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PFAS UPDATE

IMMINENT REGULATION AND LITIGATION DEVELOPMENTS

by Jeff Kray, Jessica Ferrell, Sara Cloon, and Martha Geyer, Marten Law (Seattle, WA)

INTRODUCTION

Polyfluorinated and perfluorinated substances, more commonly known as PFAS, continue to garner attention as a health and environmental risk around the world.[1] Investigating and regulating PFAS have recently become priorities for federal and state policy makers. PFAS in the environment, including drinking water supplies, have triggered thousands of lawsuits.

This article covers responses to PFAS issues by state and federal regulators, the courts, and a wide range of stakeholders, and the likely impacts that PFAS regulation will have on site remediation and environmental litigation for years to come.[2]

BACKGROUND

PFAS Contamination Sources

PFAS is a generic term for a large family of synthetic, highly mobile, and persistent chemicals that do not break down in the environment naturally. The widespread presence and persistence of PFAS has the potential to be harmful to the environment and human health in a variety of ways.[3] With exposure, PFAS accumulate in the blood and liver. Because PFAS are not metabolized, they can bioaccumulate in terrestrial food webs and in marine mammals; thus, organisms higher in the food chain generally have higher PFAS levels than those lower in the food chain.[4]

To date, the two most well-characterized PFAS contamination sources are discharges from manufacturing plants and releases of aqueous film-forming foam (AFFF), a substance designed and intended for use on fuel fires.

Due largely to the use of AFFF for training and fighting fuel fires, drinking water on and around military installations and civilian airports has been contaminated with PFAS. As of October 2021, the US Department of Defense (DOD) had identified 699 active or closed installations with known or suspected PFAS contamination.[5] The 2022 National Defense Authorization Act (NDAA) allocates $500 million for PFAS testing at military sites.[6] More will be identified through that process. The Government Accountability Office (GAO) estimated remediation costs for these installations to reach more than $2.1 billion in 2021, in addition to $1.1 billion actual PFAS costs incurred in 2020. GAO projects that costs will increase significantly year by year.[7]

Additionally, in 2020, DOD provided $40 million to the Agency for Toxic Substances and Disease Registry (ATSDR) to conduct exposure assessments of eight current and former military installations and a nationwide health study.[8] The 2021 NDAA also included $15 million to support the Center for Disease Control (CDC) and ASTDR's nationwide PFAS health study.[9]

PFAS

Remediation Issues

Improving Response

Roadmap

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Editors: David Light
David Moon

Phone
541/ 517-5608
Fax
541/ 683-8279
email
TheWaterReport@yahoo.com
website:
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Developing Remediation Technologies

PFAS water supply remediation projects have typically used carbon filters that more effectively catch long-chain PFAS (containing eight or more carbon atoms), but the filters have proven less effective for the short-chain substitutes.[10] Even after PFAS have been removed from water or soil, PFAS-laden filters must be recycled or disposed, and unrecycled filters and other wastes must be disposed. Currently, much of this waste ends up in landfills, which can create additional contamination pathways since PFAS from waste disposal can seep into the ground, particularly in unlined landfills.[11] Further research is underway to develop cost-effective destructive technologies for PFAS that result in complete mineralization; *e.g.*, removing the fluorine atoms from the carbon atoms.[12] Federal and state policymakers have considered incineration as a potential disposal method, but neither its efficacy nor safety have been established. Results suggest that it is difficult to completely destroy PFAS, and efforts to do so can result in further PFAS releases to the atmosphere.[13]

FEDERAL ACTIONS

While the US Environmental Protection Agency (EPA) and Congress have been aware of likely PFAS toxicity since the early 2000s, the federal regulatory and legislative response had, until very recently, been slow and skeletal. In recent months, PFAS regulation on the federal level has advanced significantly with robust efforts by the Biden EPA. In October 2021, EPA released its "PFAS Strategic Roadmap," detailing a comprehensive regulatory approach to "research, restrict, and remediate" certain PFAS in the environment.[14] To implement the Roadmap (detailed below), EPA will: initiate new studies to evaluate PFAS exposures and toxicity; develop enforceable drinking water standards for certain PFAS; designate two PFAS (PFOA and PFOS) as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); and, among other things, establish permitting requirements under the federal Clean Water Act for PFAS in wastewater and stormwater discharges. Federal PFAS policy actions since 2018 (*see* Kray, *TWR* #182, "*PFAS: A Primer*" for 2000-2018 details) include:

May/June 2018 — ATSDR Study and EPA Planned Actions: In May 2018, EPA was criticized for blocking publication of an ATSDR study that reportedly would have shown that PFAS endanger human health at a far lower level than the EPA health advisory limits.[15] Faced with this criticism, EPA announced in May 2018 several planned actions on PFAS, including:

- Establishing a binding maximum contaminant level (MCL) for PFOS and PFOA "in earnest"
- Classifying PFOA and PFOS as "hazardous substances" under CERCLA and developing groundwater cleanup levels "by the fall of this year" to guide the remediation of PFAS-contaminated sites
- "Tak[ing] action in close collaboration with our federal and state partners to develop toxicity values for GenX and PFBS," two other types of PFAS, "by December of this year"
- Visiting Michigan, New Hampshire, and other states affected by PFAS contamination to aid in drafting a "national PFAS management plan" "that will be done by the fall of this year"[16]

In June 2018, ATSDR released its draft toxicological profile for PFAS, which ultimately did derive toxicity values that were more stringent than the EPA health advisory limits.[17] But ATSDR's values are specifically to be used as guidance at hazardous waste sites, not for drinking water MCLs.

August 2018-Present — Congress Passes Military Spending Bills with PFAS Provisions: The 2019 NDAA required DOD to study PFAS contamination at military bases and develop cleanup plans.[18] The 2020 NDAA imposed new annual reporting requirements under EPA's Toxic Releases Inventory (TRI) program on the makers and users of 160 PFAS, including perfluorooctanoic acid (PFOA), perfluorooctane sulfate (PFOS), perfluorononanoic acid (PNFA), perfluorohexane sulfonic acid (PFHxS), and GenX.[19] All manufacturers and users of these PFAS who exceed the 100-pound threshold are required to report their releases. The NDAA includes provisions that allow EPA to potentially add more PFAS chemicals to the TRI inventory.[20]

The 2022 NDAA directs DOD to test for PFAS at military sites throughout the country, allocating $500 million for testing.[21] By the end of February 2022, DOD must report to Congress on the status of 50 primary sites. By December 27, 2024, DOD must complete a preliminary assessment and site inspection testing for PFAS at active and former military airports; National Guard Bases; installations controlled by the Army, Navy, Air Force, and Marine Corps; and down-gradient areas. The 2022 NDAA also creates a public reporting obligation related to testing, including a timeline and general location of planned PFAS testing. DOD then must publicly disclose all results from the PFAS testing. In addition to testing, the 2022 NDAA establishes a temporary moratorium on the incineration of AFFF and other materials contaminated by PFAS until DOD can implement EPA guidance. The 2022 NDAA also requires DOD to complete a review of its efforts to prevent and mitigate AFFF spills.[22]

PFAS

Management Plan

February 2019 — EPA PFAS Management Plan: On February 14, 2019, EPA released a "PFAS Management Plan" where it committed to:

- Propose a national drinking water regulatory determination for PFOA and PFOS;
- Initiate the regulatory development process for listing PFOA and PFOS as CERCLA hazardous substances;
- Develop interim cleanup recommendations to address groundwater contaminated with PFOA and PFOS;
- Finalize draft toxicity assessments for additional PFAS;
- Conduct new chemical reviews under the Toxic Substance Control Act (TSCA)[23] for new PFAS and issue rules for new PFAS uses until EPA determines whether the new use presents unreasonable risk;
- Provide technical assistance and resources to improve PFAS testing and monitoring methods and to enhance treatment and remediation technologies; and
- Employ an enforcement strategy to support state and local authorities in addressing ongoing PFAS release.[24]

Strategic Roadmap

EPA reaffirmed and substantially expanded on these commitments in its new "PFAS Strategic Roadmap," providing aggressive timelines that will accelerate what had been a slow process.[25]

February 2019 — EPA Cites Manufacturer for PFAS Emissions Under TSCA: EPA cited Chemours for failing to control PFAS emissions from plants in North Carolina and West Virginia.[26] The notice of violation alleged that Chemours violated the terms of a 2009 consent order that allowed the company to use GenX chemical substances in its manufacturing process only if it recovered and captured or recycled the chemicals at a 99% efficiency rate.[27]

Health Impacts

February 2019 — Government Launches Study of PFAS Health Impacts Near Military Bases: In February 2019, CDC/ATSDR announced that they would conduct exposure assessments in communities near current or former military bases that are known to have had PFAS in their drinking water.[28] The primary goal of these exposure assessments is to provide information to communities about levels of PFAS in their bodies, but the information gathered will also help inform future studies evaluating the impact of PFAS exposure on human health.[29]

Exposure Locales

In 2020 and 2021, ATSDR/CDC released findings from all eight exposure assessment locales: Hampden County, Massachusetts near Barnes Air National Guard Base; Berkeley County, West Virginia near Shepherd Field Air National Guard Base; New Castle County, Delaware near New Castle Air National Guard Base; Orange County, New York near Stewart Air National Guard Base; Spokane County, Washington near Fairchild Air Force Base; Lubbock County, Texas near Reese Technology Center; El Paso County, Colorado near Peterson Air Force Base; and Fairbanks North Star Borough, Alaska near Eielson Air Force Base.

Blood Samples

In Spokane County, PFAS levels in all tap water sampled were below EPA's 70 parts per trillion (ppt) lifetime health advisory level (LHAL). But blood samples for PFOA, PFOS, and PFHxS revealed concentrations much higher than the national average: PFOA levels were roughly six times higher, PFOS were roughly nine times higher, and PFHxS levels roughly 60 times higher.[30]

Data for six other locales mirrored that of Spokane County with tap water samples showing no PFAS concentrations above federal or state guidelines, and blood samples showing PFOA, PFOS, and PFHxS concentrations at various factors above the national average.[31] Data regarding tap water for one locale was delayed due to the COVID-19 pandemic.[32] For example, in all eight locales, PFHxS levels above the national average were found in 85% or higher for all participants. In three locales, PFOA and PFOS levels were found in roughly 60% of all participants, and even higher levels were found in the other locales with above 90% found in New Castle County.

Action Act Stalled

January 2020 and July 2021 — U.S. House of Representatives Passes the PFAS Action Act (H.R. 535): This bill would require EPA to do the following: create a drinking water standard for PFOA and PFOS within two years, list PFOS and PFOA under the Clean Water Act within two years, make PFOS and PFOA hazardous air pollutants under the Clean Air Act, and list PFOS and PFOA as hazardous substances under CERCLA.[33] The bill was passed again in the House in July 2021 and has yet to be considered for vote in the Senate. But there may be other legislative avenues for achieving some of these regulatory goals, such as the 2022 NDAA and other appropriation measures.[34]

Drinking Water

March 2020 — EPA Publishes "*Announcement of Preliminary Regulatory Determinations for Contaminants on the Fourth Drinking Water Contaminant Candidate List*": Two years ago, EPA published its preliminary determinations to develop drinking water regulations for PFOS and PFOA and discussed the possibility of regulating other PFAS.[35] EPA finalized these determinations in February 2021 and has two years to propose a non-enforceable MCL goal and an enforceable national primary drinking water regulation for PFOS and PFOA (i.e., an MCL).[36]

PFAS

New Use Rule

July 2020 — EPA Finalizes a TSCA Significant New Use Rule (SNUR) for Long-Chain PFAS: The SNUR requires manufacturers to notify EPA at least 90 days before manufacturing, processing, or importing certain long-chain PFAS for any use that has not been ongoing since December 31, 2015. It also requires manufacturers to notify EPA before importing certain PFAS to be used for surface coating or carpets. [37] In addition, PFAS affected by the SNUR are captured by the TRI program, requiring manufacturers and users to report releases above the 100-pound threshold.[38]

Roadmap Actions

October 2021 — EPA Announces its "Strategic Roadmap": The objectives set forth in the Roadmap anticipate a three-year regulatory and implementation timeframe. EPA centers its Roadmap on three guiding statements of intent: "increase investments in research, leverage authorities to take action now to restrict PFAS chemicals from being re leased into the environment[,] and accelerate the cleanup of PFAS contamination."[39]

The Proposed Strategic Roadmap Actions Under Each Authorizing Statute Are As Follows:

Safe Drinking Water Act (SDWA)

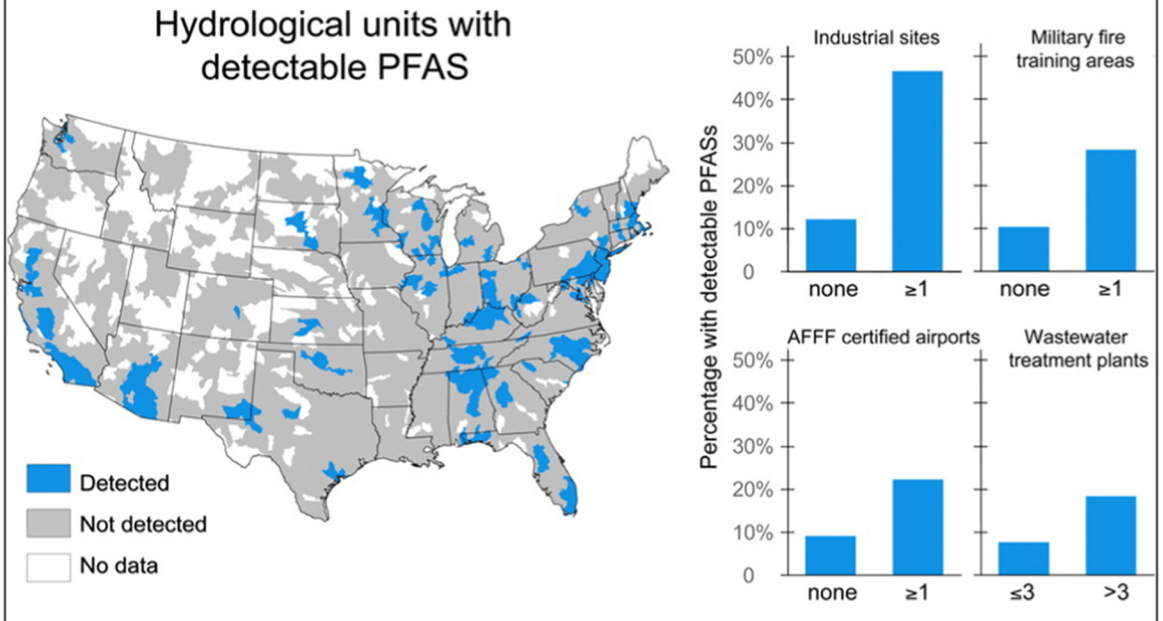
Drinking Water Standard

- **Establish an enforceable drinking water standard** (MCL) under the SDWA for PFOA and PFOS by 2023. EPA expects to propose a rule in Fall 2022 and finalize it in Fall 2023. This proposed timeline would meet the statutory mandate under the proposed PFAS Action Act, H.R. 2467.[40]
- **Publish health advisories**, similar to the existing 70 ppt advisory for PFOA and PFOS, for GenX (a specific short-chain PFAS compound) and five other PFAS (PFBA, PFHxA, PFHxS, PFNA, and PFDA). These non-enforceable drinking water advisories are expected in Spring of 2022 and will be based on final toxicity assessments of PFBS and GenX that were released in October 2021.[41]

