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Fracked Regulation: How Regulatory Exemptions for Fracking Harm Tribal Waters

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INTRODUCTION

The hydraulic fracking (“fracking”) boom of the mid-2000s transformed the landscapes of many tribal lands across the United

States.¹ Tribal lands contain about twenty percent of the United States' fossil fuel reserves, making tribal lands extremely valuable to stakeholders.² The federal government and the federal agencies responsible for safeguarding the environment and tribal lands facilitate and promote oil and gas extraction on tribal lands, which results in subsequent environmental harms.³ Despite the federal government's responsibility to safeguard tribal lands, many reservations experience devastating environmental harms due to fracking. It is well-documented that wastewater from fracking is laden with toxic chemicals that are detrimental to human health, even though federal agencies resist this characterization.⁴ Despite the risks, the current regulatory system governing water pollution resulting from fracking has serious flaws,⁵ and tribal water systems are especially susceptible to water quality degradation due to the prevalence of oil and gas extraction on tribal lands.⁶ On some reservations, water pollution from fracking can be attributed to explicit regulatory exemptions for oil and natural gas producers.⁷ These injustices will undoubtedly continue unless water pollution from oil and natural gas production is properly regulated and tribes are an integral part of that process.⁸

¹ Nick Martin, *Kick the Fracking Industry Out of Indian Country*, THE NEW REPUBLIC (Apr. 6, 2021), <https://newrepublic.com/article/161940/kick-fracking-industry-indian-country> [<https://perma.cc/2DBX-E4TR>] (last visited Nov. 18, 2022); Melissa Denchak, *Fracking 101*, NRDC (Apr. 19, 2019), <https://www.nrdc.org/stories/fracking-101#history> [<https://perma.cc/G9G6-SBSY>] (last visited Mar. 31, 2023).

² Jessica A. Knoblauch, *Ignored and Infuriated, Pawnee Stop Illegal Fracking Plans on Tribal Lands*, EARTHJUSTICE (Dec. 7, 2018), <https://earthjustice.org/blog/2018-december/agency-nixes-fracking-leases-on-pawnee-tribal-land> [<https://perma.cc/8NJ8-JBN3>] (last visited Mar. 31, 2023).

³ Martin, *supra* note 1.

⁴ Klaus-Michael Wollin et al., *Critical Evaluation of Human Health Risks Due to Hydraulic Fracturing in Natural Gas and Petroleum Production*, 94 ARCHIVES OF TOXICOLOGY 967, 984 (2020), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7225182/> [<https://perma.cc/JH5C-82DR>] (last visited Nov. 18, 2022).

⁵ Heather Whitney-Williams & Hillary M. Hoffmann, *Fracking in Indian Country: The Federal Trust Relationship, Tribal Sovereignty, and the Beneficial Use of Produced Water*, 32 YALE J. REG. 451, 453 (2015).

⁶ Lauren Kaljur & Macee Beheler, *Native American Tribes Fight for Clean Water and More Money*, NEWS 21 (Aug. 14, 2017), <https://troubledwater.news21.com/native-american-tribes-fight-for-clean-water-and-more-money/> [<https://perma.cc/WLX6-F8D5>].

⁷ See Elizabeth Shogren, *Loophole Lets Toxic Oil Water Flow over Indian Land*, NPR (Nov. 15, 2021), <https://www.npr.org/2012/11/15/164688735/loophole-lets-toxic-oil-water-flow-over-indian-land> [<https://perma.cc/8MG3-MA96>] (last visited Mar. 31, 2023).

⁸ *Activists Flow in to Fight for Water*, INT'L CMTY. FOUND. (Oct. 5, 2017), <https://icfdn.org/activists-flow-fight-water/> [<https://perma.cc/H94W-L44E>] (last visited Nov. 18,

The Clean Water Act (CWA), Safe Drinking Water Act (SDWA), and Resource Conservation and Recovery Act (RCRA)—the three federal laws primarily responsible for regulating water pollution, water quality, and hazardous materials—have significant loopholes for oil and gas production.⁹ Under the CWA, oil and gas producers can discharge contaminated water into surface waters without obtaining permits if the discharge occurs west of the ninety-eighth meridian and the contaminated water is used in relation to agricultural and livestock production.¹⁰ SDWA does not regulate the injection of fracking wastewater into underground water supplies.¹¹ This regulatory gap is known as the “Halliburton Loophole.”¹² Additionally, water used in the process of fracking is currently not regulated under the RCRA as a hazardous pollutant, despite the chemical constituents in fracking waste water.¹³ These loopholes and exemptions in federal laws meant to address water pollution create life-threatening water crises, as evidenced by multiple reports of water pollution on tribal lands. For example, in 2012, it was reported that several water bodies on the Wind River Reservation in Wyoming were polluted from fracking waste, and that fracking operations were causing the release of pungent fumes and murky water that flowed over the land to form streams of contaminated water.¹⁴ These waters contain toxic chemicals and radioactive material

2022); *see also* Brian Bienkowski, *Contaminated Culture: Native People Struggle with Tainted Resources*, SCI. AM. (Oct. 25, 2012), <https://www.scientificamerican.com/article/contaminated-culture-native-people-struggle-with-tainted-resources/> [https://perma.cc/2JD2-8QYA].

⁹ *Fracking: Regulatory Failures and Delays*, GREENPEACE, <https://www.greenpeace.org/usa/ending-the-climate-crisis/issues/fracking/regulatory-failures-and-delays/> [https://perma.cc/2FLL-ZBJ4] (last visited Mar. 31, 2023).

¹⁰ *Clean Water Act Regulation of Oil and Gas Wastewater Discharges: A Call for Improved Oversight and Transparency*, CLEAN WATER ACTION, <https://www.cleanwateraction.org/sites/default/files/docs/publications/Fact%20Sheet%20—%20Clean%20Water%20Act%20Regulation%20Oil%20and%20Gas%20Wastewater%20—%20Clean%20Water%20Action%20Jan%202020.pdf> [https://perma.cc/6HT8-N983] (last visited Mar. 31, 2023).

¹¹ *The Halliburton Loophole*, EARTHWORKS, https://www.earthworks.org/issues/inadequate_regulation_of_hydraulic_fracturing/ [https://perma.cc/5VPX-KZKT] (last visited Nov. 18, 2022).

¹² *Id.*

¹³ Renee Lewis Kosnik, *The Oil and Gas Industry’s Exclusions and Exemptions to Major Environmental Statutes*, EARTHWORKS 7 (Oct. 2007), <https://earthworks.org/assets/uploads/archive/files/publications/PetroleumExemptions1c.pdf> [https://perma.cc/8D2X-HYKM] (last visited Nov. 18, 2022).

¹⁴ Shogren, *supra* note 7. The Wind River reservation, as discussed in Section II.A., is particularly relevant to the issue of fracking’s impacts on water sources because of the high

that are known carcinogens.¹⁵ Water sources supplying the Fort Berthold Reservation in North Dakota are also severely affected by the regulatory exemptions.¹⁶

Several factors contribute to how fracking pollution affects water supplies, including the regulatory exemptions in federal environmental laws, the federal government's complacency in monitoring and regulating the environmental effects of fracking, and the disregard for the role tribes play as co-sovereigns with states and the federal government. Regulatory exemptions located in federal laws governing water resources allow toxic pollutants to flow onto tribal lands and through drinking water supplies. Short of Congress eliminating these exemptions altogether, any solution for tribes to prevent toxic produced water from polluting their waters requires proper recognition of tribal sovereignty.

Part I of this Comment will provide an overview of the effects of oil and natural gas production on the environment and human health. Part II will provide a context to explain the implications of this regulatory framework by discussing the resulting water pollution problems occurring on the Wind River Reservation and the Fort Berthold Reservation. Part III will outline the framework of the applicable law, including the CWA, the SDWA, and the RCRA, and the exemptions the law provides for oil and natural gas producers. Part IV will discuss the status of these exemptions as a failure of the federal trust duty that exists between the federal government and tribes, known as the Congressional plenary power doctrine. Part IV will argue that the federal government has neglected its duty by promoting the exemptions that result in polluted waters on tribal lands. Part V will discuss the Tribes Approved for Treatment as States and tribal sovereignty and suggests that the best way to address these problems occurring on tribal lands is on a sovereign-to-sovereign basis.

volume of oil and gas production on or near the reservation, which has resulted in more incidents of fracking pollution affecting water sources critical to the people who live on the reservation. G. Dunkel, *Fracking Pollutes Wind River Reservation*, WORKERS WORLD (Aug. 18, 2013), <https://www.workers.org/2013/08/10479/> [<https://perma.cc/4G9D-RYFN>] (last visited Nov. 18, 2022).

¹⁵ Shogren, *supra* note 7.

¹⁶ Elena Bruess, "This Is Why We Don't Drink the Water," IN THESE TIMES (Jan. 1, 2021), <https://inthesetimes.com/article/fracking-wastewater-drinking-water-contamination-fort-berthold-reservation> [<https://perma.cc/25PL-MCLY>] (last visited Mar. 31, 2023).

I
**ENVIRONMENTAL AND HUMAN HEALTH EFFECTS OF OIL
AND NATURAL GAS PRODUCTION AND THE GAP IN
MONITORING AND REPORTING**

Fracking is a method of oil and natural gas extraction. The fracking process involves injecting water, sand, and chemicals deep underground to break apart rock formations to provide a pathway for oil and natural gas to flow into collection wells.¹⁷ While fracking is not a new extraction process, developments in fracking technology resulted in a massive boom in the fracking industry in the mid-2000s.¹⁸ Water used in fracking becomes contaminated by chemicals introduced during the fracking process and by natural chemicals released from the ground.¹⁹ This contaminated water is called “produced water,” which is unsuitable for return to the water system or for other uses.²⁰

There are multiple ways produced water finds its way into surface water and groundwater supplies after it has been injected underground. Immediately after extraction, large amounts of produced water—nearly thirty percent of the injected fluid—quickly makes its way to the surface.²¹ Over time, more produced water returns to the surface with higher levels of contaminants because it has mixed with naturally occurring heavy metals and radioactive materials underground before surfacing.²² Once collected, produced water is typically stored in

¹⁷ Kevin J. Lynch, *Fracking the Public Trust*, 10 SAN DIEGO J. CLIMATE & ENERGY L. 69, 71 (2019).

