

Water Resources Committee Newsletter

Vol. 20, No. 1

March 2018

FROM THE CHAIRS

Andrea Clark and Kyle Robisch

We are happy to present to the Committee this February 2018 Water Resources Committee Newsletter. This issue presents articles discussing three critical issues in water resources law today: groundwater management and federal reserved rights; emerging contaminants and associated regulatory challenges; and the legal process associated with water allocation.

Our 2017–2018 bar year so far has been busy and productive, with ongoing case summaries and hot news updates on our website and planning for an upcoming webinar related to the 2018 Water Law Conference in Orlando from April 16 to 18. Keep a lookout for more information about the webinar, and please plan to attend the 36th Water Law Conference, which every year brings together a dynamic group of professionals from around the country to discuss emerging issues and hot topics related to all facets of water law.

The Committee's Team Website continues to post case summaries on recent water law cases in state and federal court, and we hope these summaries are useful for committee members. We also put hot news updates on a biweekly basis to keep you apprised of major news updates in our field. Please continue to visit the webpage to stay on top of recent developments: <http://apps.americanbar.org/dch/committee.cfm?com=nr251200>.

Thank you for being a part of our committee. Please let us know if you have more ideas on ways we can help you stay updated on water resources issues.

Andrea Clark and Kyle Robisch are co-chairs of the Water Resources Committee.

STATE GROUNDWATER MANAGEMENT AND FEDERAL RESERVED RIGHTS: WHAT'S NEXT?

Micheline Fairbank and Debbie Leonard

Over 100 years ago in the case of *Winters v. United States*, 207 U.S. 564 (1908), the Supreme Court first articulated the concept of federal reserved water rights. Establishing what is now known as the *Winters* doctrine, the Supreme Court held that when setting aside Indian reservations, the United States impliedly reserved sufficient water to fulfill the purposes of such reservations. Subsequently, the Court expressly acknowledged that the reserved rights doctrine includes any reservation of federal land. See *Cappaert v. United States*, 426 U.S. 128 (1976). Federal reserved rights have two unique attributes that differentiate them from water rights recognized under state law: they vest on the date the reservation was created, and they cannot be lost through non-use.

In *Winters*, the United States sought to protect the flow of the Milk River from upstream dams

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Vol. 20, No. 1, March 2018
Jeff Kray and H. David Gold, Editors

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AMERICAN BAR ASSOCIATION
**SECTION OF ENVIRONMENT,
ENERGY, AND RESOURCES**

CALENDAR OF SECTION EVENTS

March 6, 2018

**Cost Recovery Under California's HSAA:
New Cases Clarify the Right to Sue and
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April 16-18, 2018

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Hilton Bonnet Creek
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April 18-20, 2018

47th Spring Conference

Hilton Bonnet Creek
Orlando, FL

June 7-10, 2018

ABA 2018 Paris Sessions

Paris, France

October 17-20, 2018

26th Fall Conference

Marriott Marquis San Diego Marina
San Diego, CA

**For full details, please visit
www.ambar.org/EnvironCalendar**

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and diversions for the benefit of the Fort Belknap Indian Reservation. *Winters* thereby recognized that reserved rights could be asserted where a state manages the rights to surface water by seniority. In the ensuing century since the *Winters* decision, various contours of reserved water rights have been addressed in courts throughout the West. The Supreme Court, however, has yet to opine on two increasingly significant facets to the reserved rights doctrine: (1) whether reserved rights extend to the groundwater that underlies a federal reservation; and (2) whether and to what extent reserved rights preempt state laws governing the management and regulation of water use. Recently filed petitions for certiorari arising from the case of *Agua Caliente Band of Cahuilla Indians v. Coachella Valley Water Distr.*, 849 F.3d 1262 (9th Cir. 2017), put these issues before the Supreme Court.

Background on *Agua Caliente*

The *Agua Caliente* case involves a claim by the Agua Caliente Band of Cahuilla Indians (the “Tribe”) for reserved groundwater rights against two Southern California municipal water suppliers, Desert Water Agency and the Coachella Valley Water District (collectively, the “Agencies”). The Agencies filed separate petitions for certiorari: *Coachella Valley Water District v. Agua Caliente Band of Cahuilla Indians*, Supreme Court case number 17-40, and *Desert Water Agency, et al. v. Agua Caliente Band of Cahuilla Indians*, Supreme Court case number 17-42 (collectively referred to as “*Agua Caliente*”).

The Agencies serve their customers with groundwater from the aquifer underlying the Coachella Valley, where the Tribe’s reservation is located. The Tribe has surface water rights but does not pump any groundwater from the Coachella basin, even though it could do so under California law. In addition to exercising its surface water rights, the Tribe purchases water from the Agencies.