More Testing

- **Expand public water system testing**. Under the Fifth Unregulated Contaminant Monitoring Rule (UCMR), water systems serving 3,300 or more people and 800 representative public water systems serving fewer than 3,300 will test for 29 PFAS in drinking water for a 12-month duration from January 2023 through December 2025. This testing is designed to compile a sufficient raw data set for EPA to conduct site-specific assessments of contamination, including disproportionate impacts on certain groups, and generally better understand PFAS impacts in public water systems. EPA issued the final rule in December 2021.[42]

DETECTION OF PFAS AT INDUSTRIAL, MILITARY, AIRPORT, AND WASTEWATER TREATMENT PLANT SITES ACROSS THE UNITED STATES



Adapted from: Kurwadkar et al., "*Per- and Polyfluoroalkyl Substances in Water and Wastewater: A Critical Review of Their Global Occurrence and Distribution*" Science of the Total Environment 809 (February 2022) 151003. *See* http://dx.doi.org/10.1016/j.scitotenv.2021.15100

PFAS

Effluent Limits

Wastewater & Stormwater

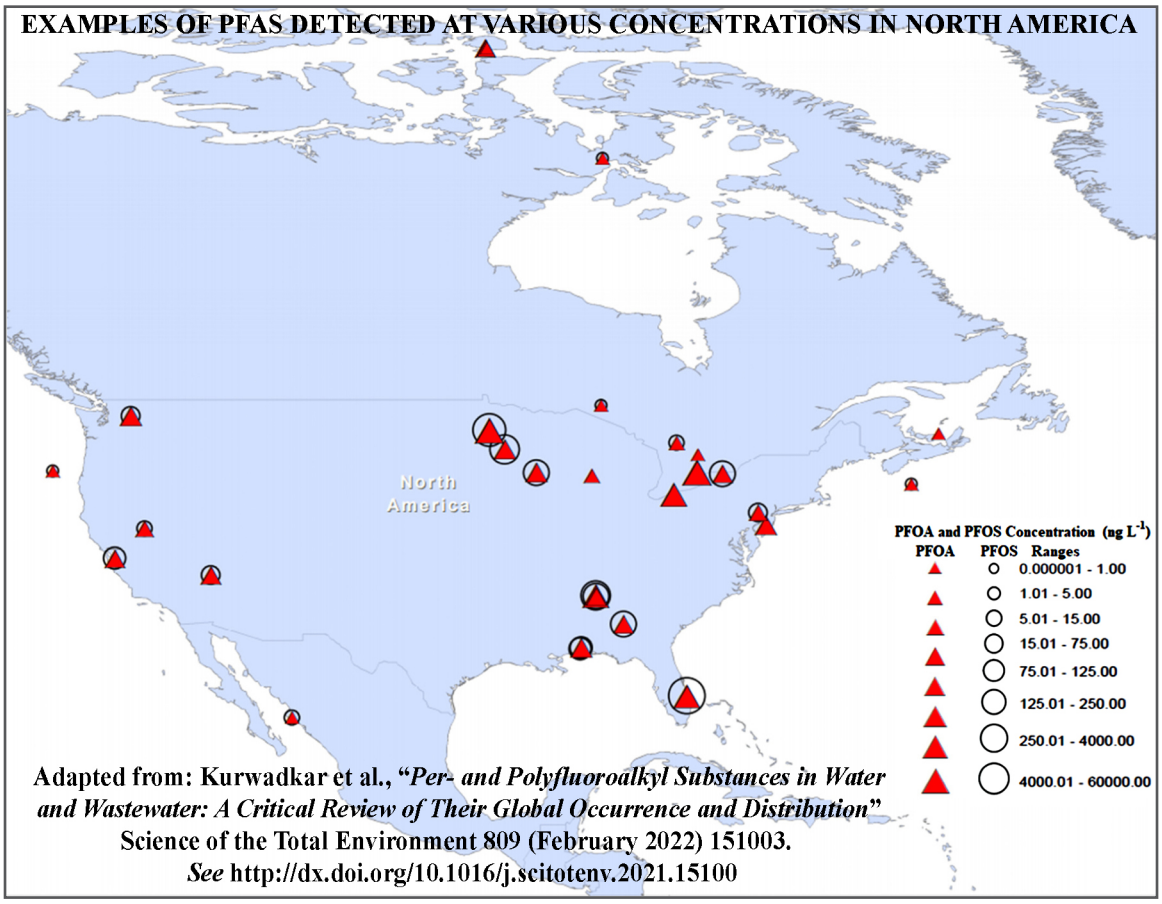
Hazardous Designation

Clean Water Act (CWA)

- **Restrict PFAS discharges from industrial sources** through EPA's Effluent Limitations Guidelines (ELGs) Program by the end of 2024. Through ELGs, EPA will impose technology-based limits on PFAS in wastewater discharge into surface waters and by municipal sewage treatment facilities. EPA has established timelines for nine industrial categories, projecting complete PFAS phaseout in the pulp, paper, and airport industries by 2024.[43]
- **Leverage federal and state National Pollutant Discharge Elimination System (NPDES) permitting** to reduce PFAS discharges to waterways by Winter of 2022. EPA will propose monitoring requirements for 40 PFAS under new and existing NPDES permits where PFAS are expected to be present in wastewater and stormwater discharges. EPA will issue new guidance recommending that state-issued permits also require monitoring for the same 40 PFAS.[44] Further, EPA will develop ambient water quality criteria for PFAS: criteria for aquatic life are expected in Winter 2022 and human health criteria in Fall 2024.
- **Regulate PFOA and PFOS in biosolids**: This action would be based on a risk assessment to be completed by Winter 2024. Any resulting rules would govern solid waste permitting and standards at wastewater treatment facilities.[45]

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- **Designate PFOA and PFOS as hazardous** by Summer 2023. EPA expects to release a proposed rule by Spring 2022 and establish a final rule by Summer 2023. The agency is also considering designating additional PFAS, including PFAS precursors, as hazardous under CERCLA. It expects to seek public input on the issue in Spring 2022.[46] In January 2022, EPA forwarded to the White House Office of Management and Budget (OMB) a proposed rule to designate PFOA and PFOS as hazardous under CERCLA.[47]



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PFAS

Toxics

PFAS Database

Approvals Review

"Chemicals of Special Concern"

Air Emissions Monitoring

Environmental Justice

RCRA Petition

"GenX" Chemicals

Testing Strategy

Health Effects Review

Toxic Substances Control Act (TSCA)

- **Publish a national PFAS testing strategy** (accomplished in October 2021 as discussed below).[48]
- I**dentify PFAS categories** to accelerate public health protection and facilitate better remediation and treatment strategies. EPA will categorize PFAS by developing categories: 1) for further hazard assessment using toxicity and toxicokinetic data; and 2) based on removal technologies using existing understanding of treatment, remediation, destruction, disposal, control, and mitigation principles. Additionally, EPA plans to develop a PFAS database listing key characteristics of individual PFAS and category assignments.[49]
- R**igorously review PFAS chemicals** to ensure compliance with updated health and safety requirements. EPA will no longer allow low volume exemptions for new PFAS to enter the market without rigorous health and safety review. EPA will also apply a premanufacture notice review process to all new PFAS.[50]
- R**eview previous PFAS approvals and close loopholes** for abandoned uses. EPA will review PFAS it previously approved, including those it reviewed before the 2016 TSCA amendments, and will issue TSCA Section 5(e) orders for PFAS approved under a significant new use notice. The orders will require compliance with certain safety measures as a condition for allowing the significant new use to continue. EPA will also classify inactive PFAS or potentially all uses associated with an inactive PFAS under a SNUR as early as Summer 2022, requiring anyone attempting to use inactive PFAS to comply with updated health and safety determinations.[51]
- E**nhance PFAS reporting** under the TRI by Spring 2022. EPA will propose a rulemaking in 2022 to categorize PFAS on the TRI as "Chemicals of Special Concern" and to remove de minimis eligibility from supplier notification requirements for all chemicals of special concern. EPA will also announce another rulemaking adding more PFAS to the TRI in 2022, as required by the 2020 NDAA.[52]

Clean Air Act (CAA)

- **Decide whether to list certain PFAS as hazardous air pollutants** under the CAA and evaluate potential mitigation technologies by Fall 2022. EPA will base its decision on monitoring stack emissions and ambient PFAS concentrations and seek to increase its understanding of PFAS transport and exposure pathways.[53]

Proposed Environmental Justice-Based Evaluation

- **Investigate how PFAS contribute to the cumulative pollution burden on communities disproportionately impacted by environmental issues**. For example, under SDWA UCMR 5, it will expand the number of participating drinking water systems seeking to improve the agency's ability to identify differential impacts to various communities. EPA intends to employ data mapping tools like EJSCREEN to determine which communities are disproportionately affected by PFAS air pollution and will meet with communities affected by PFAS in each EPA region, as recommended by the National Environmental Justice Advisory Council.[54]

October 2021 — EPA Responds to New Mexico's Petition for Hazardous Listing Under the Resource Conservation and Recovery Act (RCRA): In response to a petition from Governor Michelle Lujan Grisham of New Mexico, EPA announced on October 26, 2021 that it will initiate a rulemaking to add PFOA, PFOS, GenX, and PFBS as hazardous constituents under RCRA. EPA will also issue a rulemaking to clarify that EPA's RCRA Corrective Action Program has the authority to require investigation and cleanup for wastes that meet the statutory definition of hazardous waste,[55] which would allow EPA to take cleanup action for emerging contaminants like PFAS under the statute.[56]

October 2021 — EPA releases its GenX Toxicity Assessment: EPA has finalized the human health toxicity assessment for Hexafluoropropylene Oxide (HFPO) Dimer Acid and its Ammonium Salt, also known as "GenX" chemicals. GenX is a trade name for a processing aid technology used to make high-performance fluoropolymers without the use of PFOA. The final chronic reference dose for GenX chemicals is 0.000003 mg/kg-day, which is much lower than the 2018 draft reference dose (0.00008 mg/kg-day). Compared to existing toxicity assessments for PFOA, PFOS, and PFBS, the GenX chronic reference dose is lower (100 times lower than the dose for PFBS). EPA is currently reevaluating toxicity information for PFOA and PFOS and may release revisions to its 2016 assessment.[57]

October 2021 — EPA Releases National PFAS Testing Strategy: EPA developed a testing strategy to help identify and select PFAS for which the agency will require PFAS manufacturers to perform testing using its TSCA section 4 authority. The strategy groups similar PFAS into categories to help identify PFAS chemical for testing and allows EPA to establish toxicity levels. EPA also planned to order tests on 24 PFAS by the end of 2021, which it accomplished in December as described below.[58]

November 2021 — EPA Asked its Science Advisory Board to Review Draft Scientific Documents on the Health Effects of PFAS: EPA drafted four documents with recent scientific data and new analyses

PFAS

Impact Testing

on the negative health effects from low levels of exposure of PFOA and PFOS, and a conclusion that PFOA is a likely carcinogen. After peer review, the information will inform the development of MCL goals and national primary drinking water regulation for PFOA and PFOS.[59]

December 2021 — EPA Grants Petition to Compel PFAS Testing. In response to a petition from six North Carolina health and environmental groups requesting impact testing on 54 chemical substances manufactured by Chemours, EPA exercised its TSCA authority to compel the chemical manufacturer to test 24 categories of PFAS pursuant to the National PFAS Testing Strategy. This testing includes 30 out of the 54 petition chemicals, and subsequent testing may cover nine other petition chemicals.[60]

January 2022 — EPA Announced the Automatic Addition of Four PFAS to the TRI List. EPA added PFBS, potassium perfluorobutane sulfonate (CASRN 29420-49-3), CASRN 65104- 45-2, and CASRN 203743-03-7 to the TRI list. Facilities that are subject to reporting requirements for these chemicals must rack their activities as required by the Emergency Planning and Community Right-to-Know Act and reporting forms for these PFAS are due to EPA by July 1, 2023.[61]

STATE ACTIONS

State Regulations

Although the development of enforceable PFAS regulations at the federal level is now underway, many states have already enacted their own regulations and legislation, and more continue to do so.[62] These regulations address PFAS management issues including: exposure limits for drinking water; groundwater cleanup standards; hazardous waste disposal; prohibitions of PFAS in products; and children's products liability. As of this writing, at least 16 states regulate PFAS in drinking water through MCLs, screening, or action levels (AK, CA, CT, DE, MA, MI, MN, NV, NJ, NH, NC, ME, OH, RI, VT, IL); seven have enforceable drinking water MCLs (NJ, NY, MI, NH, VT, MA, ME); 29 have enacted or proposed prohibitions on the discharge and/or use of AFFF with some exceptions (AZ, AR, CA, CO, CT, DE, GA, IL, IN, IA, KY, LA, ME, MD, MI, MN, NV, NH, NJ, NY, NC, OH, PA, TX, VT, VA, WA, WV, WI);[63] and five have unenforceable health guidelines for drinking water (CT, FL, MN, NC, OH, IL).[64] This year, approximately 32 states are considering 210 bills related to PFAS.[65]