¹⁸ Bethany McLean, *How America's 'Most Reckless' Billionaire Created the Fracking Boom*, THE GUARDIAN (Aug. 30, 2018), <https://www.theguardian.com/news/2018/aug/30/how-the-us-fracking-boom-almost-fell-apart> [<https://perma.cc/D9GG-9TQN>] (last visited Nov. 18, 2022).

¹⁹ *Fracking's Environmental Impacts: Water*, GREENPEACE, <https://www.greenpeace.org/usa/fighting-climate-chaos/issues/fracking/environmental-impacts-water/> [<https://perma.cc/WFN8-CCYP>] (last visited Mar. 23, 2023).

²⁰ Andrew J. Kondash et al., *The Intensification of the Water Footprint of Hydraulic Fracturing*, 4 SCI. ADVANCES 1, 1 (2018); Gayathri Vaidyanathan, *Fracking Can Contaminate Drinking Water*, SCI. AM. (Apr. 4, 2016), <https://www.scientificamerican.com/article/fracking-can-contaminate-drinking-water/> [<https://perma.cc/6GTE-ZQT9>] (last visited Nov. 18, 2022).

²¹ Elise G. Elliot et al., *A Systematic Evaluation of Chemicals in Hydraulic-Fracturing Fluids and Wastewater for Reproductive and Developmental Toxicity*, 27 J. EXPOSURE SCI. & ENV'T EPIDEMIOLOGY 90, 90 (2017).

²² *Id.*

containers until it is treated, reused, or disposed.²³ Produced water is typically disposed of by injection into deep underground wells, collection and placement in holding ponds, or, in some cases, release directly onto land.²⁴ Pathways of water contamination from produced water are surface spills, equipment or technology failure, migration from fractures into shallow aquifers, leakage from wastewater containers, or direct discharges into the environment.²⁵ Produced water poses serious contamination risks to surface water supplies because it can flow over land or into rivers and streams once it returns to the surface.²⁶ Produced water also poses contamination risks to underground water supplies because it can migrate away from underground rock formations intended to confine produced water, which were once believed to be impermeable.²⁷

Many chemicals found in produced water have been documented to have serious health effects at low levels of exposure.²⁸ Toxic chemicals found in produced water include lead, arsenic, benzene, formaldehyde, mercury, and chloride.²⁹ Health effects related to these chemicals include endocrine disruption, cancer, brain and nervous system complications, compromised immune systems, and respiratory issues.³⁰ For example, benzene, a carcinogen, “is toxic in water at levels greater than five parts per billion.”³¹ Despite produced water’s toxic constituents, companies regularly dispose of produced water in the cheapest way possible,³² and lack of regulation over the industry perpetuates this blatant disregard for human health.

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.* at 91.

²⁶ *Fracking’s Environmental Impacts: Water*, GREENPEACE, <https://www.greenpeace.org/usa/fighting-climate-chaos/issues/fracking/environmental-impacts-water/> [<https://perma.cc/WFN8-CCYP>] (last visited Mar. 31, 2023).

²⁷ *See id.*

²⁸ Shogren, *supra* note 7.

²⁹ Michael Greenwood, *Chemicals in Fracking Fluid and Wastewater Are Toxic, Study Shows*, YALE NEWS (Jan. 6, 2016), <https://news.yale.edu/2016/01/06/toxins-found-fracking-fluids-and-wastewater-study-shows> [<https://perma.cc/9F9Q-GRLM>] (last visited Nov. 18, 2022).

³⁰ *Hydraulic Fracturing 101*, EARTHWORKS, https://www.earthworks.org/issues/hydraulic_fracturing_101/#CHEMICALS [<https://perma.cc/MMB2-D8SP>] (last visited Mar. 31, 2023).

³¹ *Id.*

³² *See* Shogren, *supra* note 7. Companies typically dispose of fracking fluid and waste through underground injection or storage in aboveground hazardous waste pits. When

After decades of denying the threat of produced water on human health and drinking water supplies, the EPA finally conducted a comprehensive report on the effects that fracking has on water sources in 2016. The report concluded that fracking can have a negative effect on the quality of drinking water.³³ This conclusion marked a slight pivot from an earlier report conducted by the EPA. In 2015, the agency had released a preliminary report indicating that there was no evidence supporting the proposition that fracking has negative effects on drinking water supplies.³⁴ In the 2016 report, the EPA indicated that fracking can be harmful to water supplies in some circumstances, including injection of produced water into inadequate wells, injection of produced water directly into groundwater sources, and discharge of untreated produced water into surface waters.³⁵ Perhaps the most alarming conclusion reached by the EPA is that there is not enough data to support a more comprehensive study of fracking's effects on water supplies.³⁶ This is due to the EPA's failure to actively collect water quality data. The EPA also failed to estimate the national frequency of fracking impacts on water sources, meaning that it could not estimate how many instances of contamination have occurred.³⁷

Another EPA report, finalized in 2020, concerned produced water from the oil and gas industry. In this report, the EPA studied management practices and stakeholder concerns about the current

disposed of in this manner, there is a higher risk of leaks and groundwater contamination. David Hasemyer & Zahra Hirji, *Open Pits Offer Cheap Disposal for Fracking Sludge, but Health Worries Mount*, INSIDE CLIMATE NEWS (Oct. 2, 2014), <https://insideclimatenews.org/news/02102014/open-pits-offer-cheap-disposal-fracking-sludge-health-worries-mount/> [<https://perma.cc/Y8DC-S64U>] (last visited Mar. 31, 2023).

³³ Jared Keller, *The EPA Finally Confirmed That Fracking Is Terrible for Drinking Water*, PACIFIC STANDARD (June 14, 2017), <https://psmag.com/news/the-epa-finally-confirmed-that-fracking-is-terrible-for-drinking-water> [<https://perma.cc/3WHM-SVGS>] (last visited Nov. 18, 2022); Neela Banerjee, *The EPA Once Said Fracking Did Not Cause Widespread Water Contamination. Not Anymore*, INSIDE CLIMATE NEWS (Dec. 14, 2016), <https://insideclimatenews.org/news/14122016/fracking-water-contamination-oil-gas-hydraulic-fracturing-epa-trump/> [<https://perma.cc/YJ6H-N5KH>] (last visited Apr. 12, 2023).

³⁴ *Id.*

³⁵ OFF. OF RSCH. AND DEV., U.S. ENV'T PROT. AGENCY, HYDRAULIC FRACTURING FOR OIL AND GAS: IMPACTS FROM THE HYDRAULIC FRACTURING WATER CYCLE ON DRINKING WATER RESOURCES IN THE UNITED STATES 22 (2016) [hereinafter HYDRAULIC FRACTURING].

³⁶ *Id.* at 2.

³⁷ *Id.* at 41.

approach to discharges of produced water.³⁸ One of the main concerns raised during the course of the 2020 study was the lack of data on the chemical make-up of produced water, the potential effect produced water could have on drinking water supplies, and the documented problems from produced water discharges that are occurring or have occurred in the recent past.³⁹ The report also noted that many tribes expressed concern over increasing discharges of produced water into their water systems.⁴⁰ The overwhelming consensus of those involved in the study—including tribes, states, industry stakeholders, NGOs, and academics—is that there is not enough data available to properly evaluate the current approach to treatment, discharge, or disposal of produced water.⁴¹

Rarely does the EPA require more than a minimal amount of water quality testing at most oil fields, nor does the EPA do its own testing to verify companies' testing results.⁴² The EPA also does not test water quality in streams that produced water flows into with any regularity.⁴³ The gap in data preventing a comprehensive study is continuously increasing. The EPA estimates that there were 25,000 to 300,000 new wells drilled and fractured each year between 2011 and 2014.⁴⁴ Despite this uncertainty, environmental laws continue to exempt oil and natural gas producers from proper regulation. Uncertainty alone should be sufficient to revisit these regulatory schemes and provide more oversight to this juggernaut industry that has no intention of slowing down. The EPA's unwillingness to collect data and conduct studies of produced water has resulted in serious consequences to tribal water supplies. This problem is perpetuated by the legal framework that allows oil and gas companies to operate unchecked.

³⁸ ENG'G AND ANALYSIS DIV., U.S. ENV'T PROT. AGENCY, SUMMARY OF INPUT ON OIL AND GAS EXTRACTION WASTEWATER MANAGEMENT PRACTICES UNDER THE CLEAN WATER ACT, EPA-821-S19-001 1 (2020) [hereinafter MANAGEMENT PRACTICES].

³⁹ *Id.* at 1–4.

⁴⁰ *Id.* at 3.

⁴¹ *Id.* at 1.

⁴² Shogren, *supra* note 7.

⁴³ *Id.*

⁴⁴ HYDRAULIC FRACTURING, *supra* note 35, at 4.

II

CURRENT WATER POLLUTION ISSUES ON THE WIND RIVER RESERVATION AND THE FORT BERTHOLD RESERVATION

Water resource concerns occurring on the Wind River Reservation and the Fort Berthold Reservation demonstrate how the lack of fracking regulation has affected tribal water supplies. These two reservations are home to significant oil and natural gas production via fracking, and as a result, provide examples of the implications of these regulatory loopholes.⁴⁵ Because produced water is not actively monitored to the extent it should be, as the EPA acknowledged in its final 2016 report on the effects of fracking on water supplies,⁴⁶ there have been alarming reports of water pollution on both of these reservations.⁴⁷ The fracking activities on these two reservations also demonstrate the federal government's failure to properly regulate and monitor fracking activities because on both the Wind River Reservation and the Fort Berthold Reservation, the EPA ultimately decides how oil and gas companies dispose of their produced water.⁴⁸ While these are not the only reservations that experience water pollution from oil and natural gas production, they provide good examples of the harms that insufficient regulation and monitoring can cause.⁴⁹

A. Wind River Reservation

The Northern Arapahoe and Eastern Shoshone tribes share the Wind River Reservation.⁵⁰ The reservation is located in central Wyoming in the Wind River Basin, in which geological formations contain

⁴⁵ See *infra* Sections II.A, II.B.

⁴⁶ HYDRAULIC FRACTURING, *supra* note 35.

⁴⁷ See Shogren, *supra* note 7; Elena Bruess, *Tribal Groups Fight Fracking: "Why We Don't Drink the Water,"* GREENBIZ (Dec. 16, 2020), <https://www.greenbiz.com/article/tribal-groups-fight-fracking-why-we-dont-drink-water> [<https://perma.cc/NA7R-J8S2>] (last visited Nov. 18, 2022).