In 2013, the Tribe sued the Agencies in the Central District of California, seeking inter alia a judicial declaration that (1) the Tribe has a federal reserved and aboriginal right to groundwater appurtenant to the reservation; (2) the Agencies be barred from recharging the aquifer using Colorado River water on the basis that it adversely affects the quality of the native groundwater; and (3) the Tribe has the right to use the pore space beneath its reservation for the purpose of storing its reserved water for future use. By agreement of the parties, the district court trifurcated the case. The first part of the case, which was the subject of the certiorari petitions, addressed whether the Tribe maintained a federal reserved water right and aboriginal right to the groundwater in the Coachella Valley. The second phase of the case will determine whether the Tribe has a beneficial ownership in the “pore space” beneath the reservation and whether the Tribe has a right to a certain quality of water within the aquifer. Finally, the third phase will focus on the quantification of any identified groundwater rights of the Tribe.

In the first part of the case, the district court concluded that the Tribe maintains a federally reserved water right to the groundwater but that the Tribe did not have an aboriginal right to the groundwater. The Agencies appealed, and the Ninth Circuit affirmed. As explained by the Ninth Circuit, because “the primary purpose underlying the establishment of the reservation was to create a home for the Tribe, and water was necessarily implicated in that purpose,” the “United States implicitly reserved a right to water when it created the Agua Caliente Reservation,” and that right extended to appurtenant groundwater in the Coachella Valley aquifer. 849 F.3d at 1270. Although the Tribe has the same right of every other landowner to pump groundwater under California law, the Ninth Circuit held that the federal reserved rights doctrine nevertheless preempts state water law. *Id.* at 1272.

The Agencies petitioned for certiorari. Although each petitioner framed the questions presented differently, the fundamental issues before the Court

were whether and under what circumstances a federal reserved right to groundwater exists and to what extent any such right preempts regulation of groundwater under state law.

Federal Reserved Rights to Groundwater

The question of whether the doctrine of federal reserved rights encompasses groundwater is not foreign to the Supreme Court. In *Cappaert*, the Court was tasked with deciding whether, in enlarging Death Valley National Monument to include a natural feature known as “Devils Hole,” the United States impliedly reserved a right to water in an underground pool that is home to the endangered Devils Hole pupfish. Groundwater development on nearby lands was depleting the underground pool and threatening the fish habitat. The Court determined that when expanding the monument, water was implicitly reserved to fulfill the purpose of the reservation. In reaching this conclusion, however, the Court declined to address the question of whether the reserved right extended to groundwater, concluding instead that the water in the underground pool was surface water. To maintain sufficient water in the pool for preserving and protecting the fish, the Court held that the federal reserved right took priority over the subsequently appropriated state law groundwater rights.

Not long after *Cappaert*, the Court had an opportunity to further delineate the contours of federal reserved water rights in *U.S. v. New Mexico*, 438 U.S. 696 (1978). *New Mexico* involved an appeal by the United States from the adjudication of the Rio Mimbres River, in which the United States asserted a federal reserved right for the Gila National Forest, which included recreation, aesthetics, wildlife preservation, and other beneficial uses. Recognizing the significant percentage of federal land ownership in the West, the Court sought to balance the concerns of the federal government and the states. Because a federal reserved water right is an implied right, the Court stressed, a court must carefully balance the purpose of the reservation against the need

for water necessary to fulfill the purpose of the reservation by, among other things, examining the text and legislative history of the act that set aside the federal reservation. Looking at the pertinent legislation, the Court noted the language that national forests were solely created “for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber.” *Id.* at 706. The purposes for which the United States asserted the reserved right to the Rio Mimbres River, the Court concluded, were secondary to the reservation’s primary purpose and therefore could not be the basis of an implied right. *Id.* at 714. The analysis articulated in *New Mexico* has come to be known as the “primary purpose” test.

Ten years later, the Supreme Court again faced a case dealing with the reserved right doctrine in which the Wyoming Supreme Court refused to recognize a reserved right to groundwater because it could find no previous court decision that did so. On review, the Supreme Court declined to address the issue, simply affirming the Wyoming Supreme Court decision. *See In re Big Horn River Sys.*, 753 P.2d 76, 99–100 (Wyo. 1988), *aff’d sub nom. Wyoming v. United States*, 492 U.S. 406 (1989). Absent any substantive statement from the Supreme Court, various lower courts that have faced the question have recognized a reserved right to groundwater.

The petitioners, amici, and respondents in *Agua Caliente* raised a number of interrelated arguments in support of their respective positions. This article does not attempt to address them all. Rather, it focuses on a specific aspect of the case that questions whether reserved rights always preempt state water law, even when water is available to the federal reservation under state law.