Drinking Water Standards

New Jersey has set a binding drinking water standard for three PFAS: 13 ppt for PFNA; 13 ppt for PFOS; and 14 ppt for PFOA.[66] New Hampshire adopted drinking water MCLs of 12 ppt for PFOA, 15 ppt for PFOS, 18 ppt for PFHxS, and 11 ppt for PFNA.[67] In March 2020, Vermont adopted an MCL of 20 ppt for five PFAS combined: PFOS; PFOA; PFNA; PFHxS; and perfluoroheptanoic acid (PFHpA).[68] In July 2020, New York approved its proposed MCL of 10 ppt for PFOS and PFOA[69] and Michigan approved its proposed MCLs for seven PFAS, including: 6 ppt for PFNA, 8 ppt for PFOA, 16 ppt PFOS, 51 ppt PFHxS, and 420 ppt for PFBS.[70] Shortly after, Massachusetts set an MCL of 20 ppt for PFOS, PFOA, PFHxS, PFNA, PFHpA, and PFDA combined. In June 2021, Maine followed suit, setting the same total standard for the same six PFAS.[71]

Permit Standards

Several states have proposed or are proposing binding standards. For example, Wisconsin, Ohio, and Pennsylvania have initiated rulemaking for PFOS and PFOA MCLs. Pennsylvania's Environmental Quality Board approved a proposed rule on November 16, 2021 to set the limit for PFOA at 14 ppt and PFOS at 18 ppt, while Wisconsin proposes a 20 ppt limit for PFOS and PFOA combine and is considering regulations for 16 other PFAS.[72] Further, Delaware, which currently follows EPA's limit of 70 ppt recently passed legislation directing its Division of Public Health to establish binding MCLs by the end of July 2022.[73]

Disparities

These disparities between states' approaches highlight the differing risk tolerances in the face of scientific uncertainty surrounding PFAS toxicity.

Advisory Levels (Non-Binding)

Many states have also issued non-binding health advisory limits or binding notification limits for drinking water. For example, California has established a notification limit of 6.5 ppt for PFOS and 5.1 ppt for PFOA.[74] When drinking water exceeds these limits, the drinking water system must notify the water system's governing body and the governing body of any local agency that has jurisdiction over the areas supplied with the impacted drinking water.[75] Similarly, Washington has proposed **s**tate **a**ction **l**evels (SALs) for five PFAS detected in drinking water: 10 ppt for PFOA; 15 ppt for PFOS; 14 ppt for PFNA; 70 ppt for PFHxS; and 1,300 ppt for PFBS.[76] On November 17, 2021, the Washington State Board of Health adopted the proposed SALs, which became effective on January 1, 2022.[77]

The following states also have non-binding advisory levels for PFAS:

- Connecticut: 70 ppt (PFOA, PFOS, PFNA, PFHxS, PFHpA combined)[78]
- Florida: 70 ppt (PFOA + PFOS)[79]
- Minnesota: 35 ppt (PFOA); 15 ppt (PFOS); 47 ppt (PFHxS); 2000 ppt (PFBS); and 7000 (PFBA)[80]
- North Carolina: 140 ppt (GenX) [81]
- Ohio: 70 ppt (PFOA, PFOS); 700 ppt (GenX); 21 ppt (PFNA); 140 ppt (PFHxS); 140,000 ppt (PFBS)[82]
- Illinois: 2,100 ppt (PFBS); 140 ppt (PFHxS); 14 ppt (PFOS); 2 ppt (PFOA); and 560,000 ppt (PFHxA)[83]

PFAS

Cleanup Levels

Several states have also finalized rules setting cleanup levels for PFAS in soil and/or groundwater, including Alaska,[84] Michigan,[85] and New Jersey.[86] Like drinking water standards, these cleanup standards vary and demonstrate differing risk tolerances.

Products Regulation

At least seventeen states have enacted or proposed regulations of PFAS in products, subject to exceptions (AZ, CA, CT, IA, ME, MD, MA, MI, MN, NY, OR, PA, RI, VT, VA, WA, WI).[87] For example, Connecticut enacted legislation prohibiting, after December 31, 2023, the sale of food packaging to which PFAS has been added.[88] California similarly enacted legislation that will take effect on January 1, 2023, prohibiting manufacturers from intentionally adding PFAS to products in certain instances and implementing labeling and reporting requirements for cookware.[89]

Food Packaging

In addition, the Washington State legislature directed the State's Department of Ecology to publish the findings of an alternative assessment that evaluates PFAS replacements for food packaging made from paper or other plant fibers by January 2020. Ecology did not complete the alternative assessments by this date but submitted the report in 2021, so the prohibition against the sale of specific PFAS-containing food packaging applications will take effect in 2023.[90] Ecology has identified safer alternatives for four types of packaging, which will be banned as of February 2023.[91]

"Hazardous Substance" Interpretation

Wisconsin and Washington interpret their hazardous waste cleanup statutes to include PFAS as a "hazardous substance."[92] In October 2021, Washington's Department of Ecology announced that it interprets its cleanup statute — i.e., the State's Model Toxics Control Act (MTCA) — and related regulations to encompass the entire class of PFAS as hazardous.[93] Under MTCA, a "hazardous substance" includes anysubstances defined under the Dangerous Waste Regulations,[94] which include "any liquid, solid, gas, or sludge, including any material, substance, product, commodity, or waste, regardless of quantity, that exhibits any of the physical, *chemical*, or biological properties described in WAC 173-303- 090 or -100."[95] (emphasis added). Thus, Ecology reasons that PFAS are halogenated organic compounds that meet the chemical property of persistence under the Dangerous Waste Regulations.[96] But this new MTCA interpretation does not immediately require PFAS remediation or reopening of old contaminated sites. Ecology must first set enforceable cleanup levels and will look to the SALs as instructive on what levels are injurious to human health and the environment.

Washington State Action Plan

Washington followed this announcement with publication of its PFAS Chemical Action Plan in November 2021, which identifies four regulatory priorities: ensure safe drinking water; manage environmental contamination; reduce PFAS in consumer products; and evaluate PFAS waste management.[97] To achieve those priorities, Ecology will:

- establish soil and groundwater cleanup levels;
- provide technical assistance to drinking water purveyors on PFAS;
- work with industry and manufacturers to reduce PFAS in products and eliminate releases;
- expand manufacturer reporting requirements;
- conduct wastewater treatment plant effluent sampling and establish monitoring requirements;
- develop a sampling program for landfill leachate and biosolids; and
- partner with low-income communities and communities of color, which are disproportionately exposed to PFAS, to investigate and mitigate contamination.[98]

Other states, including Alaska, New York, New Jersey, Delaware, Vermont, and Colorado, have classified PFOA, PFOS, and other specific PFAS as hazardous, subject to remediation requirements.[99] Minnesota has introduced legislation to designate the class of PFAS as hazardous, but the legislature has yet to take any action on the bills.[100]

LITIGATION

Because federal and state standards do not yet comprehensively provide relief to those impacted by PFAS contamination, many have turned to litigation. The status of PFAS regulation under federal and state laws differs and is in many cases unclear and complicated. Therefore, relatively straightforward cost recovery claims under CERCLA or state law equivalents are not yet readily available — despite the fact that DOD, for example, "follows the federal cleanup law, ...CERCLA, also known as 'Superfund'[] to address the health risks associated with DoD releases of PFOS and PFOA."[101] This has prompted litigation under other common law or statutory schemes, including torts such as trespass, negligence, nuisance, and products liability. Additionally, because PFAS contamination is a particular issue near military installations, plaintiffs have brought constitutional takings and Federal Tort Claims Act claims. Thousands of cases related to PFAS are pending in courts across the country.

Tort Litigation

"Takings" Claims

Suits by Drinking Water Providers

Water Providers

Municipalities and drinking water providers have brought claims against entities that allegedly caused or contributed to contamination at various sites. For example, in Washington, the City of Airway Heights,

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Lakewood Water District, and the City of Dupont each filed claims against the United States under the Federal Tort Claims Act for AFFF contamination. The United States denied the claims and they have each now filed suit in federal court against the United States and PFAS manufacturers.[102]

State Litigation

State Lawsuits

States have begun to bring suits to recover cleanup costs and natural resource damages caused by PFAS contamination. For example, the State of New York is suing six manufacturers of PFAS-containing firefighting foam to recover the cost of cleaning up environmental contamination caused by the use of that firefighting foam.[103] In its suit, filed on June 20, 2018, New York seeks more than $38.8 million plus punitive damages. New York claims that the manufacturers knew, or should have known, that their products containing PFOA and/or PFOS, when used as intended, would likely injure and/or threaten public health and the environment.[104] In April 2019, the case was transferred from the Northern District of New York to the multidistrict litigation in the District of South Carolina, which consolidates all claims around the country involving firefighting foam.[105]

Settlements

Other litigation against manufacturing defendants has settled for millions of dollars. In 2018, Minnesota settled a lawsuit against 3M for $850 million after PFAS contaminated drinking water and natural resources.[106]

In March 2021, the City of West Sacramento settled for $1.4 million against a manufacturer that created chrome bumpers after runoff fluids contaminated .03 acres of the site.[107] In April 2021, a pulp and paper company settled for $11.9 million for dumping PFAS waste and contaminating a Michigan city's water supply.[108]

The State of Delaware settled claims for PFAS release against DuPont, Chemours, and Corteva for $50 million in July 2021.[109] Also in July 2021, a New York town reached a $65 million settlement with 3M, Honeywell, and Saint-Gobain related to PFOA-containing foam emitted into the air and groundwater, including $22.8 million for medical monitoring.[110]

AFFF Multi-District Litigation

Consolidated Proceedings

One way that a defendant can regain some level of organization over an expanding liability landscape is by temporarily consolidating multiple cases with common questions of fact into a Multi-District Litigation (MDL).[111] While an MDL by statute only consolidates the pre-trial proceedings (the cases are remanded to the original court for trial), its practical effect is to focus discovery and provide a single consolidated venue to evaluate and often settle all current and future claims — such as occurred in the asbestos products liability litigation and mega-settlement.[112]

In December 2018, the Judicial Panel on MDL, at the request of defendants Tyco Fire Products, Chemguard, 3M, and others, consolidated 75 PFAS personal injury cases pending in courts across the country into a single MDL: *In re: Aqueous Film-Forming Foams Products Liability*.[113] This MDL now contains nearly 2,000 cases in which plaintiffs allege harm caused by the defendants from groundwater contamination due to the manufacture and use of PFAS-containing firefighting foams, and additional effects from AFFF contamination. This MDL continues to sweep in other AFFF-related claims such as class action torts and products liability claims against firefighting foam manufacturers as additional contamination and impacts are identified and more suits filed.

STATE/FEDERAL CONFLICT

DOD Efforts Vary

DOD has recently increased efforts towards PFAS cleanup and finding PFAS-free firefighting solutions.[114] In litigation, however, it has sought in some instances to minimize its liability and circumvent state enforcement.

New Mexico Complaint

On January 17, 2019, the United States filed a complaint on behalf of the Air Force seeking to invalidate a permit that New Mexico issued to Cannon Air Force Base under the New Mexico Hazardous Waste Act.[115] The United States claims that the State of New Mexico acted outside the scope of its authority under RCRA by including PFOS and PFOA in the definition of "hazardous waste" subject to corrective action in the Air Force Base's permit. The Air Force also alleges in its complaint that enforcement of the permit conditions relating to PFAS is barred by sovereign immunity because these compounds are outside of the scope of the federal waiver.[116]

State Enforcement

But this injunctive suit did not discourage the state's enforcement efforts. On February 6, 2019, the New Mexico Environment Department issued a Notice of Violation to Holloman Air Force Base for groundwater contamination with PFOA and PFOS in violation of state water quality standards.[117] On March 5, 2019, New Mexico filed a lawsuit of its own against the United States, alleging that the Air Force violated New Mexico's hazardous waste act by failing to address previous use of the chemicals.[118] The state seeks, among other things, injunctive relief to remediate the PFAS contamination.[119] In March 2020, New Mexico opposed transfer of the case to the AFFF MDL because it had not asserted claims against PFAS or

Case Transfer Opposed

PFAS

RCRA Petition

"Hazardous" Classification

Developing Regulation & Policies

AFFF manufacturers or distributors; the claims were not consistent with the AFFF MDL; and there were factual questions specific to the claims and defense. Judge Gergel still transferred the case in July 2020 because New Mexico alleges groundwater contamination near military bases from AFFF and two of the Air Force bases are already at issue in the AFFF MDL.[120] New Mexico moved for leave to seek a preliminary injunction against the Air Force, which was denied.[121]

On June 23, 2021, New Mexico Governor Michelle Lujan Grisham became the first governor in the history of RCRA to use the petition process when she filed a petition to classify PFAS as a hazardous constituent.[122] In his response to Governor Lujan Grisham's petition, EPA Administrator Michael Regan announced that EPA "intends to propose a partial petition grant" by proposing to classify PFOA, PFOS, GenX, and PFBS as hazardous under RCRA and clarifying EPA's authority to require cleanup of emerging contaminants, including PFAS, under the RCRA Corrective Action Program.[123] This announcement provides New Mexico with a new strategy to address PFAS contamination outside the AFFF MDL, such as the potential ability to direct the Air Force to investigate and clean up hazardous releases where EPA believes the contaminant meets the statutory definition of hazardous waste but has not yet been listed as a hazardous constituent or the creation of a Superfund site.