⁴⁸ Shogren, *supra* note 7; Jen Shannon, *3 Tribes at the Heart of the Fracking Boom*, *Sci. Am.* (Oct. 10, 2018), <https://blogs.scientificamerican.com/voices/3-tribes-at-the-heart-of-the-fracking-boom/> [<https://perma.cc/XUS5-M4LT>] (last visited Mar. 31, 2023).

⁴⁹ There are significant grounds for differences in opinion among tribes and among tribal members about the benefits or harms of oil and gas production in Indian country. This Comment attempts to highlight only incidents of water pollution on these reservations that have been documented and reported.

⁵⁰ *The Wind River Indian Reservation*, WYO.'S WIND RIVER COUNTRY, <https://windriver.org/destinations/wind-river-indian-reservation/> [<https://perma.cc/R9CD-72XN>] (last visited Mar. 31, 2023).

significant deposits of oil and natural gas.⁵¹ Nearly thirty-eight percent of federal onshore natural gas production and sixteen percent of federal onshore oil production occur in Wyoming.⁵² In the past few decades, there have been several documented findings of toxic levels of pollutants, negatively affected ecology and wildlife, increased water temperatures, and oil and gas found on the surface of water in the reservation.⁵³ Produced water has had negative effects on both surface water and groundwater located within the reservation's boundaries or very close to the reservation's borders.

While most produced water is reinjected into underground wells, some produced water is released directly onto the land, which eventually makes its way into other bodies of water.⁵⁴ Oil and gas companies operating on the Wind River Reservation have discharged produced water directly onto pasture lands located on the reservation. A report from 2012 showed that this practice resulted in foam buildup on pools of dark water, pungent fumes surrounding the discharges, and water temperatures exceeding 125 degrees Fahrenheit.⁵⁵ According to the report, tribal officials stated that directly produced water discharges had been occurring for decades without garnering much attention from the EPA or other federal agencies.⁵⁶

Another alarming example of pollution from fracked produced water occurred in the city of Pavillion, Wyoming, which is located within the Wind River Reservation boundary and is a site of dense fracking production.⁵⁷ In response to concerns raised by people living in the area, the EPA conducted a water quality study and released a draft report in 2011, which indicated the presence of benzene and other toxic

⁵¹ James E. Fox & Gordon L. Dolton, *Wind River Basin Province (035)*, U.S. GEOLOGICAL SURV. 1, <https://certmapper.cr.usgs.gov/data/noga95/prov35/text/prov35.pdf> [<https://perma.cc/HFU5-25PX>] (last visited Mar. 31, 2023).

⁵² *New Analysis Shows Wyoming Among Hardest Hit States by Proposal to Ban Federal Land Leases*, API (Sept. 9, 2020), <https://www.api.org/news-policy-and-issues/news/2020/09/09/wyoming-federal-leasing-ban> [<https://perma.cc/H5LN-FY2Q>] (last visited Mar. 31, 2023).

⁵³ See Shogren, *supra* note 7.

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ See Shogren, *supra* note 7; Whitney-Williams & Hoffmann, *supra* note 5.

⁵⁷ Neela Banerjee, *Fracking Study Finds Toxins in Wyoming Town's Groundwater and Raises Broader Concerns*, INSIDE CLIMATE NEWS (Mar. 29, 2016), <https://insideclimatenews.org/news/29032016/fracking-study-pavillion-wyoming-drinking-water-contamination-epa/> [<https://perma.cc/WVE8-U6K5>] (last visited Mar. 31, 2023).

contaminants in a freshwater aquifer.⁵⁸ The EPA never issued a final report, but the draft was the first documented evidence of fracking-related water contamination on the reservation.⁵⁹ The draft was the first step the EPA took to investigate water contamination from fracking on the reservation, even though residents of the area had signaled problems since the 1990s.⁶⁰ Powerful companies in the area, such as the Encana Corporation,⁶¹ pressured the EPA to shift the investigation to the Wyoming Department of Environmental Quality (DEQ), which reduced the breadth of the study and effectively rendered it pointless.⁶² The individual EPA report and subsequent industry pressure occurred when the fracking boom had just begun, and oil and gas producers could not allow the study to threaten their business interests.⁶³

In a 2016 study conducted by Stanford University, researchers found chemicals frequently used in fracking-produced water in Pavillion's water supply.⁶⁴ Researchers also found that companies operating in the area fracked at much shallower depths than previously believed to occur.⁶⁵ This was significant because it meant that drilling and injection was occurring closer to underground water supplies, which increased the likelihood of contamination.⁶⁶ The study also observed the shelved

⁵⁸ *Fracking Cover-Up Continues Groundwater Contamination Disaster in Pavillion, Wyoming*, W. ORG. OF RES. COUNCILS (Feb. 21, 2019) [hereinafter *Fracking Cover-Up*], <http://www.worc.org/fracking-cover-up-continues-groundwater-contamination-disaster-in-pavillion-wyoming/> [https://perma.cc/727N-XGEP] (last visited Mar. 31, 2023).

⁵⁹ *Id.*

⁶⁰ Zahra Hirji, *People near Wyoming Fracking Town Show Elevated Levels of Toxic Chemicals*, INSIDE CLIMATE NEWS (June 22, 2016), <https://insideclimatenews.org/news/22062016/study-finds-toxic-oil-and-gas-chemicals-benzene-near-pavillion-wyoming-air-water-pollution-fracking/> [https://perma.cc/722Q-ZRRJ] (last visited Mar. 31, 2023).

⁶¹ Encana Corporation, which operates hundreds of wells in Wyoming, attempted to shield the public from knowledge of the risks that fracking has on water sources even though multiple studies found toxic chemicals in produced water. Several Wyoming residents sued Encana for its fraudulent activity when the company attempted to cover up evidence linking its fracking operations to water pollution. Benjamin Storrow, *Judge: Pavillion Fracking Contamination Case Can Go to Trial*, WYOFILE (Jan. 4, 2017), <https://wyofile.com/judge-pavillion-fracking-contamination-case-can-go-to-trial/> [https://perma.cc/W3SV-L6FT]; *Fracking Cover-Up*, *supra* note 58.

⁶² See *Fracking Cover-Up*, *supra* note 58.

⁶³ *Id.*

⁶⁴ Dominic C. DiGiulio & Robert B. Jackson, *Impact to Underground Sources of Drinking Water and Domestic Wells from Production Well Stimulation and Completion Practices in the Pavillion, Wyoming, Field*, 50 ENV'T SCI. & TECH. 4524 (2016).

⁶⁵ *Id.* at 4525; Banerjee, *supra* note 57.

⁶⁶ Banerjee, *supra* note 57.

2011 EPA draft report and subsequent data collected by the Wyoming DEQ,⁶⁷ and it concluded that the data showed the presence of a variety of unusual chemicals in the water supply associated with the fracking process.⁶⁸

What has occurred on the Wind River Reservation is significant for several reasons. First, the EPA was not actively monitoring fracking activities, and it was not looking for possible instances of pollution. Instead, the EPA responded after several years of citizens raising alarms. Second, the EPA did not complete a comprehensive study of the water pollution. Rather, in response to pushback from the industry, the EPA shifted the study to the state of Wyoming, which also demonstrated its unwillingness to scrutinize the industry. Independent, nongovernmental institutions are more likely to conduct comprehensive water quality studies regarding the impacts of fracking on water supplies. Unfortunately, the EPA's practice of ignoring water pollution concerns associated with fracking is the norm.

B. Fort Berthold Reservation

The Fort Berthold Reservation, located in west-central North Dakota on the Missouri River, is home to the Arikara, Hidatsa, and Mandan Tribes.⁶⁹ The reservation sits in the Williston Basin, which is known for prolific deposits of oil and natural gas. Fracking has increased dramatically in North Dakota since 2008.⁷⁰ In the past decade, the Bakken formation, a major source of oil and natural gas, has gone from producing 200,000 barrels of oil per day to producing over one million barrels of oil per day.⁷¹ Along with the increase in production, some of the largest spills of produced water in the past decade have occurred in North Dakota.⁷² Additionally, some of these large spills have occurred on the Fort Berthold reservation or very close to it, involving waters

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ *North Dakota: Forth Berthold Reservation*, N. PLAINS RSRV. AID, http://www.nativepartnership.org/site/PageServer?pagename=airc_res_nd_forthberthold [<https://perma.cc/GLQ8-8V9P>] (last visited Mar. 31, 2023).

⁷⁰ Taylor Schaefer, *New Study Confirms Fracking Is to Blame for Water Contamination in North Dakota*, SAVE THE WATER (May 28, 2016), <https://savethewater.org/new-study-confirms-fracking-blame-water-contamination-north-dakota-2/>.

⁷¹ Sari Horwitz, *Dark Side of the Boom*, WASH. POST (Sept. 28, 2014), <https://www.washingtonpost.com/sf/national/2014/09/28/dark-side-of-the-boom/> [<https://perma.cc/DZ4U-HUWU>].

⁷² Schaefer, *supra* note 70.

that flow through the reservation, but spills involving the reservation often go unreported and are often monitored less.⁷³

One of the primary water-resource concerns on the Fort Berthold reservation in North Dakota is related to the development of oil and natural gas production.⁷⁴ In response to the Three Affiliated Tribes, which indicated that it needed long-term water quality monitoring, the U.S. Department of the Interior conducted a study to address these concerns. The report stated that “the potential for catastrophic environmental and economic effects from spills and other anthropogenic activities is ever present, especially for the hydrologic processes within the reservation.”⁷⁵ Moreover, the report included measures of constituent materials known to be present in produced water, including chloride, sulfate, arsenic, ammonia, and other trace metals.⁷⁶ Several of these constituents were found in quantities higher than the EPA recommends for safe drinking water. Trace metals including dissolved aluminum, iron, and manganese were found in concentrations higher than what the EPA recommends for surface water.⁷⁷

In 2014, one of the largest spills in North Dakota’s history occurred on the Reservation near a town called Mandaree.⁷⁸ A pipeline containing millions of gallons of produced water burst near Bear Den Bay on Lake Sakakawea, resulting in produced water that flowed into a vital water supply for the town of Mandaree.⁷⁹ The reservation is located on Lake Sakakawea, which provides a major source of the reservation’s drinking water.⁸⁰ The pipeline burst only a quarter-mile from the point where the town withdraws its drinking water.⁸¹ In

⁷³ *Id.*

⁷⁴ Robert F. Lundgren & Mary J. Iorio, *Characterization of Surface-Water and Groundwater Quality on the Fort Berthold Reservation, North Dakota, 2014–17*, U.S. GEOLOGICAL SURVEY 1 (2020).