Variations in State Groundwater Management Systems

Western states, where most federal reservations are located and where water is most scarce, generally use a system known as “prior appropriation”

to allocate surface water rights. Under a prior appropriation structure, an appropriator who diverts water has priority over subsequent appropriators in the quantity of water placed to beneficial use. In times of shortage, the senior right holder may use its entire water allotment before junior water rights holders may exercise theirs.

The temporal nature of reserved rights fits neatly into the structure of a prior appropriation system. The reserved right's vesting date, i.e., the date the reservation was established, allows the federally reserved right to be managed in a state law priority system. Those state rights that are senior in time to the date a reservation was created take priority over the federal right while those more junior in time may only be exercised once the federal right is satisfied.

Although most of the West follows prior appropriation for surface water, there is variability among the states as to their system for groundwater management. These systems are sometimes based on land ownership, not priority. For example, some states follow the rule of absolute dominion, which allows an overlying landowner to pump as much as the landowner desires without regard to injury to others. There is no system of priority, no limit to the amount of water that can be pumped, and no penalty for non-use.

Other states, such as Arizona, have adopted what is known as the "reasonable use" rule for groundwater in certain areas. *See In re Gen. Adjudication of All Rights to Use Water in Gila River Sys. & Source*, 989 P.2d 739, 743 (Ariz. 1999). The reasonable use rule allows a landowner to pump any amount of water that can be put to a reasonable use on the overlying tract. Again, temporal priority is irrelevant; what matters is land ownership. The rule affords no legal protection against injury caused by neighboring pumping. Notwithstanding that Arizona law disregards the date when groundwater was first appropriated, the Arizona Supreme Court has recognized federal reserved rights to groundwater where state law would fail to satisfy the water needs

of a reservation, but only where "other waters are inadequate to accomplish the purpose of a reservation." *Id.* at 748.

Historically, California has allocated groundwater to overlying owners under a regime known as "correlative rights," with each user of the water having an interest as "tenants in common" with the other groundwater users. *Katz v. Walkinshaw*, 141 Cal. 116 (1903). Land ownership alone creates the right to pump groundwater from the underlying aquifer, although the water must be put to beneficial use on the overlying land. The correlative rights concept does not establish priorities for water rights. Instead, each landowner must share the available water on an equitable basis. That means that unlike the "reasonable use" approach used in Arizona, in times of scarcity, each groundwater user is limited to a proportionate share of the safe yield of the aquifer. Superimposed on its common law scheme, in 2014, California enacted the Sustainable Groundwater Management Act, which requires that federal reserved water rights to groundwater be "respected in full." Cal. Water Code § 10720.3(d). To the extent a conflict arises over their adjudication or management, the federal reserved rights must prevail over state law.

Aligning the Ninth Circuit's Decision in *Agua Caliente* with States' Interest in Groundwater Management

In that the *Agua Caliente* case originates in California, the petitioners and some amici contended that because the Tribe has the right to divert groundwater under California law equal to that of other Coachella Valley landowners, the federal reserved rights doctrine should not apply. They argued that preemption may only occur when there is an actual conflict between state and federal law. Since the correlative rights regime in California allows the Tribe equal access to the Coachella Valley aquifer, they posited, federal reserved rights are not necessary to satisfy the purpose of the reservation, and thus no actual conflict exists.

The Ninth Circuit rejected this position, holding that “state water entitlements do not affect our analysis with respect to the creation of the Tribe’s federally reserved water right” because a reserved right exists regardless of whether “other sources of water then available” are sufficient to “meet the reservation’s water demands.” *Agua Caliente*, 849 F.3d at 1269. As articulated by the Ninth Circuit, a reserved right is implied where any right to water is necessary to achieve the purposes of a reservation. *Id.* at 1272. The analysis “does not ask if water is currently needed to sustain the reservation; it asks whether water was envisioned as necessary for the reservation’s purpose at the time the reservation was created.” *Id.* Therefore, so long as a federal reservation “contemplates” any use of water, the Ninth Circuit found groundwater is implicitly reserved.

For that reason, the Ninth Circuit concluded, the fact that the Tribe has a present right under California law to pump water does not affect the preemption analysis. The reserved right was created when the reservation was first set aside, and the shifting winds of state law do not affect the preexisting federal right.

In their certiorari petitions, the Agencies asserted that priority-based federal reserved rights “would not fit comfortably” in state groundwater management systems that are based on principles of land ownership rather than priority. In addition to the petitioner Agencies, a number of states filed an amicus brief to challenge the breadth of the Ninth Circuit’s conclusion. The amicus states argued that the scope of the Ninth Circuit’s decision conflicts with the narrow interpretation of reserved rights the Supreme Court established to ensure deference to state water law. The amicus states also asserted that the Ninth Circuit’s decision creates significant uncertainty and conflict within the management of groundwater resources under state law.