CONCLUSION

Federal and state regulators' previously slow progress toward designating PFAS as hazardous and regulating the sources of these contaminants has created confusion for water suppliers, wastewater treatment operators, landowners, manufacturers, and the public for years. Now that federal and state PFAS policies and regulations are rapidly developing, PFAS manufacturers, downstream users, water providers, and publicly owned treatment works will have to adapt to a rapidly changing regulatory landscape. While new permit requirements, drinking water limits, and cleanup standards may present challenges, they should also enable more certainty. These new regulations will also provide government agencies with new enforcement tools and litigants with new claims and defenses and, to some extent, resolve some scientific uncertainty at the center of current PFAS litigation and regulatory actions.

For Additional Information:
Jeff Kray, Marten Law, 206/ 292-2608 or jkray@martenlaw.com
Jessica Ferrell, Marten Law, 206/ 292-2636 or jferrell@martenlaw.com
Sara Cloon, Marten Law, 206/ 292-2600 or scloon@martenlaw.com
Martha Geyer, Marten Law, 206/ 292-2611or mgeyer@martenlaw.com

Jeff Kray is managing partner at Marten Law's Seattlle office. He is a first-chair environment litigator with over 26 years of experience in water quality, water resources, and complex environmental litigation, with particular expertise in Clean Water Act permitting and regulatory compliance, CERCLA (Superfund) site remediation, and emerging contaminants.

Jessica Ferrell is managing partner at Marten Law's Seattlle office. A litigator with 15 years of courtroom experience and a background in environmental law and policy, Jess brings a proven track record of taking on and achieving successful results in a wide array of complex challenges, with emphasis on disputes arising under the Endangered Species Act, NEPA, the Clean Water Act, CERCLA, and state analogues.

Sara Cloon is an associate at Marten Law's Seattlle office. Her practice focuses on environmental litigation and regulatory compliance. She counsels public and private clients on: environmental remediation and cost recovery; water quality and water rights; emerging contaminants; and renewable energy development. She is experienced in resolving disputes arising under the Clean Water Act, RCRA, CERCLA, and other federal and state environmental laws.

Martha Geyer is an associate at Marten Law's Seattlle office practicing environmental, natural resources, and land use law. Martha counsels public and private clients on environmental remediation and cost recovery; water quality and water rights; emerging contaminants; renewable energy development; and federal, state, and local environmental laws and regulations. Her clients include municipal water providers, real estate developers, renewable energy companies, and a variety of individuals and businesses. She has worked on matters arising under the Clean Water Act, the Endangered Species Act, CERCLA, MTCA, RCRA, and other federal and state environmental laws.

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Kansas Transfers

WATER TRANSFERS IN KANSAS

by David M. Traster and Daniel J. Buller, Foulston Siefkin LLP
(Wichita & Kansas City, KS respectively)

Introduction

This article provides an overview of the process required for a water transfer in Kansas, using a proposed change from agricutural use to municipal use as a case study example.

Transfer Defined

The Kansas Water Transfer Act (KWTA) defines any proposal to move more than 2,000 acre-feet of water per year to a place of use 35 or more miles from the water's point of diversion as a "water transfer." All such water transfers are, pursuant to the KWTA, subject to numerous procedural requirements and extensive review, requiring approval by a panel of three state officials: the Chief Engineer of the Kansas Department of Agriculture, Division of Water Resources (DWR); the Executive Director of the Kansas Water Office; and the Secretary of the Kansas Department of Health and Environment.

Two-Step Process

In brief, navigating a "water transfer" of previously appropriated water rights under the KWTA is a two-step process. First, the applicant must receive contingent approval from DWR's Chief Engineer to "change" the authorized beneficial use and the authorized place of use to the new location. Second, the applicant must traverse the requirements of the KWTA, which are extensive and complex — albeit somewhat duplicative of the change application procedure.

History of the KWTA

Multipurpose Reservoir

Milford Reservoir, the largest lake in Kansas, played a central role the evolution of water regulation in Kansas. This US Army Corps of Engineers multipurpose reservoir is on the Republican River, a tributary to the Missouri River via the Kansas River. It has a drainage area of 3,796 square-miles, covers 15,700 surface acres, and contains 351,577 acre-feet in its conservation pool — some or all of which is allocated to the Kansas Water Office. Two-thirds of that water, 235,010 acre-feet (capable of producing approximately 71 million gallons per day), remains available for future use.

Water Source

The Reservoir feeds into the Kansas River, and major communities downstream from the Reservoir include Junction City, Manhattan, Topeka, Lawrence, and the Kansas City metropolitan area. While their water needs are currently being met from other sources, those communities look to Milford as a future source of water as needed.

Piping of Unallocated Water

In the early 1980s, several communities in Central Kansas began searching for additional water supplies to serve growing municipal demand. Lead by the City of Wichita, the largest City in Kansas, the cities commissioned a 1983 Feasibility Study proposing 114 miles of 60-inch pipeline to move up to 80 **m**illion **g**allons per **d**ay (mgd) of unallocated water from Milford Reservoir to supply water to Wichita and a number of other communities along the way.

Political Backlash

Due in part to political backlash following the proposal to allocate water from Milford Reservoir, the 1983 Kansas Legislature passed the KWTA, K.S.A. 82a-1501, et seq., which imposed numerous hurdles including an extensive review process and numerous preconditions. 1983 Kansas Session Laws, ch. 341.

Undaunted, the group formed a "Public Wholesale Water Supply District" (PWWSD) in 1988 and commissioned a second "Conceptual Study" — which was completed in 1991. The Study renewed the proposal to divert and treat up to 80 mgd of water from Milford Reservoir to supply cities in Central Kansas.

Hurdles & Amendments

The 1993 Legislature made substantial amendments to the KWTA, requiring:

- adoption of conservation plans and practices;
- rate structures that encourage the efficient use of water;
- adding a list of factors to be used to determine whether the benefits to the state for approving the transfer outweigh the benefits to the state for not approving the transfer; and
- setting out procedural requirements.

1993 Kansas Session Laws, ch. 219.

ASR Project

After the 1993 amendments, the City of Wichita left the PWWSD and turned its attention to an Aquifer Storage & Recovery (ASR) project that would provide a long-term water source without triggering the amended KWTA. Wichita's ASR project diverts surface and bank storage water from the Little Arkansas River when flows are high, treats it to drinking water standards, and injects the processed water into the Equus Beds aquifer north of the City. The City accumulates recharge credits that allow it to withdraw this additional water from the aquifer when needed, subject to certain conditions.

Kansas Transfers

While the KWTA was originally enacted in response to Wichita's water-transfer project and was largely intended to oversee the allocation of water not otherwise spoken for, it applies to all water transfers. Thus, the KWTA includes transfers that involve the transfer of established water rights owned by the applicant, such as the R9 Ranch water rights owned by the City of Hays and the City of Russell.

Water Transfers Governed by the Kansas Water Transfer Act

"Water Transfer" Defined

Under the current version of the law, in Kansas, anyone who wants to divert and transport more than 2,000 acre-feet of water per year more than 35 miles must comply with the KWTA. K.S.A. 82a-1501, *et seq*. *See* K.S.A. 82a-1501(a)(1) (defining "water transfer"); and K.S.A. 82a-1502(a) (prohibiting a water transfer until the same is approved pursuant to the provisions of the KWTA).

Transfer Process

Generally, this requires the water transfer applicant to submit a complete transfer application after which there will be a hearing. A hearing officer then issues an initial order recommending the transfer be approved — in whole or in part — or denied altogether. K.S.A. 82a-1503(b) sets out the timeline and procedure for the presiding officer's duties. K.S.A. 82a-1504(a) specifies the required findings and statutory guidance that the presiding officer must follow when issuing the initial order. As noted above, a hearing panel consisting of the Chief Engineer of DWR, the Secretary of the Kansas Department of Health and Environment, and the Director of the Kansas Water Office will then consider the hearing officer's initial recommendation and ultimately decide whether to approve the transfer or not and will then issue a final order. K.S.A. 82a-1501a(a). Any party to the proceeding may then appeal that final order to the Kansas courts.

"Complete" Application Requirements

Compliance with the KWTA is necessarily time consuming and costly, and requires any successful applicant to undertake extensive preparatory groundwork before applying for a water transfer. Kansas regulations impose a multitude of requirements for a "complete" water transfer application. *See, e.g*., K.A.R. 5-50-2(a)–(z) (listing 26 different requirements for a "complete" transfer application with numerous sub-requirements).

Among other things, these requirements include:

(1) preparing a plan of design and construction in sufficient detail to "enable all parties to understand the impacts of the proposed water transfer", K.A.R. 5-50-2(g);
(2) adopting and implementing conservation plans for at least 12 consecutive months prior to applying, that are consistent with Kansas Water Office guidelines, K.A.R. 5-50-2(p);
(3) water needs projections and plans for environmental mitigation, K.A.R. 5-50-2(r) and (t); and
(4) obtaining contingently-approved applications for new water appropriation rights or orders changing existing water rights to the proposed place and type of use. K.A.R. 5-50-2.

There are numerous additional requirements for an applicant to complete an application, and many more to obtain actual approval for the water transfer.

Hearing Officer

Once a "complete" application has been submitted, the transfer panel will request the appointment of a presiding officer, who will act as a fact finder for the water transfer hearing. K.S.A. 82a-1501a(b). The hearing officer conducts a hearing, which must be held in the basin of origin and is likely to draw interveners. *See* K.S.A. 82a-1503(d) and K.S.A. 82a-1503(c).

Benefits Comparison & Impairment Standard

"Benefits Comparison"

Substantively, the KWTA begins with a prohibition of any transfer that would result in the reduction of water for any present or reasonably foreseeable future beneficial use in the place from which the water is to be taken — *unless* the benefits to the state for approving the transfer outweigh the benefits to the state for denying the transfer. K.S.A. 82a-1502(a). This statewide "benefits comparison" plays a prominent role in the statute and regulations and includes a number of factors that must be considered. For example, in order for a water transfer application to be "complete," it must show "that the benefits to the state if the transfer is approved outweigh the benefits to the state if the transfer is not approved." K.A.R. 5-50-2(i).

Impairment Standard

A water transfer application will be denied if it would impair existing water rights. K.S.A. 82a-1502(b)(1).

Panel Review

Following the water transfer hearing, the hearing officer will render an initial order, which may approve a transfer for the full requested amount, approve the transfer for a smaller amount of water than requested, or deny the application in whole or in part. K.S.A. 82a-1504(a). The panel must then review the hearing officer's initial order and, within 90 days after its entry, enter a final order that is based on the record of the hearing. K.S.A. 82a-1504(b).

Kansas Transfers

"Vested" Water Rights

New Appropriation

Perfection of Right

Authorised v. Certified Acreage

Changes to Right

Water Access Issue

The Kansas Water Appropriation Act

The KWTA is separate from and subject to the Kansas Water Appropriation Act (KWAA), K.S.A. 82a-701, *et. seq*., enacted in 1945. The KWAA states that all water within the State is dedicated to the use of the people of Kansas and is subject to the State's control and regulation. K.S.A. 82a-702. The Act adopted the prior appropriation doctrine and made it applicable to both surface and groundwater. K.S.A. 82a-707. The prior appropriation doctrine provides seniority of water rights based on the age of right; i.e., "first in time, is first in right." It also recognized the use of water established prior to 1945 by allowing users to apply for and obtain "vested water rights." K.S.A. 82a-701(d), K.S.A. 82a-704a. The opportunity to have a vested right recognized closed in 1980. K.S.A. 82a-704a.

Until 1978, the KWAA did not prohibit the diversion of water without a water right. However, those who wished to obtain a "water appropriation right" to begin a new use of water after 1945 were required to file an application with the Chief Engineer, to obtain a permit, and perfect the right by beneficial use of the water in accord with the terms, conditions, and limitations set out in the permit. K.S.A. 82a-701(f), K.S.A. 82a-705, K.S.A. 82a-708a, and K.S.A. 82a-712-14.

Perfecting the right by beneficial use is important. For example, quantities for irrigation are based on acre-feet per acre depending on where the property is located in the State. Assume a permit states that the authorized place of use is 130 acres under a planned center pivot, the left circle (*see* Figure 1). Instead of placing the center pivot in the authorized location shown on the application, the center pivot is offset by the water user and just the area covered by the right circle is actually irrigated during the perfection period. When the water right is certified, however, only the quantity in the overlapping area counts. The authorized acres that were not irrigated don't count and the unauthorized acres that were irrigated don't count.

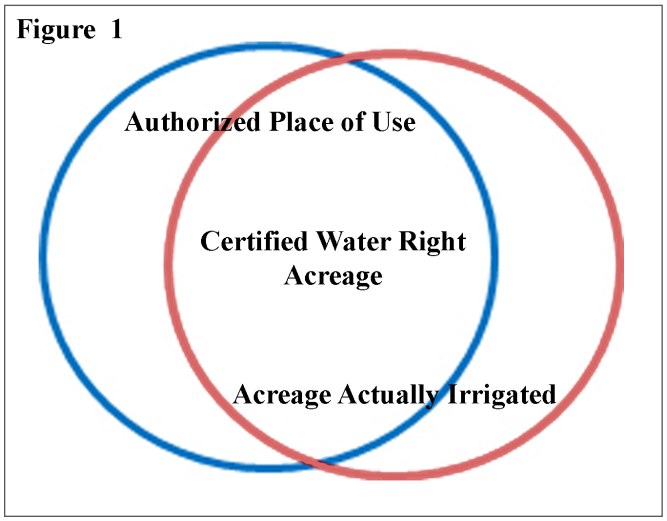


Figure 1: Center Pivots -- Overlapping Irrigated Area

With minor exceptions, including diversion of water for domestic use, after 1978, diversion of water without a vested right or a water appropriation permit has been unlawful. K.S.A. 82a-709. In 1957, the KWAA was amended to, among other things, allow the owner of a water right to apply for approval to change the place of use, the point of diversion, or the use made of the water without losing priority of the right so long as a proposed change is reasonable, will not impair existing rights, and draws water from the same local source of supply. K.S.A. 82a-708b.

The City of Hays, Kansas

Hays is the largest city in northwestern Kansas, with a population of over 21,000. Hays is approximately 11 miles north of the Smoky Hill River and 15 miles south of the Saline River. Big Creek, a tributary of the Smoky Hill River, runs through town.