⁷⁵ *Id.*

⁷⁶ *Id.* at 6.

⁷⁷ *Id.* at 32–33.

⁷⁸ *Id.* at 1.

⁷⁹ *Id.*; Nancy E. Lauer et al., *Brine Spills Associated with Unconventional Oil Development in North Dakota*, 50 ENV’T SCI. TECH. 5389, 5390 (2016); Elena Bures, *How Fracking Has Contaminated Drinking Water*, CONSUMER REPS. (Dec. 3, 2020), <https://www.consumerreports.org/water-contamination/how-fracking-has-contaminated-drinking-water-a1256135490/> [<https://perma.cc/4XTM-MK4G>].

⁸⁰ *Id.*

⁸¹ *Id.*; see Lauer et al., *supra* note 79.

2016, Duke University conducted a study at Bear Den Bay⁸² and found elevated levels of fracking-related contaminants, including ammonium, selenium, and lead.⁸³ The study also found that contamination from spills of produced water have led to some areas exceeding federal drinking water guidelines.⁸⁴

Another serious incident of water pollution in North Dakota occurred in 2015, when a pipeline located near Blacktail Creek, which flows into a tributary of the Missouri River, was found to be slowly leaking produced water.⁸⁵ The pipeline leaked nearly three million gallons of produced water into Blacktail Creek, which eventually reached Lake Sakakawea. This incident was the largest produced water spill in North Dakota since the industry boom in the mid-2000s.⁸⁶ The noticeable effects of the spill on the waterway were similar to incidents reported on the Wind River Reservation: (1) the chemicals discolored the creek's water, (2) the water had an oily sheen on the surface, and (3) the water was saltier than ocean water.⁸⁷

As is the case on the Wind River Reservation, monitoring and reporting on the Fort Berthold Reservation has not received the attention necessary to conduct a comprehensive water quality study. Although fracking pollution concerns have gained attention through recent reporting, there remains a large gap in data and active monitoring. Ultimately, these two examples suggest that there are several undeniable truths regarding unregulated oil and gas production on or near tribal lands. First, produced water from fracking is negatively affecting tribal water supplies. Second, the federal government does not play an active role in regulation. Therefore, it does not get involved until public outcry can no longer be ignored or there is a highly visible spill or disaster, and at that point the damage is done. Third, the law as it is currently written does not allow tribes to regulate the oil and natural gas industry operating on their lands to the extent necessary to protect their waters and environment.

⁸² Schaefer, *supra* note 70.

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ See Emily Guerin, *In North Dakota, Oilfield Spill Problems Worsen*, INSIDE ENERGY (Jan. 28, 2015), <http://insideenergy.org/2015/01/28/in-north-dakota-oilfield-spill-problems-worsen/> [<https://perma.cc/X3VE-YEP5>].

⁸⁶ *Id.*

⁸⁷ *Id.*

III LEGAL FRAMEWORK OF PRODUCED WATER REGULATION— CWA, SDWA, RCRA

The legal landscape that allows produced water to flow through Indian country and beyond is characterized by a handful of regulatory exemptions under federal water pollution laws for oil and gas production. Regulation of fracking produced water is largely left to states because the federal government has expressly declined to regulate fracking on federal lands and reservations.⁸⁸ Several federal laws regulate water quality and pollution discharges into surface waters and underground water supplies, such as the RCRA, CWA, and SDWA. The RCRA regulates the generation, transportation, storage, and disposal of hazardous waste.⁸⁹ Generally, the CWA and SDWA regulate surface waters and groundwater from pollutants and the disposal of wastewater.⁹⁰ However, each of these laws contains regulatory exemptions for oil and natural gas producers.⁹¹ In effect, the exemptions located within the RCRA, CWA, and SDWA promote unsafe water management that results in severe human health concerns.⁹² Given the amount of oil and natural gas production on tribal lands, people living on reservations are especially affected by these regulatory gaps.⁹³

A. Resource Conservation and Recovery Act

The stated purpose of RCRA is to protect human health and the environment from improper hazardous waste management.⁹⁴ The RCRA was enacted in 1976, and it gave the EPA the authority to

⁸⁸ Melanie McCormick, *Conflicting Theories at Play: Chemical Disclosure and Trade Secrets in the New Federal Fracking Regulation*, 9 GOLDEN GATE U. ENV'T L.J. 217, 218 (2016).

⁸⁹ *Regulations and Exemptions*, WATERSHED COUNCIL, <https://www.watershedcouncil.org/hydraulic-fracturing---regulations-and-exemptions.html> [<https://perma.cc/NZ3A-T8W9>] (last visited Mar. 31, 2023).

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² *Id.*

⁹³ See Tracey Osborne, *Native Americans Fighting Fossil Fuels*, SCI. AM. (Apr. 9, 2018), <https://blogs.scientificamerican.com/voices/native-americans-fighting-fossil-fuels/> [<https://perma.cc/2MU8-NELD>].

⁹⁴ *Resource Conservation and Recovery Act (RCRA) and Federal Facilities*, EPA, <https://www.epa.gov/enforcement/resource-conservation-and-recovery-act-rcra-and-federal-facilities> [<https://perma.cc/8HND-LN5X>] (last visited Mar. 31, 2023).

regulate hazardous waste from “cradle-to-grave.”⁹⁵ The EPA regulates hazardous waste from the time it is generated, transported, and stored or disposed.⁹⁶ Hazardous waste is regulated by Subtitle C of the RCRA, but in 1978 the EPA removed six categories of waste from this subtitle because it deemed those categories as “special waste.”⁹⁷ Included in this “special waste” category is “Exploration and Production (E&P)” wastes, which include produced water from the fracking process. This categorization meant that the E&P wastes were less stringently regulated under Subtitle C, but the waste was still subject to some disposal requirements.⁹⁸ The EPA considered these special wastes as less toxic and did not pose a serious risk to human health and the environment, so they did not need to be subject to as stringent regulation.⁹⁹

In 1980, Congress amended the RCRA with the Bentsen and Bevill Amendments.¹⁰⁰ These amendments, named after the Congressmen that sponsored them, were meant to be temporary exclusions until the EPA could study the effects of oil and gas waste.¹⁰¹ The Bentsen Amendment specifically applies to “drilling waste, produced waters, and other wastes associated with the exploration, development, and production of crude oil or natural gas,” and the Bevill Amendment exempts waste from fossil fuel combustion and waste from fossil fuel extraction.¹⁰² These exemptions would otherwise fall under RCRA’s disposal restrictions.¹⁰³ These amendments were meant to be temporary, pending the EPA conducting a study to determine whether the waste should be regulated as hazardous waste under Subtitle C of the RCRA.¹⁰⁴

⁹⁵ *Summary of the Resource Conservation and Recovery Act*, EPA, <https://www.epa.gov/laws-regulations/summary-resource-conservation-and-recovery-act> [<https://perma.cc/ELX4-Q3JS>] (last visited Mar. 31, 2023).

⁹⁶ *Id.*

⁹⁷ Whitney-Williams & Hoffmann, *supra* note 5, at 462.

⁹⁸ *Id.*

⁹⁹ *Id.*; *Special Wastes*, EPA, <https://www.epa.gov/hw/special-wastes> [<https://perma.cc/VE3V-A2S5>] (last visited Mar. 31, 2023).

¹⁰⁰ LINDA LUTHER, CONG. RSCH. SERV., R43149, BACKGROUND ON AND IMPLEMENTATION OF THE BEVILL AND BENTSEN EXCLUSIONS IN THE RESOURCE CONSERVATION AND RECOVERY ACT: EPA AUTHORITIES TO REGULATE “SPECIAL WASTES” (2013).

¹⁰¹ *Id.*

¹⁰² 42 U.S.C. § 6921(b)(2)(A) (1980); Whitney-Williams & Hoffmann, *supra* note 5, at 462.

¹⁰³ LUTHER, *supra* note 100, at 1.

¹⁰⁴ *Id.*

The administrator of the EPA has a nondiscretionary duty to review (and revise if necessary) regulations applicable to oil and natural gas production every three years.¹⁰⁵ This means that the EPA has a statutory mandate to conduct this review, and failure to do so violates Congress's express will. In 1988, the EPA conducted a review of oil and natural gas waste and determined that it did not require regulation under Subtitle C.¹⁰⁶ The EPA neglected to fulfil its nondiscretionary duty and review the 1988 determination until twenty-eight years later in 2016, demonstrating the agency's regulatory failure regarding oil and natural gas waste.¹⁰⁷ In 2016, several environmental groups, out of concern for the amount of produced water and how it is disposed, sued the EPA for its failure to timely review its regulations.¹⁰⁸ The EPA promptly entered into a consent decree to review of these wastes and make a determination about whether regulations revisions are necessary.¹⁰⁹ In 2019, the EPA finally released that report, which concluded that it was unnecessary to revise the regulations applicable to oil and natural gas production.¹¹⁰ Thus, oil and natural gas produced water will continue to be regulated as nonhazardous waste, despite serious concerns regarding its contents.

The RCRA allows the EPA to delegate authority to the states to handle the storage, transport, and disposal of hazardous and nonhazardous waste if the state regulates as stringently as the federal government.¹¹¹ The vast majority of states have obtained this delegated authority.¹¹² Thus, should states wish to regulate produced water as a hazardous material or more stringently than federal regulations, they

¹⁰⁵ 42 U.S.C. § 6912(b).

¹⁰⁶ LUTHER, *supra* note 100, at 1.

¹⁰⁷ Complaint, Environmental Integrity Project v. McCarthy, No. 1:16-cv-842 (D.D.C. May 4, 2016), <https://environmentalintegrity.org/wp-content/uploads/2016-05-04-RCRA-OG-Wastes-Deadline-Suit-Complaint-FILED.pdf> [<https://perma.cc/6T42-XRRX>].

