatment plant was capable of removing more pollutants than the permit required, and therefore the permit violated state anti-degradation rules. As a result of the decision, the Georgia Environmental Protection Division (EPD) was required to tighten the discharge limits in the permit for the wastewater plant to reflect the plant technology's abatement performance levels. The decision required that Gwinnett County treat its wastewater to achieve the best levels of treatment practicable using existing technology. The decision stated:

> …the clear and unambiguous language of Georgia's anti-degradation rules require the permittee to utilize the "highest and best [level of treatment] practicable under existing technology." Because the treatment plant at issue, the Hill Plant, is capable of removing more pollutants from the discharged

water than the permit requires, the permit violates the anti-degradation rules. Accordingly, we reverse.

Id. at 740. In response to this decision, the EPD moved to change the state antidegradation policy language. Ga. Comp. R. & Regs. r. 391-3-6-.03 (2005). The Division's proposal argued that the existing Georgia antidegradation policy did not follow the federal rule's language. Furthermore, the EPD argued that the federal language had been guiding Division antidegradation procedures, and therefore, the change would not affect Division practices. It was proposed to achieve consistency with federal language and current practices.

The existing state rule stated that any development that is allowed to degrade a water quality segment should use controls that are the *highest and best practicable under existing technology*. The federal rule requires such sources to meet the *highest statutory and regulatory requirements.* The EPD proposed that the state rule be modified to eliminate the "highest and best practicable under existing technology" requirement and to track the federal language. The Georgia Board of Natural Resources voted to adopt the changes proposed by the EPD at its October 2005 meeting. Therefore, future NPDES permits need not be held to the same high technology-based standard that the Gwinnett County plant must meet.

Implications for Water Quality Trading

Why does this case have implications for water quality trading? Water quality trading rewards over-compliance with effluent standards because permittees can sell pollutant reduction credits equivalent to their over-compliance to other regulated sources. Most wastewater

treatment plants are designed to over-comply with their standards, in order to provide a margin of safety and to accommodate future growth. In this case, Gwinnett County over-complied with its permit limits. Water quality trading has not yet been implemented in any Georgia watersheds, and therefore, trading was not an option for the Gwinnett plant. However, if trading had been an option or would be in the future, the state's antidegradation language would have precluded the ability of Gwinnett County or a similar discharger to high quality waters from achieving tradable levels of over-compliance. Notably, in the context of the State Supreme Court decision, this language created a disincentive to design treatment plants for over-compliance.

The discussion over changes to the Georgia antidegradation language resulted in proposals to replace the EPD proposal with alternative language. One proposal suggested at a public hearing on the rule change offered language that would have required dischargers to treat wastewater with the best technology that they could afford. While affordability is an important concern, the suggested alternative language would have emphasized technology-based requirements that could limit flexibility and innovation in the future. By setting a technology-based requirement, this language could have limited or prohibited the use water quality trading in Georgia watersheds. If dischargers were required to use the best technology that they can afford, water quality trading would not be possible because the technology choices of permit holders would be dictated by regulation. Furthermore, the incentive for innovation in technology choices could be curtailed. As an aside, the definition and demonstration of "affordability" would likely be complex policy issues that would become a focus of debate.

Another alternative that was suggested would require dischargers to consider a range of alternative technologies and choose the "least degrading reasonable alternative." This language could also have precluded water quality trading in affected waters, unless the range of alternatives allowable for consideration included or supported water quality trading as well as technology options. The use of water quality trading could provide an alternative that results in the lowest level of aggregate degradation, while also providing for cost-effectiveness and flexibility. As another aside, the definition and interpretation of "reasonable" and "least degrading" would likely have presented challenges for policy implementation.

Ultimately, the EPD's proposal that dischargers comply with "the highest statutory and regulatory requirements" for point sources was adopted. The decision to change the state antidegradation policy was said to be driven by a concern for consistency with the federal policy and with existing EPD practice. It is unlikely that water quality trading was an important factor in this action by the Board of Natural Resources, but the effect of the action was important for trading in that a barrier to trading was, most likely, removed.

Water Quality Trading and Antidegradation: Post-Hughey

On the surface, Georgia's post-*Hughey* efforts seem to have created a regulatory scheme that would be more open to water quality trading. The decision by the Board of Natural Resources to track the federal language makes Georgia's legal framework more conducive to water quality trades by allowing for performance-based pollution reduction, as opposed to the strict

pre-*Hughey* language that called for a less flexible and more ambiguous technology-based requirements. The new Georgia regulation tracks the federal antidegradation language, providing more consistency with EPA policy and the regulations of the majority of states. As case law is created to address the antidegradation language, the consistency of Georgia's policy with federal and the majority of states will provide persuasive authority for how Georgia applies the standard.