The City of Hays is the only municipality in Kansas with a population greater than 15,000 that is not located over the Ogallala aquifer, or near a reliable flowing river, a reservoir, or a combination of different water sources. In other words, Hays is the only large community in Kansas without ready access to a reliable drought-resistant water source.

The City draws water from wells in the Smoky Hill River and Big Creek alluviums, and a small amount from wells in the Dakota formation southwest of the City. While Hays receives about 23.5 inches of precipitation annually, the Smoky Hill River begins in Eastern Colorado and drains areas with as little as 17 inches of annual precipitation with very high annual evaporation rates.

Kansas Transfers

Wellfield Recharge

Conservation Measures

Drought Resistance Need

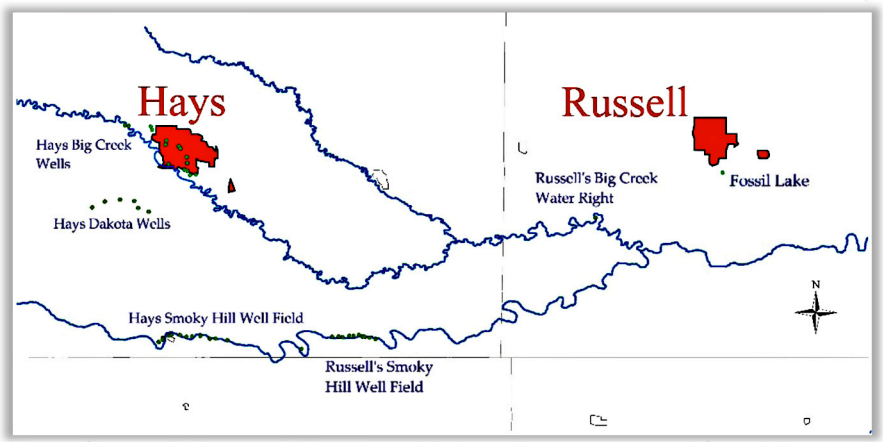
In 1949, the US Bureau of Reclamation began construction of the Cedar Bluff dam on the Smoky Hill River — about 27 miles upstream from the Hays wellfield. The Reservoir cut off the flow that historically recharged the wellfield on the River. Cedar Bluff Reservoir was originally built for irrigation but because of increased diversion of groundwater and high evaporation rates to the west, inflows declined and irrigation use was discontinued. The reservoir is now used for recreation, flood control, and for a small amount of municipal water supply.

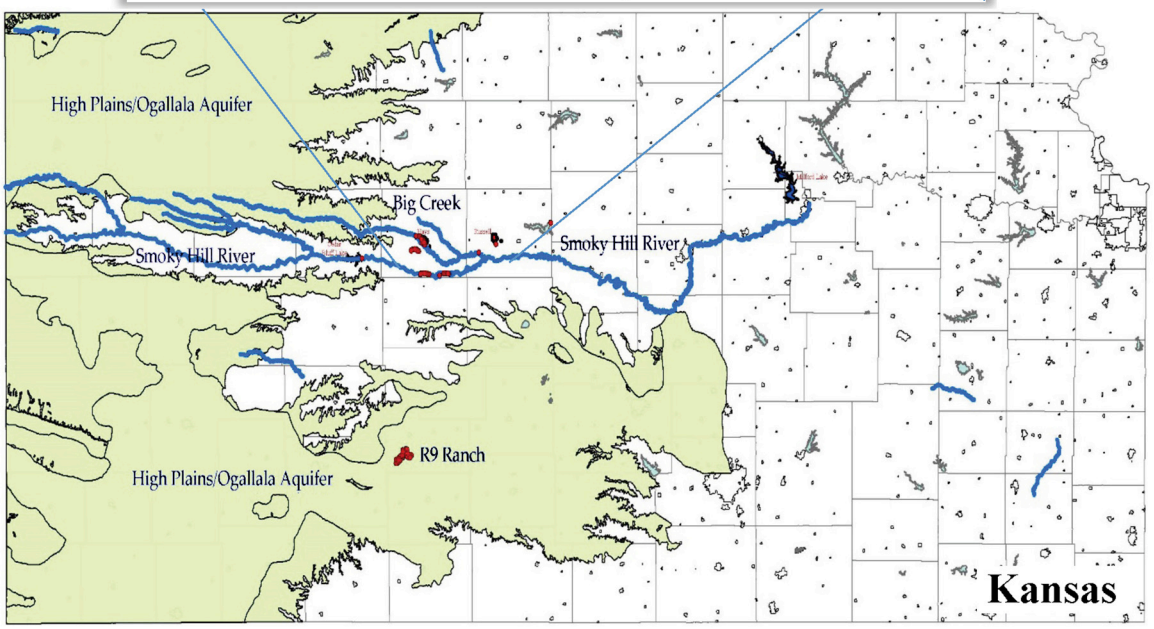
Because the Smoky and Big Creek wellfields are sensitive to drought, Hays has imposed significant restrictions on the use of water and has been lauded as a statewide leader in adopting and implementing effective conservation measures. These efforts have paid dividends: during the period from 2010-2015, Hays used an average of 91.5 gallons per person per day while the average use of other communities was and continues to be significantly greater. However, these measures have come at a great economic, social, and political cost to the City — including a perception that Hays does not have sufficient water to sustain significant long-term growth.

The City of Russell, Kansas

The City of Russell, population 4,400, is about 30 miles east of Hays, approximately five miles south of the Saline River, and eight miles north of the Smoky Hill River. Like Hays, Russell is not located in an area with nearby access to a sufficient, reliable, and drought-resistant water source. Fossil Creek, a tributary of the Smoky Hill River, passes immediately south of the City where it is dammed to form a small reservoir, Fossil Lake. The City averages 26 inches of precipitation annually but, like Hays, the evaporation rate in the area exceeds the average annual rainfall.

Russell's water supply comes from the Smoky Hill River, Big Creek, and Fossil Lake, all of which are are highly susceptible to drought in the same manner as Hays' sources. Big Creek is particularly unreliable because it frequently runs dry during the summer. The City of Russell has imposed stringent conservation measures that have significantly reduced consumption at costs analogous to those borne by Hays.





Kansas Transfers

Ranch Purchase

Alternatives Search

"Change" Application

"Master Order" Negotiated

Judicial Review

Conversion of Irrigation Rights to Municipal Use

In 1995, the Cities of Hays and Russell, Kansas (Cities) purchased the "R9 Ranch," a 6,700-acre farm located 70 miles south of Hays near Kinsley, Kansas. The Cities intended to convert the existing irrigation water rights on the R9 Ranch to municipal use in the Cities. Because water rights are real property rights under Kansas law and are appurtenant to and severable from the authorized place of use, by purchasing the R9 Ranch the Cities became legal owners of the Ranch's appurtenant water rights. The Cities planned to change the authorized location and type of use of the R9 Ranch water rights by following the KWTA and constructing pipeline and related infrastructure to divert water from the Ranch to the Cities. The system would then supply Hays and Russell with a much more drought-resistant, long-term supply of water than their existing sources.

Prior to acquiring the R9 Ranch, the Cities had spent years searching for viable alternative long-term water sources. DWR's KWTA regulations require applicants to disclose all other "economically and technologically feasible alternative...sources...available to the applicant" and to specify why a particular source was selected over alternative sources. *See* K.A.R. 5-5-2(f). Consequently, the Cities spent a number of additional years searching for alternatives after their acquisition of the R9 Ranch. Ultimately, the Cities' respective governing bodies concluded that the R9 Ranch provided by far the best option for meeting their respective long-term water needs and proceeded with the water transfer project for that source of supply.

In 2015, Hays and Russell filed applications to "change" the R9 Ranch water rights from irrigation use on the Ranch to municipal use in the Cities, contingent upon final regulatory approval to proceed with the water transfer. Then, in 2016, the Cities filed a transfer application, which will trigger the KWTA following final approval of the pending change applications. The Cities have received contingent approval of their change applications from the Chief Engineer that will allow the Cities to divert up to 6,750 acre-feet per year from the R9 Ranch to the Cities for municipal use, subject to certain conditions and limitations. The Cities are currently awaiting finalization of that order, which has been challenged in court. Assuming finalization, the Cities plan to proceed with the KWTA proceeding and, upon KWTA-approval, commence construction of the water transfer infrastructure — thus providing for a drought-resistant water source for the Cities and their residents.

The Cities' Water Transfer

Unlike most other Kansas cities, due to their location Hays and Russell had to look far afield to find a reliable source of water. After purchasing the R9 Ranch, Hays and Russell considered numerous alternative sources, but the alternatives all proved unworkable, too expensive, or not drought resistant.

In June of 2015, the Cities filed applications to change the water rights on the R9 Ranch from irrigation to municipal use. Over the next several years, the Cities and DWR negotiated an agreement culminating in a 50-page "Master Order" and 32 separate Orders approving the Cities' change applications, contingent on final approval of the water transfer application. These Orders were issued in March of 2019.

A group of irrigators in the area of the R9 Ranch intervened in the change application proceeding and challenged the Orders. Their challenge was rejected by the Secretary of the Kansas Department of Agriculture, after which the intervenors filed a petition for review in the Edwards County District Court pursuant to the Kansas Judicial Review Act, K.S.A. 77-601, et seq. The judicial review proceeding has been fully briefed and oral argument was completed on January 8, 2021. The parties are now awaiting a decision from the District Court after which either side aggrieved by the decision may appeal to the Kansas Court of Appeals and, potentially, the Kansas Supreme Court. In the meantime, the Cities' application to transfer water from the R9 Ranch to Hays and Russell remains incomplete. The current Chief Engineer has informed the Cities that upon approval of the March 2019 Order by the Courts, the transfer application will be "complete," and the transfer proceeding can begin.

For Additional Information:
David Traster, 316/ 291-9725 or dtraster@foulston.com

David M. Traster and **Daniel J. Buller**, with Foulston Siefkin LLP, are two of just a handful of Kansas lawyers with significant experience in the highly technical field of water law. Established in 1919, Foulston Siefkin LLP is the largest Kansas-based law firm and one of the oldest, with a strong tradition for legal excellence.

Mr. Traster is special counsel in Foulston's Wichita office. He works with clients on a wide range of environmental, water rights, and natural resource challenges. He has extensive experience handling complex water law issues before administrative agencies and in Kansas Courts. He is a former Assistant Secretary and General Counsel at the Kansas Department of Health and Environment. He handles administrative matters before the Division of Water Resources of the Kansas Department of Agriculture, the Kansas Department of Health and Environment, and the US EPA. His practice includes litigation and facilitating transactions where water and environmental resource issues are of concern. Mr. Traster enjoys Martindale-Hubbell Law Directory's highest "AV" rating.

Mr. Buller is a water lawyer and commercial litigator in Foulston's Kansas City office. He assists clients obtain, change, defend, and prosecute complex claims relating to water, property, and commercial rights — both in regulatory actions before DWR and in litigation. His practice includes representing municipalities and other private and public entities with their water-related legal needs as well as mediating and negotiating resolution of disputes involving water and related matters. Mr. Buller's practice also includes assisting clients in commercial disputes and defending manufacturers, retailers, and distributors in product liability actions and technology-related matters, contractual negotiations, and privacy issues.

Nutrient Discharges

Nutrient Discharge Rule Proposal

Nutrient Limits

Numeric Criteria

Narrative Criteria

Work Group

Cost Concerns & Variances

Harm Analysis

"Poison Pill" Rule

NUTRIENT DISCHARGES IN MONTANA

MONTANA'S LONG, STRANGE, NUTRIENT DISCHARGE REGULATION EXPERIENCE

by Mark Stermitz, Crowley Fleck (Missoula, MT)

Introduction

On January 20, 2022, the Montana Department of Environmental Quality (MDEQ) published notice seeking public comments on a proposed new rule for an adaptive management plan as part of a comprehensive package of regulations governing the discharge of nutrients in Montana waters. Responding to 2021 legislation (Senate Bill 358; codified at 75-5-321, MCA), MDEQ is targeting to release a comprehensive rule package for public comment in later 2022. Interested parties who were at the table in 2009 when Montana began its fateful effort at workable nutrient discharge regulations could not have known that more than a decade later, MDEQ would still be trying to find regulations that survive EPA approval and federal court challenges.

Nutrient Regulations, First Phase: 2000 to 2015

Nutrient discharges in Montana have posed the most difficult challenge for effective or even viable water quality regulations in the state's history. In 2000, EPA directed states to set numeric limits for the discharge of nutrients, i.e. phosphorus and nitrogen. These pollutants can cause or contribute to the growth of algae and other deleterious effects on oxygen levels in waterbodies. *See* "Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through use of a Framework for State Nutrient Reductions," U.S.E.P.A. (Mar. 16, 201l) (www.epa.gov/sites/production/files/documents/memo_nitrogen_framework.pdf).

Federal Clean Water Act (CWA) section 303(c)(2)(B) requires states to adopt numeric criteria for CWA section 307(a) toxic (priority) pollutants for which EPA has published recommended criteria if the discharge or presence of the pollutant can reasonably be expected to interfere with designated uses. *Numeric water quality criteria* are values expressed as levels, constituent concentrations, toxicity units, or numbers deemed necessary to protect designated uses. *Narrative criteria* are statements that describe the desired water quality goal, e.g. requiring that discharges be "free from toxics in toxic amounts" or "free of objectionable color, odor, taste, and turbidity."

In 2009, the Montana Legislature passed SB 95 to require the development of numeric nutrient standards for discharges to Montana waters. To assist and advise in developing its nutrient regulations, Montana created the Nutrient Work Group, comprised of representatives for both public and private dischargers. All concerned were aware that the numeric nutrient discharge limits were stringent, and that compliance would be difficult and, in many cases, literally cost prohibitive.

Municipalities or other sources of public sewer system discharges were both a major target of new regulations and the most problematic from both a technical and monetary standpoint. However, the viability of some industrial dischargers in light of the compliance cost was also in question. Discussions focused on adopting one or more variances. EPA recognized the importance of creating general variances applicable to multiple, similarly-situated dischargers, public and private, but approval of a general variance presented a high bar — states had to conduct an analysis showing that compliance with the numeric standards would cause substantial and widespread economic and social harm. The 2011 session of the Montana legislature in SB 367 made such a declaration and further required DEQ to continue the effort to create numeric nutrient criteria and also a general variance process. SB 367 targeted total phosphorous and nutrient limits that MDEQ thought could be met at that time, but with the limits ratcheted down over a period of 20 years.