¹⁰⁸ *Id.*

¹⁰⁹ *Management of Oil and Gas Exploration and Production Waste*, EPA, <https://www.epa.gov/hw/management-oil-and-gas-exploration-and-production-waste> [<https://perma.cc/49KG-FV8P>] (last visited Apr. 26, 2021) [hereinafter *Management*].

¹¹⁰ EPA, MANAGEMENT OF OIL AND GAS EXPLORATION, DEVELOPMENT AND PRODUCTION WASTES: FACTORS INFORMING A DECISION ON THE NEED FOR REGULATORY ACTION 1-2 (Apr. 2019), https://www.epa.gov/sites/production/files/2019-04/documents/management_of_exploration_development_and_production_wastes_4-23-19.pdf [<https://perma.cc/3J7F-WJ8C>].

¹¹¹ Michael Burger, *The (Re)Federalization of Fracking Regulation*, 2013 MICH. ST. L. REV. 1483, 1521 (2013).

¹¹² *Id.*

can do so. However, the RCRA treats tribes very differently than states for the purposes of the Act. Under the RCRA, tribes can be treated as “municipalities”—not as states. The statute specifically includes tribes in its definition of municipality.¹¹³ Under the Act, municipalities do not have the same authority as states for the purposes of implementing RCRA programs. Courts have held that tribes cannot impose permitting standards or restrictions because the RCRA does not delegate that authority to tribes.¹¹⁴ So, tribes do not have the ability to regulate produced water more stringently or as a hazardous waste like states do. Because tribes cannot obtain delegated authority under the RCRA, the EPA is primarily responsible for implementing the RCRA in Indian country.

B. Clean Water Act

In response to growing concerns about the impact of water pollution on the environment, the CWA was enacted in 1972 to control water quality.¹¹⁵ Goals of the CWA include eliminating the discharge of pollutants into navigable waterways¹¹⁶ and preventing the discharge of toxic pollutants into surface water.¹¹⁷ The stated purpose of the CWA is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”¹¹⁸ The law provides the basic framework for regulating pollutant discharges into waters of the United States.¹¹⁹ The CWA authorizes the EPA to set national water quality standards for specific contaminants.¹²⁰ The CWA also establishes the National Pollutant Discharge Elimination System (NPDES) permitting program, which regulates the type and quantity of pollutants that an entity can discharge into surface water if the EPA has granted it a

¹¹³ 42 U.S.C. § 6903(13). *See also* 42 U.S.C. § 6945(c) (explaining that “each State” can implement standards under RCRA); Whitney-Williams & Hoffmann, *supra* note 5, at 460.

¹¹⁴ *See Backcountry Against Dumps v. EPA*, 100 F.3d 147, 151 (D.C. Cir. 1996) (holding that tribes, as municipalities under RCRA, cannot submit solid waste management plans to the EPA for approval; only states are able to do this under RCRA).

¹¹⁵ *Clean Water Act (CWA)*, BUREAU OF OCEAN ENERGY MGMT., <https://www.boem.gov/environment/environmental-assessment/clean-water-act-cwa> (last visited Apr. 26, 2021).

¹¹⁶ 33 U.S.C. § 1251(a)(1).

¹¹⁷ § 1251(a)(3).

¹¹⁸ § 1251(a).

¹¹⁹ *Regulations and Exemptions*, *supra* note 89.

¹²⁰ *Clean Water Act (CWA)*, *supra* note 115.

permit.¹²¹ The NPDES program essentially provides “permit[s] to pollute.”¹²²

The CWA also authorizes the EPA to categorize and list pollutants based on their characteristics.¹²³ The Code of Federal Regulations provides a list of pollutants that are regulated under the Act.¹²⁴ Pollutants are categorized as conventional or toxic.¹²⁵ Pollutants categorized as toxic include disease-causing agents, which can cause death, disease, cancer, genetic mutations and abnormalities, and physiological complications once an organism is exposed to the pollutant.¹²⁶ Some of the chemicals in produced water that cause the greatest environmental concern due to their toxicity and ability to bioaccumulate, or become concentrated inside living organisms, are aromatic hydrocarbons, some alkylphenols, and certain metals, all of which are listed as toxic pollutants under CWA regulations.¹²⁷ Some of the chemical pollutants that fall into these categories include metals like arsenic, cadmium, lead, mercury, and chromium; organic chemical compounds that fall into these categories include phenol, benzene, ethylbenzene, and toluene.¹²⁸

Despite the amount of toxic chemicals found in produced water, the CWA provides a permitting exemption, or loophole, for oil and natural gas entities that discharge these pollutants into surface water.¹²⁹ This exemption allows produced water from oil and gas production, regardless of what chemicals are found in it, to be discharged into surface water if the produced water will be used in connection with livestock and agriculture activities west of the 98th meridian.¹³⁰ The

¹²¹ *Regulations and Exemptions*, *supra* note 89.

¹²² Maria E. Hohn, *Determining Water Quality Standards on Tribal Reservations: A Cooperative Approach to Addressing Water Quality Under the Clean Water Act*, 11 U. DENV. WATER L. REV. 293, 294 (2008).

¹²³ *Toxic and Priority Pollutants Under the Clean Water Act*, EPA, <https://www.epa.gov/eg/toxic-and-priority-pollutants-under-clean-water-act> [<https://perma.cc/A85J-ENZP>] (last visited Oct. 31, 2022).

¹²⁴ 40 C.F.R. § 401.15–.16.

¹²⁵ *Id.*

¹²⁶ *Clean Water Act (CWA)*, *supra* note 115.

¹²⁷ JERRY M. NEFF ET AL., PRODUCED WATER: OVERVIEW OF COMPOSITION, FATES, AND EFFECTS 27 (2011); *Toxic and Priority Pollutants Under the Clean Water Act*, *supra* note 123; 40 C.F.R. 401.15 (2022).

¹²⁸ NEFF ET AL., *supra* note 127, at 4–18; 40 C.F.R. § 401.15.

¹²⁹ NAT. RES. DEF. COUNCIL, FRACKING (Feb. 2013), <https://www.nrdc.org/sites/default/files/policy-basics-fracking-FS.pdf> [<https://perma.cc/58JJ-9TJM>].

¹³⁰ 40 C.F.R. § 435.50; Whitney-Williams & Hoffmann, *supra* note 5, at 460–61.

only caveat to this exemption is that the produced water must be of “good enough quality” for wildlife and livestock.¹³¹ However, the EPA has not defined what constitutes “good enough” for wildlife and livestock.¹³² This exemption is grounded in the western water law doctrine of prior appropriation.¹³³ The prior appropriation doctrine operates to ensure that water, given its scarcity in the West, is put to a beneficial use.¹³⁴ The EPA has issued voluntary management practices for oil and gas production waste but does not require any entity to implement these measures.¹³⁵ Produced water is regulated by the NPDES program if it is disposed of in surface waters, but in the West the wildlife and agriculture loophole allows oil and natural gas producers to circumvent regulation.¹³⁶

The CWA is largely a delegated federal program primarily administered and enforced by states.¹³⁷ When the EPA grants a state governmental agency delegated authority, that agency can either adopt the federal water quality standards, which are the minimum standard, or that agency can adopt stricter water quality standards.¹³⁸ Section 402(b) of the CWA authorizes states, tribes, and territories to submit NPDES program plans for approval by the EPA for the purposes of regulating pollutant discharges.¹³⁹ When a state obtains approval from the EPA, it then has primary jurisdiction for approving NPDES applications.¹⁴⁰ Thus, under this scheme, states take on the primary role in running permitting programs, monitoring water quality, and ensuring the waterway meets approved water quality standards.¹⁴¹ The idea of cooperative federalism within the CWA is essentially an acknowledgement that states have a significant interest in regulating their own waters.¹⁴² Should a state agency wish to regulate the chemical

¹³¹ 40 C.F.R. § 435.51(c).

¹³² Whitney-Williams & Hoffmann, *supra* note 5, at 465.

¹³³ *Id.* at 464–65.

¹³⁴ *Id.* at 465.

¹³⁵ *Id.* at 465 n. 108; *Management*, *supra* note 109.

¹³⁶ Whitney-Williams & Hoffmann, *supra* note 5, at 465.

¹³⁷ *Id.* at 463.

¹³⁸ 40 C.F.R. § 131.4(a) (2021).

¹³⁹ 33 U.S.C. § 1342(b) (2012). *See also* NPDES State Program Authorization Information, EPA, <https://www.epa.gov/npdes/npdes-state-program-authorization-information> [https://perma.cc/9F5B-8PZU] (last visited Mar. 31, 2023).

¹⁴⁰ *Id.*; 33 U.S.C. § 1370 (2016).

¹⁴¹ Jessica Owley, *Tribal Sovereignty over Water Quality*, 20 J. LAND USE & ENV'T L. 61, 73 (2004).

¹⁴² *Id.*

pollutants found in produced water more stringently than the standards the EPA has set, it can do so, or it can deny permitting oil and natural gas companies to discharge produced water.

Under the CWA, tribes can be treated “as States” for the purposes of fulfilling the federal program.¹⁴³ The Treatment as State (TAS) program under the CWA has several requirements that tribes must meet before the EPA will grant tribes authority to set water quality standards and implement a discharge permitting system.¹⁴⁴

C. Safe Drinking Water Act

The SDWA¹⁴⁵ is the primary federal law that regulates drinking water quality. Congress enacted the SDWA in 1974 to ensure that water is safe for human consumption.¹⁴⁶ Underground sources of drinking water (USDWs) are underground aquifers that have the potential to supply drinking water regulated by the SWDA.¹⁴⁷ Like the CWA, the SDWA directs the EPA to set national standards for drinking water and regulations, known as National Primary Drinking Water Regulations (NPDWR), for contaminants that can cause human health effects.¹⁴⁸ The Act directs the EPA to regulate a contaminant if three criteria are met:

- (i) the contaminant may have an adverse effect on the health of persons;
- (ii) the contaminant is known to occur or there is a substantial likelihood that the contaminant will occur in public water systems with a frequency and at levels of public health concern; and
- (iii) in the sole judgment of the Administrator, regulation of such contaminant presents a meaningful opportunity for health risk reduction for persons served by public water systems.¹⁴⁹

Primary standards categorize contaminants by their characteristics, including microorganisms, disinfectants, disinfection byproducts,

¹⁴³ 33 U.S.C. § 1377 (2012).