Relying on the Court’s past decisions and the rationale underlying those decisions, the amici argued, states have had a legitimate expectation

that they had primary control over their groundwater resources. Where a groundwater basin is a finite resource, limited to the volume of water that recharges the aquifer, many aquifers in the West have been fully allocated for decades, or more. The concern with recognition of a contemporary federal groundwater claim, as articulated by the amici, is potential for instantaneous over-allocation of a groundwater system.

The Ninth Circuit’s decision forces the states to balance the interests of existing users (who, in reliance on state-recognized rights, may have made social and financial investments in the development and beneficial use of their water rights) and a newly recognized, potentially senior federal reserved right. And states that do not follow prior appropriation will need to determine how a seniority-based right can be managed in a groundwater system that does not recognize priorities. According to the amici, a federal reserved water right makes little sense where the reservation’s purposes can be satisfied under the applicable state law.

The United States and the Tribe countered these concerns by urging that there is no evidence to support the amici’s contention that recognizing a reserved right to groundwater will frustrate state groundwater management. The United States argued that there is not confusion or uncertainty; lower courts have consistently held that a federal reserved water right extends to groundwater, and states themselves have extended reserved claims to groundwater. The Tribe asserted that California’s new groundwater management law expressly contemplates federal reserved rights to groundwater and that pueblo, appropriative, or prescriptive rights, which are all priority based, are already recognized in California and have not defeated the state’s groundwater regulation. The Tribe also points to a settlement agreement approved by Congress in 2008 that recognized a California tribe’s “prior and paramount right” to 9000 acre-feet of groundwater. In light of these examples, the Tribe urged, there is nothing

to suggest that federal reserved rights are incompatible with state law.

On November 27, 2017, the Court denied certiorari, yet again passing on the opportunity to create definitive nationwide law that delineates the contours of the federal reserved rights doctrine in relation to groundwater. As a result, the nine states and two territories of the Ninth Circuit will need to determine how federal reserved rights claims will be integrated into their groundwater management decisions, whether or not the states currently manage groundwater by priority.

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REGULATORY CHALLENGES POSED BY EMERGING CONTAMINANTS

Nikki Delude Roy, H. David Gold, Rachel Jacobson, and Heidi Ruckriegle

Awareness of the presence of contaminants of emerging concern (a.k.a. emerging contaminants) in public and private water supplies around the country has become a considerable focus of public officials and the general public. This awareness arose from recent developments in analytical techniques which allow lower concentrations of these compounds to be detected, new drinking water health advisory levels announced by the U.S. Environmental Protection Agency (EPA), and an increased understanding of the potential health effects of chemicals in food, air, water, and other environmental media.

Certain emerging contaminants—such as pharmaceuticals and personal care products, endocrine disruptors, brominated flame retardants, n-nitrosodimethylamine, perchlorate, and trichloropropane—continue to confound regulatory agencies. Agencies are struggling to determine the potential impacts of these contaminants and to develop strategies to manage the risks.

For other emerging contaminants, several regulatory agencies have begun to act. In May 2016, EPA announced revised lifetime health advisories for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). Specifically, EPA revised the drinking water health advisories for these two compounds to 0.07 parts per billion (ppb) or 70 parts per trillion (ppt) (individually or in combination with each other) from the previous 0.4 ppb for PFOA and 0.2 ppb for PFOS. Although EPA health advisories are non-enforceable and non-regulatory, they prompted several states to regulate PFOA and PFOS. See Jeff Kray & Sarah Wrightman, *Emerging Contaminants Cause Regulatory Uncertainty for Water Suppliers and Landowners*, 19 A.B.A. WATER RESOURCES COMM. NEWSLETTER 17–19 (Aug. 2017) (discussing regulatory steps taken in Washington, New York, and Vermont). But the states' approaches

have not been uniform, which is likely to complicate compliance, enforcement, and public perception of risk.

What Are PFAS?

PFOA and PFOS fall within a class of emerging contaminants called “per- and polyfluoroalkyl substances” (“PFAS”). PFAS comprise a large group (believed to be in the thousands) of anthropogenic or synthetic fluorinated organic compounds. They do not occur naturally, but have been manufactured around the world for use in various applications where water, oil, heat, or stain-resistant properties are required.

PFAS also have been called “perfluorinated chemicals (PFCs),” but EPA is now trying to standardize the term “PFAS” instead. EPA hopes that such standardization will help avoid confusion with another group of chemicals, perfluorocarbons, which also have been called “PFCs.” See EPA, *What Are PFCs and How Do They Relate to Per- and Polyfluoroalkyl Substances (PFASs)?*, <https://www.epa.gov/pfas/what-are-pfcs-and-how-do-they-relate-and-polyfluoroalkyl-substances-PFAS> (last visited Nov. 17, 2017).