After much research and various studies, in 2014 MDEQ issued numeric criteria in the form of DEQ Circular 12A. MDEQ also commissioned an economic analysis to show that compliance with the numeric criteria would cause significant and widespread economic harm, and promulgated processes for both general and individual variances in DEQ Circular 12B. MDEQ and the Nutrient Work Group also worked on contingencies to deal with the stringent narrative criteria if the nutrient rules were not approved by EPA or were successfully challenged in court. MDEQ issued a rule that became known as the "Poison Pill." The Poison Pill said:

> If a court of competent jurisdiction declares 75-5-313, MCA [providing for variances] or any portion of that statute invalid, or if the United States Environmental Protection Agency disapproves 75-5-313, MCA, or any portion of that statute, under 30 CFR 131.21, or if rules adopted pursuant to 75-5- 313(6) or (7), MCA, expire and general variances are not available, then (1)(e) and all references to DEQ-12A, base numeric nutrient standards and nutrient standards variances in [DEQ's nutrient rules] *are void, and the narrative water quality standards contained in ARM 17.30.637 are the standards for total nitrogen and total phosphorus in surface water*… .(emphasis added).

Nutrient Discharges

EPA Approval Challenged

On February 26, 2015, EPA issued its action approving Montana's suite of nutrient regulations, including Circulars 12A (numeric criteria) and 12B (variances).

Litigation, First Phase: 2016 to 2017

On May 31, 2016, an environmental group filed a federal court complaint in Montana to enjoin and void EPA's approval of Montana's nutrient discharge variances. *Upper Missouri Waterkeeper v. U.S. Environmental Protection Agency*, Cause No. 16-cv-00052-BMM (*Waterkeeper I*). The court granted intervention in the case to MDEQ, to public dischargers the Montana League of Cities and Towns, and to the National Association of Clean Water Agencies. A consortium of private industrial dischargers, the Treasure State Resources Association of Montana, also intervened.

Summary judgment motions were briefed from December 2016 into June 2017. MDEQ explained its approach to nutrient discharges:

MDEQ Approach

> In August of 2014, Montana adopted stringent and protective science-based numeric nutrient criteria (NNC) for various wadeable streams and large rivers across the State. In deriving these criteria (or NNC), Montana reviewed considerable amounts of scientific data and conducted its own scientific research. Prior to this, and similar to other states, Montana regulated statewide nutrient discharges mostly through the application of narrative standards. Over time, Montana realized that translating narrative standards into enforceable permit limits could lead to inconsistent implementation and likely resulted in less protection for fish and aquatic life. This realization, along with the goal to provide broader protections than the narrative standard could afford, lead to the adoption of the NNC.
>
> Nonetheless, because the NNC are stringent and difficult for Montana Pollutant Discharge Elimination System ("MPDES") permit holders to meet in the short term, Montana determined it was essential to adopt nutrient standards variances concurrently with the NNC. Montana views these nutrient standards variances, including the challenged general variance, as critical components in the control of statewide nutrient pollution. As Montana found, in many cases, the concentrations of the NNC are below the limits of current wastewater treatment technology, and, when little or no stream dilution is available, dischargers would find it difficult or impossible to meet the NNC.
>
> In order to demonstrate this to EPA, Montana presented, in part, two papers concluding that for both the public and private sectors, substantial and widespread economic and social impacts were likely to occur if certain dischargers were immediately required to meet the NNC… . With the staged implementation of the NNC that the general variance provides, Montana will avoid the substantial and widespread economic and social impacts likely to result if dischargers are required to immediately meet the NNC. EPA, Montana's federal partner in achieving CWA objectives, agreed with Montana's staged approach.

Variances Rationale

Staged Approach

Waterkeeper I, Doc. 82 (citations omitted).

Plaintiff's Position

Plaintiff argued that in approving the general variance, EPA failed to fulfill its obligations under the CWA, which it contended "does not contemplate or allow for standards to be established *based on cost or affordability* for dischargers that may be subject to water quality-based discharge limits." *Waterkeeper I*, Doc. 68 (emphasis added). Plaintiff also contended that EPA's approval of the general variance was arbitrary because it endorsed MDEQ's alleged intention "to respond to the requests of pollutant dischargers to ensure that the science-based numeric nutrient criteria and standards would not apply to them, or at least not until any required pollution control was much cheaper than the current cost of reverse osmosis technology." *Id*. Plaintiff argued that the variance was wrongly available to dischargers who could meet the numeric criteria and that DEQ Circular 12B's nutrient standards for variances were so lax as to be a "vast loophole from the obligation to take substantial action to protect waters from nutrient pollution" that could be extended for 20 years.

Technology Availability

EPA, MDEQ and Intervenors noted that the Circular 12A total nitrogen standard for most streams is under 300 µg/L, while the technology identified as the best possibility for meeting nutrient limits is reverse osmosis, estimated to reach 1000 µg/L total nitrogen, at best. The nature and function of variances was a major focus of the parties' arguments, because (as EPA described) variances "can be appropriate to address situations where it is known that the designated use and criterion are unattainable today (or for a limited period of time) but feasible progress could be made toward attaining the designated use and criterion." Proposed Rule, 78 Fed.Reg. 54518 at 54,532. If it is not feasible for dischargers to meet the numeric criteria, variances must reflect the "highest attainable condition," a phrase that was undefined in federal regulations at the time, but which EPA guidance described as: "the highest attainable interim use and criterion or *highest attainable effluent condition* for a permittee(s) during the term of the variance… that is both feasible to attain and is closest to the protection afforded by the designated use and criteria." *Waterkeeper I*, Doc. 77 at 42-43 (emphasis added). Plaintiff argued that the general variance was invalid because it did not immediately require compliance with the highest attainable condition.

Variance Compliance

Before oral argument on the cross-motions for summary judgment, the regulatory landscape for Montana's nutrient discharges changed.

Nutrient Discharges

Regulation Amendments

EPA: Partial Approval

Amended Complaint

Costs Evaluation Allowed

"Highest Attainable Condition" Achievement

Appeals' Positions

Compliance Schedule v. Variance

Numeric Criteria Eliminated

Nutrient Regulations, Second Phase: 2017

As required by 40 C.F.R. §131.14, Montana law (§75-5-313(8) MCA) required MDEQ (with the Nutrient Work Group) to "revisit and update" the variance standards in Circular 12B every three years, an effort that was underway at the time of *Waterkeeper I*. MDEQ published notice of an amended Circular 12B in June 2017. The amended rule (A.R.M. 17.30.660) provided: (1) a *general variance* for dischargers for up to 17 years for mechanical plants and up to 10 years for lagoons; and (2) an authorizing provision for an *individual variance* for future individual dischargers discharging to waters with numeric nutrient criteria. (emphasis added).

Montana submitted regulation for EPA review. On October 31, 2017, EPA approved the general variance only, but took "no action on the individual variance at this time." The revised general variance continued to reflect that many public dischargers could not meet the base numeric nutrient criteria without widespread economic and social impacts caused by the installation of reverse osmosis systems.

The *Waterkeeper* litigation began anew with EPA's approval of the Montana's amended general variance.

Litigation, Second Phase: 2017 to 2019

The parties briefed the issue of mootness in the summer of 2017, following notice that the Montana general variance rule had changed. [Editor's note: an issue is "moot" if the matter at issue has been resolved, leaving no dispute for a court to resolve]. One month after EPA's approval of DEQ Circular 12B, Plaintiff filed a motion to amend its complaint in *Waterkeeper I* to challenge the new rule. *Waterkeeper I*, Doc. 116. On February 2, 2018, federal district court Judge Brian Morris issued an order denying mootness and granting Plaintiff leave to file its amended complaint. *Id*., Doc. 129. In the new round of summary judgment briefing conducted in 2018, the arguments of the parties did not appreciably change, as Plaintiff identified the same infirmities with the new general variance as it had with the original version.

On March 25, 2019, Judge Morris issued his summary judgment opinion. *Waterkeeper I*, Doc. 177. First, the court rejected Plaintiff's contention that water quality standards issued under the CWA must be strictly "science-based." The court found the CWA left room for interpretation, and applying the tests from *Chevron USA, Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, (1984), that "EPA's interpretation of 40 C.F.R. § 13.14 to allow an evaluation of 'costs' deserves deference."

Judge Morris did invalidate EPA's approval, based on an analysis of the "highest attainable condition." He interpreted the federal regulations on variances as "establishing time to 'achieve' merely the 'highest attainable condition.'" *Waterkeeper I*, Doc. 177 at 3. He believed the federal regulations allowed an essentially indefinite reliance on variances with no knowledge of how long a discharger may take to achieve Montana's Base WQS. *Id*. at 27. In granting summary judgment to Plaintiff on one of its claims, the court reasoned:

> EPA's regulations contemplate that the "highest attainable condition" could be attained now. EPA's regulations contradict themselves when they allow a discharger time to "achieve" the currently attainable condition. Defendants adoption of a seventeen-year timeline merely to reach the "highest attainable condition" violates the direction of the CWA. *See Chevron*, 467 U.S. at 842-43; *SmithKline*, 567 U.S. at 154. Defendants must set forth a timeline that leads to compliance with Montana's Base WQS.

Id. at 33.

The court then ordered the parties to confer in good faith on an appropriate remedy, and if they could not reach agreement, briefs would be submitted on that issue. After briefing, the court ordered EPA and MDEQ to create a different timeline "that *begins* with the attainment of the Current Variance Standard and works toward attainment of Montana's Base Water Quality Standards." *Waterkeeper I*, Doc. 186 (Order dated Sept. 17, 2019) (emphasis added). The court remanded the general variance rule to carry out the direction given in its summary judgment order.

All parties in *Waterkeeper I* filed notices of appeal or cross-appeal to the Ninth Circuit. Plaintiff appealed the district court's denial of the argument that cost was an appropriate consideration in adopting water quality standards, and EPA and aligned parties appealed the invalidation of the general variance as not consistent with the highest attainable condition. *Upper Missouri Waterkeeper v. USEPA*, Ninth Cir. Case No. 19-35898.

Nutrient Regulations, Third Phase: 2019-2020

While the appeals were pending, and pursuant to the court's directive in *Waterkeeper I*, Montana revised DEQ Circular 12B. The revisions mainly consisted of adding a statement that MDEQ could choose to implement a compliance schedule instead of a variance, where attainment of base numeric standards becomes feasible without widespread economic and social impacts. MDEQ submitted the revised variance to EPA in November 2019. In February 2020, EPA issued its action disapproving the amended Circular 12B as not consistent with the remand order but approving the Poison Pill regulations (referred to as "non-severability provisions") that were originally adopted in 2015 but on which EPA had not previously acted. (A.R.M. §§ 17.30.619(2) and 17.30.715(4)). In other words, the EPA action approved the elimination of Montana's numeric nutrient criteria, leaving only the narrative criteria in place. *See* https://deq.mt.gov/files/Water/WQPB/Standards/NutrientWorkGroup/PDFs/EPAActionLetter_2020.pdf

Nutrient Discharges

"Poison Pill" Issues

Procedural Issues

9th Circuit Rulings

"Economically Feasible"

General Variance

Work Group Reactivated

Litigation, Third Phase: 2020 to 2022

Meanwhile, back in district court……In March 2020, Upper Missouri Waterkeeper sued EPA on its approval of the Poison Pill. *Upper Missouri Waterkeeper v. U.S. Environmental Protection Agency*, Cause No. 20-cv-00027-BMM (*Waterkeeper II*). MDEQ intervened, as did the same entities that participated in *Waterkeeper I*. Summary judgment filings in *Waterkeeper II* were submitted in the summer of 2020. Plaintiff argued that EPA's approval of the Poison Pill was arbitrary and capricious because it voided the numeric nutrient criteria that were developed to protect designated uses of Montana waters, in contravention of Congressional direction that States take the initiative to develop water quality standards. Defending the Poison Pill and EPA's approval, MDEQ and intervenors emphasized that when Montana voluntarily adopted the strict numeric criteria, it did so only with the intention that the regulations would include a general variance process to avoid substantial and widespread economic and social harm to Montana communities: "Adopting the strict Base WQS without a variance in place would have been antithetical to Montana's goal of achieving its designated uses and administratively imprudent, because it would have required Montana to move toward downgrading uses on a statewide basis." *Waterkeeper II*, Doc. 40 at 6.

Various procedural arguments, including motions to stay rulemaking, were also at issue in *Waterkeeper II*. Among other things the arguments were based on the fact that an appeal was pending at the Ninth Circuit on *Waterkeeper I* on the rationale underlying the district court's rejection of the general variance regulation. In October 2020, the district court consolidated the two *Waterkeeper* cases, stayed its partial vacatur order in *Waterkeeper I*, and deferred ruling on the summary judgment motions pending in *Waterkeeper II*. *Waterkeeper II*, Doc. 72. It then ordered the parties in both cases to a mediation before the Magistrate judge. *Waterkeeper II*, Doc. 73 (November 4, 2020). These district court actions in *Waterkeeper I* issued even though that case was on appeal, precipitating motions to stay further action on the now-consolidated *Waterkeeper* cases.

The Ninth Circuit at least temporarily put the district court and the parties out of their misery with a ruling on the *Waterkeeper I* appeals. *Upper Missouri Waterkeeper v. U.S. Environmental Protection Agency*, 15 F.4th 966 (9th Cir. 2021). The Court denied Waterkeeper's challenge to the role of compliance costs in the adoption of water quality standards:

> The agency [EPA] could perhaps have interpreted the term ["attainable"] to focus solely on whether achieving water quality of a particular level is technologically feasible, even if the costs involved would prove financially ruinous to the communities benefiting from the improvements. But it seems far more plausible that Congress used the term in the sense reflected in the EPA's regulations — as including an assessment of whether achieving the necessary water quality is economically feasible, given the costs that would be imposed on the affected communities.