However, there are two lingering legal issues that the new Georgia regulatory language does not resolve and that could make antidegradation regulations a possible hurdle for water quality trading in Georgia. First of all, inconsistencies remain among the policies of the various States, and these inconsistencies will have to be resolved whenever water quality trading would have a possible effect on interstate waters. While its antidegradation rule seems to allow room for water quality trading, Georgia must be cognizant of the rules of her neighboring states when and if implementing trading programs in the future. The antidegradation rules of Florida and Alabama are of obvious importance, given the ongoing litigation over the Alabama-Coosa-Tallapoosa and Apalachicola-Chattahoochee-Flint basins. In addition, South Carolina's concerns over the Savannah River will require Georgia planners to be aware of possible antidegradation issues if water quality trading is developed in that basin.

A review of the antidegradation policies of Georgia's neighboring states reveals that Florida, Alabama, and South Carolina all use language identical or similar to the federal antidegradation language – the standard of "highest statutory and regulatory requirements." *See* Ala.Admin. Code 335-6-10-.04(3); Fla. Admin. Code Ann. 62-302.300 (12); 61 S.C.

Code Ann. Regs. 68 §D(2). This suggests that future water quality trading implementation in Georgia may not be affected by inconsistent standards in neighboring states on maintaining water quality. However, no case law exists at this time in any of the states discussed here (including Georgia) to support a consistent interpretation of "highest statutory and regulatory requirements." In the only case in this region to mention this language, (while not commenting specifically on the meaning of "highest statutory and regulatory requirements"), a 1990 Alabama Supreme Court case held that "… as to matters related to this appeal we agree with ADEM (Alabama Department of Environmental Management) that the state and federal antidegradation policies are substantially the same." *Fowl River Protective Ass'n v. Board of Waters & Sewer Comm'ners of the City of Mobile,* 572 So. 2d 446 (1990). This case may support the argument that the Alabama regulation should be interpreted the same way as the federal regulation. However, there is no federal case law that interprets the rule's language, so we are left with a ruling that Alabama's language means the same as the federal language, whatever that meaning may be.

A second lingering issue is the lack of case law interpreting antidegradation language in the courts of Georgia, her sister States, and the federal courts. This void in case law leaves open the possibility that Georgia's new language could be interpreted to exclude water quality trading, and almost certainly explains national interest in the *Hughey* case as one of the few that hint at the standard to apply in antidegradation cases. Even in Michigan and Wisconsin, two states that differ from the federal language in their respective antidegradation policies, there is no case law to interpret the standard of care to be applied to permittees. It is also expositive that Georgia applied its antidegradation policy for 30 years using language that was

different from the federal rule, yet has stated that regulatory application under the new Georgia language would be the same as under the old Georgia regulation.

In the end, the most significant legal issue to be learned from *Hughey* is that a lack of explicit regulatory direction, combined with the absence of case law to help define the vague regulatory language, yields a situation where no one knows how antidegradation policies will affect water quality trading programs. The Georgia Board of Natural Resources response to the Hughey decision is clearly a step in the direction of allowing water quality trading in the state, but more legislative action or court opinions in the context of water quality trading programs will be needed to bring a real understanding of antidegradation standards.[1]

Conclusion

In the wake of the *Hughey* decision, Georgia adopted an antidegradation policy that mimics the federal policy. This action removed a potential barrier to water quality trading. However, even under the new policy, legal issues might still be a barrier for water quality trading in high quality watersheds. The EPA asserts that federal antidegradation policy is not a barrier to water quality trading. The EPA position is that the "highest statutory and regulatory" requirements language affecting new and expanding point sources to high quality waters can be interpreted to allow for water quality trading if the effect on water quality is considered on a net basis. However, in the event of a case challenging a state on water quality trading on

[1] In considering the potential effects of antidegradation policy on water quality trading, it is important to remember that antidegradation applies only to waters with higher water quality than standards require. Therefore, antidegradation would only be a concern for water quality trading in watersheds where at least some of the waters are considered "high quality waters" or "outstanding resource waters".

antidegradation grounds, the EPA policy statement on trading would have only limited persuasive authority. It is possible that a court could determine that antidegradation does not allow for the flexibility associated with trading in high quality waters. With no clear case law on antidegradation policy, the potential legal issues for water quality trading remain uncertain and could present a potential legal barrier to implementation of this innovative policy tool in some watersheds.