One of the key differentiators among PFAS is the chemical “chain length,” or the number of carbon atoms in the compound. For example, PFOS and PFOA each have 8 carbon atoms. Other PFAS can have between 2 and more than 20 carbon atoms. Because these carbon chains are either completely or partially surrounded by carbon-fluorine bonds, PFAS molecules are generally resistant to heat, stains, grease, and water. As such, PFAS have been used in countless industrial applications and everyday consumer products, such as non-stick cookware, stain-resistant upholstery and carpets, waterproof clothes and mattresses, and grease-repellent food packaging. PFAS have also been found in dental floss and a variety of cosmetics, including nail polish, facial moisturizers, and eye makeup. Because of their surfactant properties, PFAS are also used in a variety of industries, including aerospace, automotive, building and

construction, electronics, apparel, pharmaceutical, oil/gas, and mining, and are a primary component in some firefighting foams.

Concern About PFAS

Because of their widespread use and relative mobility, PFAS are ubiquitous in the environment. Given the high mobility of some PFAS in water and uncertainty regarding health effects at low concentrations, human exposure through ingestion of contaminated drinking water is of rising concern around the country.

Due to such concerns, the major U.S. manufacturers of PFAS began a voluntary production phase-out of certain long-chain PFAS in 2002 which was completed in 2015. While some “long-chain” PFAS (with 6 or more carbon atoms) have been removed from manufacturing processes, they still exist in a wide range of consumer products that people use daily. The concentrations of many PFAS in these products, and the level of exposure that occurs when people use these products, remain the subject of study.

Largely in response to EPA’s non-binding revised health advisories, the public has called for further action, creating challenges for large and small public water suppliers around the country. In areas where PFAS are known or believed to be present in private drinking water wells, there have been demands to extend public drinking water systems to areas previously served by private water supply wells. See New Hampshire Department of Environmental Services (NHDES), *NH PFAS Investigation, Public Water Line Extension Projects*, https://www4.des.state.nh.us/nh-pfas-investigation/?page_id=64 (last visited Nov. 20, 2017).

In addition, the public has put significant pressure on regulators to formally enact more stringent standards. As of the date of this writing, there are at least 13 pending bills before the New Hampshire legislature relative to PFAS, including a pending bill to require PFAS analysis and reporting for

bottled water in the state. *See* New Hampshire General Court, *HB 1682—As Introduced*, http://www.gencourt.state.nh.us/lsr_search/billText.aspx?id=1583&type=4 (last visited Nov. 24, 2017). In the federal legislature, due to the widespread use of these compounds at military bases (see discussion below), a \$7 million national health study about the effects of PFAS has been authorized as an amendment to a military spending bill that was signed into law on December 12, 2017. *See PFAS Health Study Required by Congress May Lift Threat of Superfund Suit*, INSIDEEPA, <https://insideepa.com/daily-news/pfas-health-study-required-congress-may-lift-threat-superfund-suit> (last visited Jan. 5, 2017).

Regulatory Challenges

The regulation of PFAS poses several unique challenges. One game changer for both regulated and regulatory communities is the low concentrations of PFAS that some studies suggest may be tied to potential health effects. Although they have no force and effect under federal law, EPA's 70 ppt health advisories for PFOA and PFOS have been adopted by several states as regulatory standards for drinking water. *See* EPA, *Supporting Documents for Drinking Water Health Advisories for PFOA and PFOS*, <https://www.epa.gov/ground-water-and-drinking-water/supporting-documents-drinking-water-health-advisories-pfoa-and-pfos> (last accessed Nov. 24, 2017). These are the first compounds to be regulated at such low levels. EPA health advisories and drinking water standards across the country for other compounds (e.g., benzene, trichloroethylene, methyl-tert-butyl-ether [MTBE]) are regulated in the parts per million (ppm) or parts per billion (ppb) range. For comparison, 1 ppm is equivalent to 1000 ppb, which is equivalent to 1,000,000 ppt. Said another way, 1 ppt is equivalent to one drop of water (0.05 milliliters) in 20 Olympic-size swimming pools.

To quantify PFAS in drinking water at concentrations orders of magnitude lower than typically evaluated, EPA approved a specific analytical method, EPA Method 537,

for commercial laboratories using liquid chromatography and tandem mass spectrometry. However, EPA Method 537 was developed to analyze drinking water. There are currently no EPA-approved methods for analyzing PFAS in groundwater, surface water, sediment, wastewater, or solids. As a result, in many states, impacts to drinking water sources have evolved into more traditional source evaluation investigations, and many laboratories are using modified methods for non-drinking water samples based on EPA Method 537. These modified methods have no consistent sample collection guidelines and have not been validated nor systematically assessed for data quality.