¹⁴⁴ Owley, *supra* note 141, at 78.

¹⁴⁵ 42 U.S.C. § 300f.

¹⁴⁶ *Overview of the Safe Drinking Water Act*, EPA, <https://www.epa.gov/sdwa/overview-safe-drinking-water-act> [<https://perma.cc/5RQ7-YXAH>] (last visited Mar. 31, 2023).

¹⁴⁷ Banerjee, *supra* note 57.

¹⁴⁸ ELENA H. HUMPHREYS & MARY TIEMANN, CONG. RSCH. SERV., RL31243, *Safe Drinking Water Act (SWDA): A Summary of the Act and Its Major Requirements* (2021).

¹⁴⁹ 42 U.S.C. § 300g-1(b)(1)(A)(i)-(iii).

inorganic chemicals, organic chemicals, and radionuclides.¹⁵⁰ Chemical pollutants listed under the SDWA are similar to the chemical pollutants listed under the CWA and include arsenic, barium, cadmium, cyanide, lead, mercury, selenium, benzene, ethylbenzene, and toluene.¹⁵¹ These chemicals are present in produced water from oil and natural gas production.¹⁵²

The SDWA also authorizes the establishment of the Underground Injection Control (UIC) program to protect underground drinking water sources.¹⁵³ The EPA regulates the underground injection of toxic pollutants through the program.¹⁵⁴ The UIC program designates six well classes, and each well class covers a different type and depth of injection activity.¹⁵⁵ For example, class II wells are used to inject liquids and wastewater produced in the process of oil and natural gas production.¹⁵⁶

The Energy Policy Act of 2005¹⁵⁷ amended the SDWA to exempt fracking from the UIC program.¹⁵⁸ This amendment is known as the “Halliburton Loophole”¹⁵⁹ and excludes all fracking fluids from the definition of “underground injection” under the SDWA.¹⁶⁰ The EPA lacks the authority to regulate produced water under the SDWA, and it cannot require oil and gas companies to disclose the chemicals in produced water at the federal level.¹⁶¹ Therefore, it allows oil and gas producers that use the hydraulic fracturing extraction method to inject produced water underground without a UIC permit, and it means that

¹⁵⁰ *National Primary Drinking Water Regulations*, EPA, <https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations> [https://perma.cc/327R-H5JX] (last visited Mar. 31, 2023).

¹⁵¹ *Id.*

¹⁵² *Id.*; see NEFF ET AL., *supra* note 127, at 4–18.

¹⁵³ HUMPHREYS ET AL., *supra* note 148, at 19.

¹⁵⁴ *Underground Injection Control*, GROUNDWATER PROT. COUNCIL, <https://www.gwpc.org/topics/underground-injection-control/> [https://perma.cc/WQ3Z-NS3Z] (last visited Mar. 23, 2023).

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ Pub. L. No. 109-59, 119 Stat. 594.

¹⁵⁸ *Regulations and Exemptions*, *supra* note 89.

¹⁵⁹ 42 U.S.C. § 300h(d)(1)(B) (states that the definition of “underground injection” does not include the injection of fluids used in hydraulic fracturing operations related to oil and gas production); Amy Mall, *New Report: Drinking Water at Risk From Poorly Regulated Oil and Gas Waste Injection*, NAT’L RES. DEF. COUNCIL (July 29, 2014), <https://www.nrdc.org/experts/amy-mall/new-report-drinking-water-risk-poorly-regulated-oil-and-gas-waste-injection> [https://perma.cc/53W4-FHN5].

¹⁶⁰ McCormick, *supra* note 88, at 229.

¹⁶¹ *Id.* at 230.

these producers do not have to disclose the chemicals they use in the fracking process.¹⁶² This regulatory exemption from SDWA has one limitation: fracking operations that use the uncommon practice of using diesel additives are subject to regulation.¹⁶³ However, this practice is very uncommon.¹⁶⁴ In effect, this loophole prevents the EPA from mandating that oil and gas companies disclose the hazardous materials in produced water injected into the ground by their fracking. Disclosure is essential to regulating produced water.¹⁶⁵ The SDWA is a cornerstone environmental protection law, and this loophole allows oil and gas companies to pollute drinking water supplies with impunity.

The SDWA, like the CWA, takes a cooperative federalist approach to administering and enforcing the Act.¹⁶⁶ The SDWA allows states to assume primacy of oversight and enforcement once the EPA approves state regulations that are as stringent as the national standards and once the state develops enforcement procedures.¹⁶⁷ The EPA can also authorize state UIC programs to regulate class II wells for oil and gas injection operations.¹⁶⁸ When a state has obtained primacy under SDWA, it can designate more stringent water quality standards, and it has the discretion to approve or deny UIC permits from oil and gas companies.¹⁶⁹ Although states have a significant interest in protecting USDWs from fracking, when it comes to state regulation of underground injection of produced water, states rarely regulate the industry to the extent they are able.¹⁷⁰ For example, very few states require companies to disclose the chemicals in produced water.¹⁷¹

¹⁶² Renee Lewis Kosnik, *The Oil and Gas Industry's Exclusions and Exemptions to Major Environmental Statutes*, EARTHWORKS 2, 8 (2007), <https://www.earthworks.org/cms/assets/uploads/archive/files/publications/PetroleumExemptions1c.pdf> [<https://perma.cc/8D2X-HYKM>].

¹⁶³ Szonja Ludvig, *The Tribes Must Regulate: Jurisdictional, Environmental, and Religious Considerations of Hydraulic Fracturing on Tribal Lands*, 2013 BYU L. REV. 727, 741 (2014).

¹⁶⁴ *Id.*

¹⁶⁵ McCormick, *supra* note 88, at 230; *The Halliburton Loophole*, *supra* note 11; Wenonah Hauter, *Ten Years Later, the "Halliburton Loophole" and America's Dirty Fracking Boom*, FOOD & WATER WATCH (Aug. 10, 2015), <https://www.commondreams.org/views/2015/08/10/ten-years-later-halliburton-loophole-and-americas-dirty-fracking-boom> [<https://perma.cc/KB9C-66YG>].

¹⁶⁶ HUMPHREYS ET AL., *supra* note 148, at 1, 9.

¹⁶⁷ *Id.*; 42 U.S.C. § 300h-1.

¹⁶⁸ *See* 42 U.S.C. § 300h-1(b)(2).

¹⁶⁹ HUMPHREYS ET AL., *supra* note 148, at 9.

¹⁷⁰ McCormick, *supra* note 88, at 30.

¹⁷¹ *Id.*

The SDWA also lays out a Treatment as State program, like the CWA.¹⁷² The threshold requirements for a tribe to be treated as a state for the purposes of administering and enforcing a UIC program under the SDWA are the same as the threshold requirements under the CWA.¹⁷³

IV

FRACKING REGULATORY EXEMPTIONS, THE FEDERAL TRUST RESPONSIBILITY, AND THE CONGRESSIONAL PLENARY POWER

Federal indigenous law is rife with inherent contradictions. The federal government has asserted nearly unlimited authority over tribes, has recognized that it must act in the tribes' best interests, and has proclaimed respect of tribal sovereignty that predated the founding of the United States.¹⁷⁴ To understand how these regulatory exemptions have failed tribes and harmed tribal waters, this section will situate the issue in the context of Congress's plenary power over tribes and the federal trust duty. Congress has the broad discretion to enact legislation and regulate matters pertaining to tribes and their reservations, and because of this power, these statutory exemptions for fracking activities cannot be eliminated without congressional action. Short of getting rid of the exemptions altogether and properly regulating fracking, federal agencies could adhere to their trust responsibilities by increasing water quality testing on reservations with abundant fracking activity, limiting permits to drill new wells, conducting studies of fracking chemicals for a better understanding of their effects on water quality and human health, and maintaining communication with tribes when they express concerns about damage to drinking water supplies from fracking operations.

V

CONGRESSIONAL PLENARY POWER OVER TRIBES

The Supreme Court has long recognized that Congress has "plenary power" to legislate regarding indigenous affairs.¹⁷⁵ This means that Congress can enact legislation pertaining to tribes nearly without

¹⁷² See *Tribes Approved for Treatment as a State (TAS)*, EPA, [hereinafter *Tribes Approved*], <https://www.epa.gov/tribal/tribes-approved-treatment-state-tas> [https://perma.cc/49VR-3TWW] (last visited Mar. 31, 2023).

¹⁷³ See *id.*

¹⁷⁴ Michalyn Steele, *Plenary Power, Political Questions, and Sovereignty in Indian Affairs*, 63 UCLA L. REV. 666, 675 (2016).

¹⁷⁵ *Id.* at 680.

question.¹⁷⁶ The courts are very deferential to the powers of Congress in this regard, and the plenary power doctrine has been recognized in case law and seems to be a settled principle.¹⁷⁷ This nearly unchecked power is clearly a “tool of oppression,” and the judiciary has played a role in promoting it.¹⁷⁸ The plenary power doctrine has been a source of considerable harmful legislation to tribes, including fracking exemptions.

The case of *Lone Wolf v. Hitchcock* is the high-water mark of the plenary power cases.¹⁷⁹ This case involved the Kiowa Nation’s claim that its treaty with the federal government was fraudulent because the government misrepresented what lands it was going to provide for the tribe.¹⁸⁰ The Supreme Court held that the tribes’ claims could not be reviewed by the judiciary because of Congress’s broad powers regarding tribal affairs, and “[a]s Congress possessed full power in the matter, the judiciary cannot question or inquire into the motives which prompted the enactment of this legislation.”¹⁸¹ The plenary power doctrine emanating from this case has endured to the present day, so Congress has the ability to legislate on matters pertaining to tribal affairs or matters affecting tribal interests.¹⁸²

Because of the nature of the plenary power, Congress was not obligated to consider tribal interests at all when enacting these regulatory exemptions for fracking operations. This broad, firmly rooted doctrine seems to eliminate all pathways to address these regulatory exemptions, but there are other federal Indian law principles that can address the problems associated with fracking exemptions.

A. The Federal Trust Responsibility

A central doctrine in federal Indian law is the federal trust responsibility. The trust responsibility is a common law principle that has evolved over time.¹⁸³ The federal trust responsibility generally

¹⁷⁶ *Id.*

¹⁷⁷ *Id.* at 682.