15 F.4th at 974.

The Ninth Circuit reversed the district court's ruling that the general variance was invalid because it did not require compliance with the highest attainable condition at the outset of the variance term, and because it did not require compliance with Montana's base water quality standards by the end of the term. The Court did not even address whether EPA's interpretation of the regulations was entitled to deference, because "the plain language of the regulation unambiguously provides otherwise." *Id*.

Following the reversal of the district court in *Waterkeeper I* in November 2021, Judge Morris ordered the filing of motions and briefs regarding dismissal, which have not been completely filed as of this date.

Nutrient Regulations, Third Phase: Present Day to ?

In response to the litigation and the Poison Pill, the Nutrient Work Group was activated again in 2021, with the intention of focusing on adaptive management. *See* Introduction, above. Its work with DEQ on finding nutrient discharge standards that protect Montana waters but do not visit widespread hardship on Montana communities continues. If it feels to some like a process that began in 2000 is starting all over again in 2020, that is because it is.

For Additional Information:
Mark Stermitz, Crowley Fleck, 406/ 523-3625, mstermitz@crowleyfleck.com

Mark Stermitz is Of Counsel in Crowley Fleck's Missoula, Montana office. Mark has nearly 40 years of experience in environmental, natural resource, and energy law in a wide array of federal and state environmental laws. He has represented clients in many jurisdictions on cases or projects involving state facility siting acts, water and air quality laws, the ESA, NEPA and Migratory Bird Treaty Act. Before returning to practice in Montana, Mark was with the prominent Los Angeles entertainment and litigation firm Glaser Weil, LLP. His previous experience includes serving as a trial attorney with the Environment and Natural Resource Division of the US Department of Justice in Washington, DC. Mark was also in-house counsel for the Port of Portland (Oregon). He is licensed to practice in Montana, North Dakota, California, Oregon, and various federal districts and appellate courts.

WATER BRIEFS

WATER SECURITY NM

TRIBAL LEASE AGREEMENT

The Jicarilla Apache Nation (Nation), the New Mexico Interstate Stream Commission (NMISC), and The Nature Conservancy (TNC) announced on January 19 a new agreement to lease water from the Nation to the NMISC. This agreement between a sovereign Tribal Nation, a Colorado River Basin state government, and a conservation organization will allow the NMISC to lease up to 20,000 acre-feet of water per year. This amount will benefit threatened, endangered, and sensitive fish and will increase water security for New Mexico. Under a 10-year lease, water will be released from the Navajo Reservoir into the San Juan River, a tributary of the Colorado River. Up to 6.5 billion gallons of water per year will flow to New Mexico under the terms of the Agreement for endangered species and water security.

"This first-of-its-kind project demonstrates how meaningful sovereign-to-sovereign cooperation, with support from environmental organizations, can lead to creative solutions," said Daryl Vigil, water administrator for the Nation. The Nation's water rights provide access to water for the Nation to conduct cultural practices, provide drinking water to its community, and support economic development. The Nation subcontracts some of its water to users outside the Reservation. Subcontracts can be a source of income to help build the Nation's economic self-sufficiency while providing water to others that need it.

For the last several decades, the Nation leased water to coal-fired power plants that are now facing closure. This transition presented a new opportunity for the Nation, the NMISC and TNC to work together.

For info: Celene Hawkins, TNC, celene.hawkins@tnc.org or www.nature.org/

TRIBAL WATER RIGHTS WEST

COLORADO RIVER POLICY

According to a Policy Brief released by the Getches-Wilkinson Center for Natural Resources, Energy and the Environment at the University of Colorado Boulder, 22 of the 30 federally recognized tribes in the Colorado River basin collectively own the rights to use around 25% of the Colorado River's annual flow. Twelve other tribes still have unresolved claims, which will likely increase the amount of water tribes can use as those rights are settled. Despite holding legal rights to a quarter of the water in the Colorado River, tribes can't use their full share due largely to a lack of funding and water infrastructure. As tribes work to develop and use their water rights fully, states are concerned it will mean less water for their use.

The Status of Tribal Water Rights in the Colorado River Basin: Policy Brief #4 (4/9/21) offers a snapshot of tribal water rights in the Colorado River Basin but is not intended as a definitive source of information. For detailed information on the water rights of individual tribes, the Policy Brief notes that one should contact the tribes directly. The Policy Brief will be revised and updated as additional information becomes available. Another useful resource on tribal water rights is the Native American Water Rights Settlement Project, available at https://digitalrepository.unm.edu/nawrs/.

For info: www.getches-wilkinsoncenter.cu.law/wp-content/uploads/2021/04/Policy-Brief-1-The-Status-of-Tribal-Water-Rights.pdf

NONPOINT SOURCES US

BEST MANAGEMENT PRACTICES

On January 10, EPA announced the release of a new guide to help the 51 Clean Water State Revolving Fund (CWSRF) programs apply best practices to help turn the tide on **n**on**p**oint **s**ource (NPS) pollution. The CWSRF is the nation's largest financial resource dedicated to the purpose of addressing water quality problems and is growing under the new Bipartisan Infrastructure Law. NPS pollution remains the nation's largest water quality challenge. Each state, and Puerto Rico, uses the EPA-administered CWSRF program to operate its own water infrastructure bank established for the sole purpose of combatting water pollution from both point and nonpoint sources within their boundaries. As such, each state CWSRF program defines its own goals and operating policies, while also following federal requirements.

Although addressing point source needs will continue to be a mainstay for the CWSRF, there is a need to ramp up efforts to better address NPS challenges. Among these programs, some have achieved particularly notable success at using CWSRF funds to target NPS needs. These state programs have evolved to produce creative solutions to combat NPS problems and offer valuable lessons for other states to consider. EPA developed this guide to share the collective wisdom from those states that have achieved success in this area.

EPA's *CWSRF Best Practices Guide for Financing Nonpoint Source Solutions* is intended to help state staff better align and integrate their state's CWSRF and NPS management programs. The guide suggests strategies and key elements needed to expand the use of CWSRF resources to address priority needs as specified in state NPS management program plans, and it identifies potential obstacles and how to overcome them. Lastly, the guide provides helpful case studies.

For info: EPA Guide at: www.epa.gov/system/files/documents/2021-12/cwsrf-nps-best-practices-guide.pdf

WATER RESILIENCE CA

PROGRESS REPORT

In July 2020, California Governor Gavin Newsom released a final version of the Water Resilience Portfolio, the Administration's blueprint for equipping California to cope with more extreme droughts and floods and rising temperatures, while addressing long-standing challenges that include declining fish populations, over-reliance on groundwater, and lack of safe drinking water in many communities. A new report was released January 11, 2022, which documents the Newsom Administration's efforts to implement the portfolio over the previous 18 months. The report conveys significant progress in building climate resilience.

WATER BRIEFS

Goals and actions are organized into four categories:

1. Maintain and diversify water supplies: State government will continue to help regions reduce reliance on any one water source and diversify supplies to enable flexibility as conditions change. Diversification will look different in each region based on available water resources, but it will strengthen water security and reduce pressure on river systems across the state.
2. Protect and enhance natural ecosystems: State leadership is essential to restore the environmental health of many of our river systems in order to sustain fish and wildlife. This entails effective standard setting, continued investments, and more adaptive, holistic environmental management.
3. Build connections: The state aims to improve physical infrastructure to store, move, and share water more flexibly and integrate water management through shared use of science, data, and technology.
4. Be prepared: Each region must prepare for new threats, including flashier floods, deeper droughts, and hotter temperatures. State guidance will enable preparation, protective actions, and adaptation.

Though the actions in the portfolio are the responsibility of state agencies to implement, those actions emphasize the need for local, regional, tribal, federal, and private entities to coordinate across watersheds to build a resilient "water system of systems" across California. As detailed in the January 2022 progress report, state agencies are making significant progress carrying out each of the 142 separate actions in the Water Resilience Portfolio, and coordination is underway across the state to address water challenges.

Recent progress includes: assisting tens of thousands of Californians who depend on small water systems or domestic wells that have drinking water supply problems; dedicating hundreds of millions of dollars to improve streamflow for salmon and other native fish species; advancing the removal of four obsolete dams that block salmon passage on the Klamath River; providing extensive financial and technical assistance to local sustainable groundwater management agencies; restoring streams and floodplains; and steadily improving the state's ability to manage flood and drought.

The 2021-22 state budget included $5.2 billion in water resilience investments across California that will build momentum to carry out portfolio priorities over the next several years. On January 10, Governor Gavin Newsom proposed an additional $750 million in water resilience investments, with a focus on water conservation, drought relief, protection of fish and wildlife, groundwater recharge, and support for local agencies bringing groundwater basins into sustainable conditions.
For info: https://resources.ca.gov/Initiatives/Building-Water-Resilience/portfolio

FINANCIAL INVESTMENTS AZ

DROUGHT RESILIENCE

On January 10, Arizona Governor Doug Ducey emphasized the importance of water to the state's future in his State of State speech, stating: "Instead of just talking about desalination — the technology that made Israel the world's water superpower — how about we pave the way to make it actually happen? [W]e propose that we make a historic investment: $1 billion. Our goal: Secure Arizona's water future for the next 100 years."

According to the Governor's Office, the $1 billion investment will help make Arizona more resilient to drought by:

- Building upon last year's investment to the Drought Mitigation Fund with an additional $1 billion General Fund Investment over the next three years
- Laying the groundwork for new large-scale water augmentation projects
- Encouraging further reuse and efficiency with current supplies
- Leading to the further integration of latest technologies, including desalination, into Arizona's water portfolio

In last year's State budget, Arizona invested $200 million in water technology, including $160 million for large water-augmentation projects. In October 2021, the Governor's Office announced a $30 million investment in the effort to keep Lake Mead from descending to critical levels — a commitment that became a major part of the recent "500+ Plan," in which water communities in Arizona, California, and Nevada, as well as the federal government, combined to invest up to $200 million over the next two years in the on-going effort to protect drought-ravaged Lake Mead.

Work toward the primary focus of Governor Ducey's remarks on water — desalination projects — has been on-going for some time. A binational work group operating pursuant to the 1944 water treaty between the US and the Republic of Mexico has been meeting since 2018 to discuss jointly beneficial desalination proposals. A "Phase One" report has been published and can be found on the website of the International Boundary and Water Commission (IBWC); work is proceeding on a "Phase Two" study. The IBWC, United States and Mexico, is responsible for applying the boundary and water treaties between the two countries and settling differences that arise in their application.
For info: Governor Ducey's website, https://azgovernor.gov/; ADWR website, https://new.azwater.gov/, 602/ 771-8500 or engage@azwater.gov

COLORADO WATER '22 CO

INITIATIVE LAUNCHED

On January 26, less than a month after one of Colorado's most destructive fires caused in part by drought, Governor Polis and Water Education Colorado (WEco) launched Water '22, a statewide, year-long initiative that implores Coloradans to take an active role in securing the state's water future.

One of the key ways Water '22 asks Coloradans to save water is by taking a pledge to engage in "22 Ways to Care for Colorado Water in 2022" — which includes simple actions that can save at least 22 gallons of water per day while keeping waterways clean. This amounts to 8,000 gallons a year for every Coloradan or 48 billion gallons a year across Colorado, which will help protect and preserve the state's rivers, watersheds, and water supplies. Examples of these actions include: taking a shorter shower; operating

WATER BRIEFS

dish and clothes washers only when they full; fixing leaks and drips in faucets and toilets; and practicing smart outdoor watering on landscapes (such as avoiding watering during hot hours).

The Water ’22 campaign was created to educate Coloradans about how the state’s water is one of its most important resources and to encourage conservation and protection in order to mitigate the impacts of climate change, which has led to persistent drought conditions. Those conditions helped fuel the most damaging fire in the state’s history in late December, as well as the three largest wildfires on record, which burned in 2020, causing degradation to forested watersheds where 80% of Colorado’s water supply originates. Increased water awareness is a fundamental step in helping Coloradans understand the risks to a sustainable water future and the need to work together innovatively to stretch scarce supplies.

Drought impacts to Colorado include less water being drawn from Colorado’s aquifers and pulled from rivers, of which 86% is used to grow crops and raise livestock. By 2050, drought may cost agriculture $511 million in damages annually in Colorado, according to the Colorado Cattlemen’s Association. More than two decades of drought has severely impacted the Colorado River, which supplies 40 million people and millions of acres of agricultural land across seven states and Mexico. Lakes Powell and Mead, the two largest reservoirs in the US, both hold Colorado River water and fell to record-low levels last summer.

Water ’22 will also provide opportunities for Coloradans to engage with the campaign through a variety of activities including statewide book club and author talks, volunteer days, film screenings, a student water awareness week in schools, a statewide watershed beer competition, on-the-ground tours, and much more. Water ’22 will also plan activities during major events like World Water Day (March 22) and National Drinking Water Week (May 1-7), as well as call attention to milestones like the 100th anniversary of the Colorado River Compact (November 24), the 50th anniversary of the Clean Water Act (December 2), and the release of the updated Colorado Water Plan for public comment this summer.

For info: Water ’22 website: water22.org; Tricia Bennett, Weco, 303/ 931-0013 or tricia@fitzgeraldpetersen.com

TEXAS WATER PLAN TX

ONLINE INTERACTIVE SITE

The Texas Water Development Board (TWDB) is kicking off the New Year working to ensure the future of water in Texas. The TWDB just released the graphically enhanced version of the 2022 State Water Plan, which was adopted by the Board in July 2021.

The 2022 State Water Plan projects Texas’ population will increase 73% over the next 50 years, from 29.7 million in 2020 to 51.5 million in 2070. Along with that growth comes a projected 9% increase in total water demand. Texas’ existing water supplies — those that can already be relied on during drought — are projected to decline 18% during this time.

To meet potential water shortages during a drought of record, the plan contains 5,800 strategies, such as conservation and reuse, aquifer storage and recovery, brackish groundwater and seawater desalination, and surface water strategies. The estimated capital cost of implementing the 2022 plan is approximately $80 billion, and water providers anticipate needing $47 billion of that in state assistance.