Another unique challenge associated with PFAS regulation arises from the variety of sources from which PFAS are believed to have been released into the environment. PFAS contamination of drinking water has been attributed to the use of aqueous film-forming foams used to fight fires at military installations, civilian airports, and even automobile accidents involving fires caused by liquid hydrocarbons. Landfills and waste water treatment plants, land application of wastewater residuals (paper mill solids, municipal biosolids, etc.), car washes, garment/upholstery manufacturing, photography production, paper/paperboard manufacturing, and metal plating operations also have been identified as potential sources of PFAS contamination. In addition to traditional "point sources" (from spills and releases), manufacturing-related air emissions deposited to the ground surface (and then infiltrating to groundwater) have been identified as a potential source of PFAS contamination, with PFAS concentrations exceeding drinking water standards in relatively large areas (miles) around certain manufacturing facilities. *See* Associated Press, *New Hampshire Suspects Chemical Emissions Tainted Wells*, <https://apnews.com/553960e1ac8c4ffcbfd2330f60e84354/new-hampshire-suspects-chemical-emissions-tainted-wells> (last visited Nov. 24, 2017). In sum, PFAS contamination is ubiquitous, creating significant challenges to effectively enforce any regulatory regime.

Regulatory Uncertainty

Due to the challenges presented by PFAS, it remains uncertain how, if, and when many PFAS will come to be regulated. Several states (e.g., Alabama, California, Colorado, Delaware, Florida, New Hampshire, New York, and Rhode Island) have adopted EPA's health advisories for PFOA and PFOS as enforceable standards and/or guidelines.

Other states have adopted or are considering more stringent standards for PFOA and PFOS. For example:

- Vermont has adopted a drinking water health advisory level of 20 ppt standard for PFOA and PFOS. *See* Vermont Department of Health, <http://www.healthvermont.gov/health-environment/drinking-water/perfluorooctanoic-acid-pfoa> (last visited Nov. 24, 2017);
- In May 2017, the Minnesota Department of Health released updated guidance values for PFOA and PFOS of 35 and 27 ppt, respectively. *See* Minnesota Department of Health, *MDH Current Activities: Perfluorochemicals (PFCs) in Minnesota*, <http://www.health.state.mn.us/divs/eh/hazardous/topics/pfcs/current.html> (last visited Nov. 24, 2017);
- New Jersey is considering a drinking water guidance value for PFOA of 14 ppt. *See* New Jersey Drinking Water Quality Institute, *Maximum Contaminant Level Recommendation for Perfluorooctanoic Acid in Drinking Water*, <http://www.nj.gov/dep/watersupply/pdf/pfoa-recommend.pdf> (last visited Nov. 24, 2017); and
- Michigan legislators recently proposed a bill that would establish state drinking water standards of 5 ppt for PFOS and PFOA. *Michigan Bill Proposes Nation's Lowest PFAS Limit in Drinking Water*, http://www.mlive.com/news/index.ssf/2017/12/michigan_pfas_standard_5-ppt.html (last visited Dec. 18, 2017).

Such low concentrations appear to be very conservative, considering that EPA's health advisory is already reportedly five times lower than the level determined not to cause health effects in sensitive populations, which is reportedly ten times lower than the level determined not to cause health effects in average adults. *See* New York Department of Health, *Frequently Asked Questions: Newburgh Area PFOS Contamination*, <https://www.health.ny.gov/environmental/investigations/newburgh/faq.htm> (last visited Nov. 17, 2017).

In addition to creating wider margins of protection than suggested by EPA, states are expanding their regulations to cover additional PFAS compounds and to extend to media other than drinking water. For example:

- New Jersey recently proposed to establish a drinking water maximum contaminant level of 13 ppt for a PFAS compound called "perfluorononanoic acid" (PFNA). New Jersey Department of Environmental Protection (NJDEP), *Notice of Rule Proposal, PRN 2017-140*, <http://www.nj.gov/dep/rules/notices/20170807b.html> (last visited Nov. 20, 2017);
- Massachusetts recently announced that it is developing regulatory levels for up to five PFAS compounds for drinking water, groundwater, and soil;
- Connecticut established a 70 ppt drinking water "action level" for private wells for PFOA, PFOS, PFNA, and two other PFASs: perfluorohexane sulfonate (PFHxS) and perfluoroheptanoic acid (PFHpA). Connecticut Department of Public Health, *Perfluoroalkyl Substances (PFAS) in Drinking Water: Health Concerns*, http://www.ct.gov/dph/lib/dph/environmental_health/eoha/groundwater_well_contamination/101217_pfas_in_drinking_water_fs.pdf (last visited Nov. 20, 2017). Connecticut also has announced groundwater standards for these five compounds and anticipates

publishing proposed soil standards for these five as well. *See Connecticut Department of Energy and Environmental Protection; Remediation Division, Remediation Roundtable, June 20, 2017*, http://www.ct.gov/deep/lib/deep/site_clean_up/remediation_roundtable/roundtablepresent6_20_17.pdf (last visited Nov. 24, 2017);