¹⁷⁸ *Id.*

¹⁷⁹ *Id.* at 681.

¹⁸⁰ *Lone Wolf v. Hitchcock*, 187 U.S. 553, 567 (1903).

¹⁸¹ *Id.* at 568.

¹⁸² Steele, *supra* note 174.

¹⁸³ Mary Christina Wood, *Protecting the Attributes of Native Sovereignty: A New Trust Paradigm for Federal Actions Affecting Tribal Lands and Resources*, 1995 UTAH L. REV. 109, 234 (1995).

stands for the idea that a trust relationship exists between the tribes and the federal government.¹⁸⁴ What follows is an explanation of the trust relationship that exists between tribes and the federal government and how the federal government has abandoned this duty by supporting the oil and natural gas industry through fracking exemptions.

The modern iteration of the federal trust duty owed to tribes is best understood in terms of a fiduciary duty.¹⁸⁵ The federal government is the trustee, and the tribes are the beneficiaries. Thus, the federal government has a duty to protect tribal property and tribal interests, but this fiduciary duty is heightened due to the historic power disparities between the federal government and tribes.¹⁸⁶ This trust duty also extends the trust duty to executive agencies, like the EPA.¹⁸⁷ Therefore, agencies must consider what is in the tribes' best interests, and these unique obligations owed to the tribes underpin the government's duty to administer environmental protection laws in a way that promotes tribal health and protects tribes' environments.¹⁸⁸ Because the federal government acts as a trustee, it has broad discretion to control natural resources on tribal lands.¹⁸⁹

In a line of cases beginning with *Cherokee Nation v. Georgia*, the Supreme Court laid the foundation of the federal trust relationship. The issue in *Cherokee Nation v. Georgia* was whether the Cherokee Nation could exclude non-tribal members on the grounds that the tribe was a foreign nation with the sovereign power to exclude people from entering its lands.¹⁹⁰ The Supreme Court held that tribes are "domestic dependent nations," meaning that tribes retain some attributes of sovereignty but remain "ward[s]" to the federal government.¹⁹¹ In *Worcester v. Georgia*, the Supreme Court held that tribes are under the protection of the federal government, and that this duty included the protection of tribal sovereignty and lands.¹⁹² This protection "does not imply the destruction of the protected."¹⁹³ The federal trust relationship was further defined by *United States v. Kagama*, where the Supreme

¹⁸⁴ Whitney-Williams & Hoffmann, *supra* note 5, at 475.

¹⁸⁵ *Id.*

¹⁸⁶ *Id.* at 473.

¹⁸⁷ *Id.* at 475; Nance v. Env't Prot. Agency, 645 F.2d 701, 711 (9th Cir. 1981) (stating that the federal trust responsibility applies to executive agencies).

¹⁸⁸ See Whitney-Williams & Hoffmann, *supra* note 5, at 474.

¹⁸⁹ Ludvig, *supra* note 163, at 735–36.

¹⁹⁰ *Cherokee Nation v. Georgia*, 30 U.S. 1, 43 (1831).

¹⁹¹ *Id.* at 17; see Whitney-Williams & Hoffmann, *supra* note 5, at 473.

¹⁹² *Worcester v. Georgia*, 31 U.S. 515, 552 (1832).

¹⁹³ *Id.*

Court held that Congress retained plenary powers over tribes, and because of the power imbalance between them, the federal government had a responsibility to protect tribes' best interests.¹⁹⁴

The federal trust responsibility is also firmly established in both modern case law and executive policy statements. Federal courts have held that the trust duty imparts a special duty to environmental agencies to regulate "in the best interests" of tribes.¹⁹⁵ According to these decisions, agencies like the EPA have to consider tribal interests when administering environmental laws in Indian country.¹⁹⁶ In *Seminole Nation v. United States*, the Supreme Court held that the federal trust responsibility is a "moral obligation[] of the highest responsibility and trust" that must be implemented by "the most exacting fiduciary standards."¹⁹⁷ In *Blue Legs v. United States Bureau of Indian Affairs*, the Eighth Circuit held that the Bureau of Indian Affairs had a trust duty under the RCRA to clean up hazardous dumping areas on the Oglala Sioux Nation reservation.¹⁹⁸ The court concluded by stating that the bureau, as an executive agency, had an obligation to clean up the hazardous sites because of the "general trust relationship between these agencies and the Tribe."¹⁹⁹

In recognition of this principle, the EPA has its own policy to act in the best interest of tribes. The policy is called "EPA Policy for the Administration of Environmental Programs on Indian Reservations."²⁰⁰ First adopted in 1983, it states that the EPA is to encourage Indian "self-government" and work with tribes on a "government-to-government" basis.²⁰¹ It also states that a key policy is to "give special consideration

¹⁹⁴ *United States v. Kagama*, 118 U.S. 375 (1886); Mary Christina Wood, *Indian Land and the Promise of Native Sovereignty: The Trust Doctrine Revisited*, 1994 UTAH L. REV. 1471, 1502 (1994).

¹⁹⁵ *Whitney-Williams & Hoffmann*, *supra* note 5, at 474; *Woods Petroleum Corp. v. Dep't of Interior*, 47 F.3d 1032, 1038 (10th Cir. 1995) ("[When] evaluating the Secretary's actions, we must keep in mind that the Secretary and his delegates act as the Indians' fiduciary and thus must represent the Indians' best interests."); *Burlington Res. Oil & Gas Co. v. Dep't of Interior*, 21 F. Supp. 2d 1, 5 (D.D.C. 1998) (stating that when the Secretary is faced with one or more "reasonable" choices, "he must choose the alternative that is in the best interests of the Indian tribe.").

¹⁹⁶ *Whitney-Williams & Hoffmann*, *supra* note 5, at 475.

¹⁹⁷ *Seminole Nation v. United States*, 316 U.S. 286, 297 (1942).

¹⁹⁸ *Blue Legs v. U.S. Bureau of Indian Affs.*, 867 F.2d 1094 (8th Cir. 1989).

¹⁹⁹ *Id.* at 1100. *See also* *Whitney-Williams & Hoffmann*, *supra* note 5, at 479.

²⁰⁰ EPA, EPA POLICY FOR THE ADMIN. OF ENV'T PROGRAMS ON INDIAN RSRVRS. (1984).

²⁰¹ *Id.*

to Tribal interests in making Agency policy, and to insure the close involvement of Tribal Governments in making decisions and managing environmental programs affecting reservation lands.”²⁰² This is essentially an acknowledgment of the EPA’s fiduciary role and tribes’ interest and inherent authority to regulate their environment. Ironically, despite this declaration, the EPA’s approach to regulating oil and gas production is not reflective of the agency’s fiduciary responsibility.

Instead of waiting for the next catastrophic spill event, the federal trust obligation imparts an *active* duty to protect tribal interests. An active duty would require federal agencies, including the EPA, to institute preventative measures and prioritize tribal interests over corporate interests. Fulfilling this active duty would require the EPA to increase testing on the effects of fracking on human health and on water supplies and to notify tribes of its studies or involve them in conducting studies. This is important for tribes to make informed decisions about entering contracts with oil and gas companies to operate on their lands. Additionally, agencies would be required to consult with tribes at every stage of the permitting process when oil and gas companies proposed an action. Even though fracking is not regulated under the CWA, SDWA, or RCRA, oil and gas companies must obtain drilling permits, and when an agency is considering granting a permit, an affected tribe’s input should be heavily considered.

VI

FRACKING REGULATORY EXEMPTIONS AND TRIBAL SOVEREIGNTY

Authority over natural resources, control over water quality, and regulation of water pollution is an integral aspect of sovereignty for all nations.²⁰³ The CWA and SDWA have programs for tribes to be treated “as states” for the purposes of carrying out the laws. However, the program is largely ineffective and not a proper recognition of tribal sovereignty, and the only means of fixing the exemptions in fracking regulation is on a sovereign-to-sovereign basis.

A. Treating “Tribes as States” Under the Clean Water Act and Safe Drinking Water Act

Both the CWA and SDWA have a program called Tribes Approved for Treatment as States (TAS), which purport to grant tribes the same

²⁰² *Id.*

²⁰³ See Owley, *supra* note 141, at 61–62.

administrative and enforcement approval as states, but in practice these programs have largely failed. On paper, the TAS program seems to be an acknowledgment of tribal sovereignty and regulatory authority over water quality. Unfortunately, the program has not been an effective means for tribes to exert regulatory authority over the fracking industry.

After the passage of the CWA, SDWA, RCRA, and other environmental laws, the federal government changed its approach to its relationship with tribes by adopting a policy of “self-determination.”²⁰⁴ In response to tribes’ efforts to exert more control over their natural resources, Congress has implemented a statutory framework for tribes to have a greater role in regulating activities that occur on their land and affect their environment. Under the CWA²⁰⁵ and SDWA,²⁰⁶ tribes can be granted regulatory authority and be treated “as states” for the purposes of administering the federal programs. To be granted this authority, tribes must meet four criteria: (1) tribes must be federally recognized, (2) tribes must have substantial governmental power, (3) the body of water must be located in the tribe’s reservation, and (4) tribes must be able to carry out the regulatory program.²⁰⁷ Tribes that have been granted this status clearly have the ability to regulate pollutants from entering their lands and waters the way states can,²⁰⁸ which includes the ability to set stricter water quality standards under both acts and approve or deny NPDES and UIC permits.²⁰⁹ However, once granted this TAS status, tribes still must obtain EPA approval of their regulatory programs.²¹⁰

Only eighty tribes have been granted TAS status under the CWA to set water quality standards, and only two tribes have been granted TAS

²⁰⁴ *Id.* at 76.

²⁰⁵ 33 U.S.C. § 1377 (2014) (the policy allowing tribes to be treated as states for the purposes of implementing the Clean Water Act).

²⁰⁶ 42 U.S.C. § 9626(a) (the policy allowing tribes to be treated as states for the purposes of implementing the Safe Drinking Water Act) (the criteria for tribes to be treated as states are listed in a separate regulation, 40 C.F.R. § 142.72).

²⁰⁷ *Tribal Assumption of Federal Laws - Treatment as a State (TAS)*, EPA, <https://www.epa.gov/tribal/tribal-assumption-federal-laws-treatment-state-tas> (Aug. 30, 2022) [<https://perma.cc/74R5-BA76>].