TWDB produces a new state water plan every five years based on plans developed by 16 regional water planning groups. The 2022 plan marks the fifth state water plan created under Texas’ regional water planning process.

For the first time, there is a stand-alone chapter in the plan focused on conservation. The intent is to define legislative requirements, highlight initiatives within TWDB’s conservation division, and illustrate how planning groups use the information to develop their plans. Other new additions to the 2022 State Water Plan include improvements to projection methodologies, accelerated development of the socioeconomic impact analyses, a drought management costing tool to assist planning groups in their strategy evaluations and decision making, and realistic timelines for large projects.

The graphically enhanced 2022 State Water Plan is available on the TWDB website along with the Interactive 2022 State Water Plan. This web application enables users to take an in-depth look at the 2022 State Water Plan data, projects, and strategies to see how water needs change over time, with filter options that allow viewing at different geographic levels — from statewide down to the water user level.

Regional water planning groups are holding public meetings to develop the 2026 Regional Water Plans. Public water systems’ annual water use surveys, due by January 31, used new dashboards developed by the TWDB to help review their historical water use. This water use data is foundational to the development of the water demand projections used in the development of the regional and state water plans.

For info: Plan at: https://2022.texasstatewaterplan.org/statewide

NEW PESTICIDES POLICY US

EPA EVALUATION OF ESA RISKS

EPA is taking action to further EPA’s compliance with the federal Endangered Species Act (ESA) when evaluating and registering new pesticide **a**ctive **i**ngredients (AIs). Effective January 11, 2022, before EPA registers any new conventional AI, EPA will evaluate the potential effects of the AI on ESA-listed species, and their designated critical habitats, and initiate ESA consultation with the US Fish and Wildlife Service and the National Marine Fisheries Service (the Services), as appropriate.

Before this announcement, in most cases EPA did not consistently assess the potential effects of conventional pesticides on listed species when registering new AIs. This resulted in insufficient protections from new AIs for listed species, as well as resource-intensive litigation against EPA for registering new AIs prior to assessing potential effects on listed species. EPA’s new policy should reduce these types of cases against EPA and improve the legal defensibility of new AIs, which often have lower human health and ecological risks than older pesticides.

WATER BRIEFS

Under this policy, if EPA finds through its analyses that a new conventional pesticide AI is likely to adversely affect listed species or their designated critical habitats, EPA will initiate formal consultation with the Services before granting a new AI registration. As part of its analysis and under its existing authorities, EPA will consider the likelihood that the registration action may jeopardize the continued existence of listed species or adversely modify their designated critical habitat and provide its findings to the Services. To determine or predict the potential effects of a pesticide on these species and habitats, EPA will use appropriate ecological assessment principles and apply what it has learned from past effects determinations and the Services' biological opinions.

If EPA determines that jeopardy or adverse modification is likely, EPA will only make a registration decision on the new AI after requiring registrants to implement mitigation measures that EPA determines would likely prevent jeopardy or adverse modification. If EPA finds that a new AI is likely to adversely affect listed species or their critical habitat, but that jeopardy/adverse modification is not likely, it may nonetheless require registrants to include mitigation measures on their registration and product labeling to minimize the effects of incidental take to listed species that could result from use of a pesticide. In both situations, formal consultation with the Services is still necessary. Further, EPA may determine that it is necessary for registrants to incorporate a link to Bulletins Live! Two — an online system that describes use limitations for EPA-registered pesticides by geographic area — into the product's labeling.

When identifying necessary mitigations to prevent jeopardy/adverse modification, EPA will consider a variety of factors including how species or critical habitats are exposed to a pesticide and what the likely effects of the pesticide exposure will be. Because listed species are often exposed to pesticides on treatment sites or in off-site habitats that receive spray drift and runoff, EPA expects that mitigation measures will often include avoiding or minimizing these exposure routes. Where possible, EPA intends to provide several mitigation options to allow flexibility for growers while ensuring protections for listed species. Mitigations may include measures intended to reduce the amount of pesticide that may leave a treated field, restrict the geographic or temporal scope of pesticide applications, and reduce maximum application rates or number of applications allowed on a treated site.

EPA is also continuing to explore applying these new ESA approaches to new biopesticide AIs and new antimicrobial AIs. EPA is currently developing a detailed work plan to outline additional improvements to further the Agency's compliance with the ESA, including steps to implement protections for high-risk species more efficiently, provide growers with more flexible mitigation measures, and increase stakeholder engagement.
For info: EPA website at: www.epa.gov/endangered-species/progress-toward-protections-federally-listed-species

INDUSTRIAL STORMWATER US

EPA SEEKS INPUT

On January 25, EPA published a Federal Register Notice to seek public input for 60 days on the National Pollutant Discharge Elimination System (NPDES) Industrial Stormwater Fact Sheet Series. EPA's industrial stormwater program has 29 fact sheets currently posted online for each sector covered under the 2021 Multi-Sector General Permit (MSGP) for stormwater discharges from industrial activity. Each fact sheet describes the types of facilities included in the sector, typical stormwater pollutants associated with the sector, and types of stormwater control measures (SCMs) that may be used to minimize the discharge of the pollutants.

EPA is particularly focused on updating: common activities, pollutant sources, and associated pollutants at facilities in each sector; and SCMs or best management practices (BMPs), including source control and good housekeeping/pollution prevention measures for potential pollutant sources at facilities in each sector. In updating the fact sheets, EPA will consider input received in response to this notice as well as any relevant comments related to the content of the fact sheets that the Agency received during the public comment period for the proposed 2021 MSGP. The fact sheets can be found in the docket (Docket ID No. EPA-HQ-OW-2022-0097) and at www.epa.gov/npdes/stormwater-discharges-industrial-activities-fact-sheets-and-guidance.

The comment period closes on March 28, 2022. The Federal Register Notice can be found at: www.federalregister.gov/documents/2022/01/25/2022-01382/national-pollutant-discharge-elimination-system-npdes-industrial-stormwater-fact-sheet-series.
For info: Katelyn Amraen, amraen.katelyn@epa.gov

UPDATING WATER LAWS CA

DROUGHT & CLIMATE CHANGE

As part of its Water Campaign, on February 3rd, the Planning and Conservation League (PCL) released a set of recommendations developed to address how California water laws can be updated to address the impacts of drought and climate change. The recommendations are focused on updating existing laws, regulations, and funding.

PCL described their process and proposal: "It is also important to note that we recognize these recommendations can and should be carefully scrutinized and refined in the various public processes. Some are more detailed all the way to the proposed legislative language. Others are more generally described. Although we gave them the best consideration we could in the time available, there will undoubtedly be additional drafting and implementation issues that will need to be considered. Also, we recognize that this is not a complete list of all needed upgrades. We hope that others will add their contributions to the process."
For info: PCL's Water Campaign at: www.pcl.org; Report at: www.pcl.org/media/2022/02/Updating-California-Water-Laws-to-Address-with-Drought-and-Climate-Change.pdf

CALENDAR

February 15-16 WEB
Intersection of Tribal Rights with Environmental, Energy & Resources Development - Virtual Conference, Presented by the American BAR Association. For info: environ@americanbar.org; or https://web.cvent.com/event/b88c9afe-4f83-47c2-b394-93f1d346ac55/summary

February 16 WEB
Where is Our Water Flowing? Water Conservation in Colorado - Virtual Event, Zoom 12:30pm-1:30pm Mountain Standard Time. Presented by Women in Sustainability w/ Water Education Colorado & Colorado Water Trust; RSVP at: womeninsustainability.org. For info: http://coloradowatertrust.org/

February 21-24 IN
Water & Wastewater Equipment, Treatment & Transport (WWETT) Conference & Expo, Indianapolis. Indiana Convention Center. World's Largest Annual Trade Show for Wastewater & Environmental Service Professionals. For info: www.wwettshow.com/en/show-info.html

February 23 WEB
Farming for Our Future: The Science, Law & Policy of Climate-Neutral Agriculture - Virtual Event, 12:00pm-1:30pm EST. Presented by the Environmental Law Institute; Free - Must Register by Feb. 21st. For info: www.eli.org

February 24-25 NV
Family Farm Alliance Annual Conference, Reno. Silver Legacy Resort. Focusing on Those on the Ground, Working Hard to Manage Western Water. For info: www.familyfarmalliance.org/events/

March 1-3 AZ
Growing Water Smart Workshop, Phoenix. TBA / Virtual Backup. Presented by Arizona Growing Water Smart Communities. For info: http://resilientwest.org/growing-water-smart/arizona/

March 5-9 TX
37th Annual WateReuse Symposium, San Antonio. Marriott San Antonio Rivercenter. For info: https://watereuse.org/news-events/conferences/

March 7-8 WEB
Asset Management for Water Utilities - Virtual Event, Intro Course. For info: www.euci.com

March 7-9 DC
Association of Municipal Water Agencies (AMWA) 2022 Water Policy Conference, Washington. Hyatt Regency Capitol Hill. RE: Biden Administration Priorities; Legislative Plans from Congressional Members; and Implementation Timetables. For info: www.amwa.net/conference/2022-water-policy-conference

March 9 WEB
Establishing an Asset Management System (AMS) for Water and Wastewater Utilities with ISO 55000 - Virtual Event, For info: www.euci.com

March 14-16 TX
P3C's Public-Private Partnership Conference & Expo - 10th Annual Conference, Dallas. Sheraton Hotel. For info: https://thep3conference.com/

March 16-17 WEB
PFAS Monitoring: EPA's Fifth Unregulated Contaminant Monitoring Rule (UCMR 5) Information Meeting, EPA Hosting Two Identical Meetings (Via Webinar) Providing Comprehensive Overview of the UCMR 5 PFAS Monitoring Program. For info: EPA UCMR 5 website: www.epa.gov/dwucmr/fifth-unregulated-contaminant-monitoring-rule

March 18-19 OR
Pacific Northwest Ground Water Exposition, Portland. Red Lion Hotel. Pacific Northwest Ground Water Association Event. For info: https://pnwgwa.org

March 21-23 TX
Geospatial Water Technology Conference, Austin. DoubleTree by Hilton. For info: www.awra.org

March 21-24 OH
Public Health and Water Conference & Wastewater Disease Surveillance Summit, Cincinnati. Duke Energy Convention Center; Organized by the Water Environment Federation & the US Centers for Disease Control and the Ohio Water Environment Association. Summit March 21 / Exhibition March 22-23/ Conference March 22-24. For info: www.wef.org/PublicHealth

March 23-24 WEB
Emergency Management for Public Water Systems Workshop - Virtual Event, For info: www.euci.com/events/

March 24-25 WEB
Tribal Water in the Pacific Northwest - Virtual Event, For info: Law Seminars Int'l: 206/ 467-4490; register@lawseminars.com or www.lawseminars.com

April 5-7 VA
2022 Western States Water Council Spring (198th) Meetings & Washington Roundtable, Crystal City. DoubleTree Hotel in Washington, DC. For info: https://westernstateswater.org/events/

April 5-7 DC
Interstate Council on Water Policy 2022 Washington DC Roundtable, Washington. TBA; In-Person Meeting. Co-Sponsoring with Western States Water Council & the National Water Supply Alliance. For info: Sue Lowry, ICWP, 307/ 630-5804 or www.icwp.org

April 6-8 CA
SEER 51st Spring Conference, San Francisco. Hyatt Regency San Francisco. For info: www.americanbar.org (Events)

April 7-8 WEB
Project Management for Water and Wastewater Utilities Workshop - Virtual Event, For info: www.euci.com/events/

April 8-9 CA
The P3 Water Summit, San Diego. Manchester Grand Hyatt San Diego. How Public-Private Partnerships Can Deliver Critical Water Projects On Time & On Budget. For info: www.p3watersummit.com

April 11-12 WEB
NEPA Compliance for Energy & Utilities - Virtual Event, For info: www.euci.com/events/

April 11-14 CA
California Water Environment Association (CWEA) Annual Conference, Sacramento. Sacramento Convention Center. For info: www.cwea.org (Events)

The Water Report
Water Rights, Water Quality & Water Solutions in the West
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CALENDAR

(continued from previous page)

April 11-15 CA
11th International Symposium on Managed Aquifer Recharge, Long Beach. Hilton Long Beach. Technical Sessions, Plenary Sessions, Field Trips & Networking. For info: https://ismar11.net

April 22 CA
Berkeley Law's Annual Environmental Awards Banquet & Ecology Law Quarterly's 50th Anniversary Celebration, Berkeley. TBA. With Environmental Leadership Award Winner Dr. Robert Bullard. For info: Center for Law, Energy, & the Environment, 510/ 642-7235, clee@law.berkeley.edu or www.law.berkeley.edu/research/clee/events/annual-energy-environmental-awards-banquet/

April 25-27 AL
American Water Resources Association 2022 Spring Specialty Conference - "Water Risk Under a Rapidly Changing World: Evaluation and Adaptation", Tuscaloosa. Bryant Conference Center at the University of Alabama. Co-Hosted by the AWRA Future Risk Committee & the Alabama Water Institute. For info: www.awra.org

April 25-28 LA
Gulf of Mexico Conference (GoMCon) , Baton Rouge. Raising Canes River Center. Conference Combines: the Annual Gulf of Mexico Alliance All Hands Meeting; the Annual Gulf of Mexico Oil Spill & Ecosystems Science Conference; and the Triannual State of the Gulf Summit; Integrating Science & Management for Decision-Making. For info: www.gulfbase.org/event/gulf-mexico-conference-gomcon-2022

April 26-27 DC
National Association of Clean Water Agencies (NACWA) 2022 National Water Policy Fly-In, Washington. Hilton National Mall. For info: www.nacwa.org/conferences-events

May 10-11 TX
Environmental Trade Fair & Conference, Austin. Austin Convention Center. Presented by the Texas Commssion on Environmental Quality. For info: www.tceq.texas.gov

May 12 WEB
Immerse 2022: Virtual Benefit for The Freshwater Trust, 7:00pm Pacific Time. For info: thefreshwatertrust.org

May 16 IL
SEER Superfund Master Class, Chicago. TBA. Sponsored by the ABA Section on Environment, Energy, and Resources (SEER). For info: ambar.org/SEERevents