- Texas has set cleanup standards, called protective concentration levels, for 16 PFAS compounds in groundwater and has soil standards as well. *See Texas Commission on Environmental Quality, March 2017 Tier 1 PCL and Supporting Tables*, <https://www.tceq.texas.gov/remediation/trrp/trrppcls.html> (last visited Nov. 17, 2017); and
- Michigan has established surface water thresholds of 11 ppt for PFOS and 42 ppt for PFOA, established to guide fish consumption advisories. *See EPA Data Shows Toxic PFCs in Two Large Michigan Water Systems*, http://www.mlive.com/news/index.ssf/2016/07/pfos_pfoa_plainfield_ann_arbor.html (last visited Nov. 24, 2017).

States also vary in their recommendations on sampling and analysis regimens. For example, NHDES “strongly encourages stakeholders to sample and analyze, at a minimum, for the expanded list of nine PFAS analytes,” while Massachusetts currently recommends sampling and analyzing for 14 PFAS analytes. *See NHDES, Inclusion of Per- and Polyfluoroalkyl Substances (PFAS) as Contaminants of Concern at New Hampshire Waste Sites: Clarification to May 18, 2017 Letter* (Oct. 2017); Massachusetts Department of Environmental Protection, *Draft Fact Sheet: Guidance on Sampling and Analysis for PFAS at Disposal Sites Regulated Under the Massachusetts Contingency Plan* (Jan. 2017).

Some regulatory agencies are investigating the potential environmental and health impacts of recently formulated PFAS that have been used to replace some of the phased-out PFAS. For

example, North Carolina environmental and health officials are reportedly focusing on the presence of “GenX,” the chemical used as replacement for PFOA for some manufacturing applications, in water supplies. *See How Did GenX Get in This Cumberland County Lake?*, <http://www.fayobserver.com/news/20171118/how-did-genx-get-in-this-cumberland-county-lake> (last visited Nov. 24, 2017). Meanwhile, EPA is expanding its focus to other PFAS, researching the use of Method 537 to include GenX and other short-chain PFAS, and developing toxicity testing methods for approximately 75 PFAS other than PFOA and PFOS. *Floored by Fluorochemicals: What Are the Health Risks?*, BLOOMBERG BNA DAILY ENVIRONMENT REPORT (Dec. 12, 2017).

Conclusion

Regulation and management of risks from PFAS compounds in drinking water and other media will be a moving target for regulators and the regulated community for the near future. Entities with affected interests should closely monitor the processes that develop the relevant rules, and should participate in those processes as their interests warrant. Agencies should include the public and the regulated community in the rulemaking process, to help ensure the merit and legitimacy of emerging rules.

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DE FACTO ALLOCATION OF MISSOURI RIVER WATER: THE EMERGENCE OF LEGAL PROCESS

John H. Davidson

In *Florida v. United States Army Corps of Engineers* (the Tri-State Litigation, 644 F.3d 1160, 1205 (2011), the 11th Circuit Court of Appeals held that when the Corps reallocates reservoir and flow releases for authorized purposes, the reallocation decision is subject to administrative process leading to final agency action. This holding compels the Corps to consider how it operates in other basins, including the nation's largest—the Missouri Basin.

The Flood Control Act of 1944 (FCA), 58 Stat. 887, which was at issue in the Tri-State Litigation, also serves as the basic law of the Missouri River. When enacted, the FCA was a political arrangement that responded to short-term national needs, and construction and operations went forward without a basinwide plan. In the absence of such a plan and any sort of comprehensive water use database, the Corps has been piecing decisions together in an ad hoc manner, in effect an informal system of de facto allocations and reallocations made possible by the abundance of flows. The result is a developed river operated as a commons. Every new use and user is accommodated without limit, free of any form of central decision-making process. Due to the current abundance of water, most of the users and proposed users find that this commons portends no tragedy. But, the unfettered system has actually led to a first example of the Tragedy of the Commons in the damage to the river ecosystem, loss of habitat for plants and animals, and severe impact on threatened and endangered species.

Over the decades, the Corps has, in increments, been passing water downstream in the Missouri River Basin in response to increased demand there for groundwater irrigation, power plant cooling, and municipal and industrial (M&I) uses. Missouri River Master Manual, para. 7-11, p. VII-45, *available at* <http://www.nwd-mr.usace.army.mil/mmanual/mast-man.htm>. When a new downstream use is accommodated, however, the user becomes

reliant and the river is effectively reallocated to support the use. Each historic and new use competes with navigation and the ecosystem for flows. The Corps, inevitably, must make up for these depletions when achieving navigation releases (“pass downs”) from the dams in the upper basin. In addition, these allocations are made without consideration of possible upstream claims of states and Indian tribes.

The Tri-State decision obliges the Corps to provide process when future allocation decisions are made. And, because they were awarded without the benefit of administrative process, the legal status of uses already being accommodated by the Corps is now subject to challenge.

There is no doubt that section 6 of the FCA authorizes the sale of surplus waters from Corps-controlled reservoirs for M&I and agricultural uses. 58 Stat. at 890. The challenge for the Corps is to develop a public process governing each new allocation. In response to the Tri-State Litigation and to demand for diversions from upstream reservoirs in the Missouri River Basin to meet new energy developments, the Corps declared “surplus water” available in each of the upper basin reservoirs, thus recognizing their availability for sale to off-stream uses. The agency has gone even further, however, claiming the “broad discretionary authority” to reallocate among uses “if it is believed that the municipal and industrial use of the water is a higher and more beneficial use. . . .” Garrison Dam/Lake Sakakawea, North Dakota Surplus Water Report (2012) (citing Corps, Planning Guidance Notebook, ER 1105-2-100, para. E-57b(2)(b) (2000), *available at* http://www.publications.usace.army.mil/Portals/76/Publications/EngineerRegulations/ER_1105-2-100.pdf).

Thus, while the Corps’ “surplus water” reports establish a process for diversions from upper basin reservoirs, they leave unattended the question of de facto reallocations in response to regularly increasing downstream uses.

The situation confronted by the Corps in the Missouri River Basin is roughly analogous to that which led to the Tri-State Litigation. There,

the Corps had been allowing the city of Atlanta, in increments, to increase diversions from the Lake Lanier/Buford Dam project for municipal water supply. These decisions were not subject to a formal reallocation process, thus confronting downstream states with an accomplished fact upon which a major upstream economy became reliant. In the Missouri River Basin, the upstream-downstream situation is reversed, with the large, growing economy located downstream. The Corps has, in increments, been passing water downstream in response to increased reliance there by groundwater irrigators, power plants, and M&I users. As in the case of Atlanta, these uses have become reliant on the new situation; in fact, the Corps, with these incremental decisions, has been reallocating the stream.

Unlike the situation with the Tri-State case, however, there is ample surplus water in the Missouri River Basin to accommodate a reallocation. The question is how to formalize the change. The present abundance in the reservoirs was intended originally for large irrigation projects in the Dakotas, which will never happen. The Corps needs to formally reallocate a share of reservoir waters in an amount necessary to cover the pass-downs already in effect, with ample surplus for future needs as well. The upstream states will not like it, but they will lack legal standing to complain.

In 1944, there was no plan beyond construction, little hydrologic knowledge and no decision-making process with regard to river basin management. That has changed. The Corps has had to respond to an expanding list of management objectives, including ecosystem restoration, recreation, and rapidly increasing demand for M&I water. It has now changed further because the Tri-State decision compels the Corps to abandon informal allocation in favor of a formal process. Clearly, decision-making over water uses and river flows is now concentrated with the Corps. States and tribes may regret the gradual transfer of authority over basin management, but they lack a unified counter-position. Furthermore, new and complicating factors are in play. Climate change requires that river basins be managed flexibly,

and with shorter response times. The Missouri River reservoirs contain the largest unallocated reserves of fresh water in the United States and decisions about their use cannot be managed by the individual states.

There is opportunity here. If the Corps has the power to allocate the Missouri River's waters and its flows, it would appear to be in a position to serve as a new type of administrative water court, allocating to each contesting tribe, state, and private user its legal entitlement to the river. (Historically, advocates called for a Missouri Valley Authority, patterned after the Tennessee Valley Authority, to serve this role.) Subject always to judicial review, these decisions can become final, thus avoiding the wrangling seen in the Colorado and other western basins. Such a stark alteration of process seems radical in a system so tied to the status quo, the hackneyed jargon of western water law, and the traditional catalog of methods for resolving interstate disputes. It does, however, offer advantages.

This new layer of decision-making does not rise to the level of quantification, but it is just a few steps from it. At some foreseeable future date, the Corps will be asked to permit diversions for a megaproject, and the Tri-State process will provide a forum in which to support or contest the application. The resulting judicial review has the potential to add an unprecedented new layer to the Law of the Missouri River.

Basin management requires some system for "equitable risk sharing," integrated water resources management, and clear decision-making. Conflict in the Missouri River Basin, with its states and tribes, varying climates and economies, as well as new challenges from climate change and increased demand, likely cannot be resolved by the usual avenues of compact or judicial decree. The Tri-State Litigation presents an alternative in the form of decision-making in the hands of the Corps.

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