²⁰⁸ See Adam Creppelle, *The Reservation Water Crisis: American Indians and Third World Water Conditions*, 32 TUL. ENV’T L.J. 157, 167 (2019).

²⁰⁹ See discussion *supra* Sections III.B, II.C.

²¹⁰ Sibyl Diver, *Native Water Protection Flows Through Self-Determination: Understanding Tribal Water Quality Standards and “Treatment as a State,”* 163 J. COMTEMP. WATER RSCH. & EDUC. 6, 7 (2018).

status under the SDWA to regulate UIC class II wells.²¹¹ Even fewer tribes have EPA-approved programs.²¹² While these TAS provisions constitute an official grant of power from Congress, they have proven to be very ineffective.²¹³

On paper, the TAS system is consistent with federalist principles and the government's general approach to tribal self-determination,²¹⁴ but in practice the system is not consistent with tribal sovereignty. A gap exists between the vision of how the TAS program would work and the reality of using the program as a means of promoting tribal sovereignty.²¹⁵ Few tribes have been granted this status or have EPA-approved programs, and the prerequisite TAS requirements automatically exclude many tribes from this opportunity.²¹⁶ The tribes that have not been granted TAS status under these federal laws are cut out of the regulatory process. Tribes that cannot meet the TAS requirements have to rely on the EPA to regulate, but this usually results in lax monitoring and enforcement.²¹⁷

The recognition of "tribes as states" is contradictory. While the TAS purports to recognize tribes' inherent power to regulate for the health and welfare of its people and its lands by treating a tribe as a state, states and tribes do not have to go through the same process for obtaining EPA-approved programs under the CWA and SDWA. Federal delegation to states under these laws is clearly recognition of the sovereign interest in water quality protection,²¹⁸ but it seems that the TAS program does not actually place tribes and states on equal footing as co-sovereigns. Under the CWA and SDWA, it is assumed that states are capable of carrying out the federal program, but tribes have to meet the four prerequisite federal benchmarks.²¹⁹ The TAS approach ostensibly is a collaborative management framework, but it places too much restriction on tribal self-determination and self-governance and gives the EPA too much power to determine which tribes are capable of exercising their inherent tribal authority.²²⁰ The

²¹¹ *Tribes Approved*, *supra* note 172.

²¹² Crepelle, *supra* note 208, at 167.

²¹³ Diver, *supra* note 210, at 7.

²¹⁴ Owley, *supra* note 141, at 76.

²¹⁵ Diver, *supra* note 210, at 7.

²¹⁶ Ludvig, *supra* note 163, at 748.

²¹⁷ *Id.*; *see supra* Part II.

²¹⁸ *See supra* Section III.B.

²¹⁹ Whitney-Williams & Hoffmann, *supra* note 5, at 480.

²²⁰ Diver, *supra* note 210, at 25.

TAS program is a form of “contingent . . . tribal self-determination.”²²¹ Under the program, the EPA maintains superior decision-making power through approval processes regarding tribal eligibility and delegated management programs under the CWA and SDWA.²²² Water is too vital of a resource to not include tribes in the decision-making process, regardless of their status under these environmental protection laws.

Most federal environmental laws, like the CWA, SDWA, and RCRA, operate under a system of cooperative federalism with states, and the relationship between the federal government and tribes should mirror the federal-state relationship for the purposes of regulating under these laws. Outside reservations, states can regulate the oil and natural gas industry more stringently than the EPA does.²²³ States have the power to set water quality standards that are more stringent than those of the EPA, require that oil and gas producers disclose chemicals found in produced water, and ban fracking altogether from state lands, but tribes do not have this range of options or regulatory control if they do not qualify “as states” for the purpose of regulation.²²⁴ In the absence of effective federal regulation of fracking fluids and promotion of the fracking industry, many states have had to take responsibility for this regulation.²²⁵ The EPA and other federal agencies need to include tribes, no matter their status, in the regulatory process by delegating more authority for tribes to exclude oil and natural gas producers from releasing produced waters on their lands.

B. Tribal Sovereignty

A key legal tool for addressing the environmental harms resulting from fracking occurring on tribal lands is the recognition and respect of inherent tribal sovereignty to regulate non-tribal corporate entities. The underlying principle of the relationship between tribes and the federal government is the concept of dual sovereignty, meaning that the federal government and tribal governments operate as co-sovereigns. Although in federal Indian law tribes operate under the federal government’s primary authority,²²⁶ tribes are nonetheless sovereign

²²¹ *Id.*

²²² *Id.*

²²³ *See supra* Part III.

²²⁴ *Id.*

²²⁵ Ludvig, *supra* note 163, at 740.

²²⁶ *See supra* Part IV.

entities with significant legal authority over their lands and their people.²²⁷ The argument that tribes have the inherent sovereign authority to protect their water sources is consistent with tribal regulatory jurisprudence, and it is not a stretch to argue that tribes have the inherent tribal sovereignty to regulate fracking operations on their lands, regardless of the exemptions for the fracking industry.

Issues often arise over tribes' ability to regulate the activities of non-tribal entities on non-tribal fee land located within a reservation boundary.²²⁸ Tribes' regulatory jurisdiction over non-tribal entities on non-tribal land located within the reservation is governed by the *Montana v. United States* case and its progeny.²²⁹ Although tribal regulatory authority has consistently been abrogated since the Supreme Court decided in *Montana v. United States*, there remains legal justification for tribal regulation of water quality under federal Indian law jurisprudence.²³⁰ *Montana* held that, generally, tribes cannot regulate non-Indian entities for activities on non-Indian fee land located within Indian Country.²³¹ However, *Montana* provides two important exemptions for the purposes of tribal regulation. The first exception allows tribes to "regulate, through taxation, licensing, or other means, the activities of nonmembers who enter consensual relationships with the tribe or its members, through commercial dealing, contracts, leases, or other arrangements."²³² The second exception, the "health or welfare" exception,²³³ is applicable in cases where tribes want to regulate polluters to prevent harm to their lands and waters. In situations where tribal health and welfare are affected by an activity, the tribe can exercise regulatory jurisdiction over its conduct. For the purposes of the second *Montana* exception, "water quality management serves the purposes of protecting public health and safety."²³⁴

²²⁷ Owley, *supra* note 141, at 61.

²²⁸ See TANA FITZPATRICK, CONG. RSCH. SERV., TRIBAL LANDS: AN OVERVIEW 1–2 (2021) (non-tribal fee lands are "lands previously conveyed out of tribal ownership," which can be owned by non-tribal members).

²²⁹ *Montana v. United States*, 450 U.S. 544 (1981).

²³⁰ *Id.*

²³¹ *Id.*

²³² *Id.* at 565.

²³³ *Id.* at 566 (the second *Montana* exception that applies to activities that "threaten[] [to have a] direct effect on the political integrity, the economic security, or the health or welfare of the tribe").

²³⁴ Whitney-Williams & Hoffmann, *supra* note 5, at 486–87.

The second exception has been reaffirmed in several cases, such as the Ninth Circuit case *FMC Corp. v. Shoshone-Bannock Tribes*.²³⁵ In this case, the Ninth Circuit held that the Shoshone-Bannock Tribes could regulate a corporation for its conduct on the corporation's fee lands located in the reservation because storing hazardous waste within the reservation boundary fell under the second *Montana* exception. In *Colville Confederated Tribes v. Walton*, the Ninth Circuit held that the tribe's reservation of water to protect fisheries was a valid exercise of its civil regulatory jurisdiction.²³⁶ The court cited the second *Montana* exception for its proposition that tribes retain "inherent power to exercise civil authority over the conduct of non-Indians on fee lands within its reservation when that conduct threatens or has some direct effect on the health and welfare of the tribe."²³⁷ Similarly, in *City of Albuquerque v. Browner*, the Tenth Circuit recognized tribes' sovereign interest and inherent tribal authority to protect their water sources.²³⁸ In this case, the city of Albuquerque challenged the Isleta Pueblo's stringent water quality standards that were approved by the EPA.²³⁹ The Tenth Circuit rejected the city's argument, holding that "the EPA's construction of the 1987 amendment to the Clean Water Act—that tribes may establish water quality standards that are more stringent than those imposed by the federal government—is permissible because it is in accord with powers inherent in Indian tribal sovereignty."²⁴⁰

The *Montana* exceptions and the cases that reaffirm its holding stand for the idea that a tribe may exercise civil regulatory jurisdiction over corporations operating in Indian country based on the tribe's inherent sovereign powers.²⁴¹ *Montana* and its progeny recognize that tribes

²³⁵ Nick Martin, *Indian Country Refuses to Be Corporate America's Dumping Ground*, NEW REPUBLIC (Jan. 12, 2021), <https://newrepublic.com/article/160874/indian-country-refuses-corporate-americas-dumping-ground> [<https://perma.cc/J5YT-G6JD>]; *FMC Corp. v. Shoshone-Bannock Tribes*, 942 F.3d 916 (9th Cir. 2019).

²³⁶ *Colville Confederated Tribes v. Walton*, 647 F.2d 42, 42 (9th Cir. 1981).

²³⁷ *Id.* at 52. See also Paula Goodman Maccabee, *Tribal Authority to Protect Water Resources and Reserved Rights Under Clean Water Act Section 401*, 41 WM. MITCHELL L. REV. 618, 648 (2015).

²³⁸ *City of Albuquerque v. Browner*, 97 F.3d 415, 418 (10th Cir. 1996) (four elements of tribal sovereignty are "water rights," "government jurisdiction," and "land and mineral rights").

²³⁹ *Id.* at 421.

²⁴⁰ *Id.* at 423.

²⁴¹ Stephen V. Quesenberry et al., *Tribal Strategies for Protecting and Preserving Groundwater*, 41 WM. MITCHELL L. REV. 431, 467 (2015).

have the inherent sovereign authority to regulate activities that occur within reservation boundaries that have a serious impact on the health and welfare of tribal members. Produced water from the fracking process that is both discharged directly onto land and into underground injection wells clearly fits within the second *Montana* exception.

The problem with this approach is that it cannot overcome the Congressional plenary power doctrine.²⁴² Congress has decided to allow fracking to go unregulated on federal and tribal lands. However, the answer is not necessarily grounded in federal oversight of the fracking industry—while it is important that the federal government eliminate these exemptions and begin to regulate fracking, tribes must be involved in the regulation process as a sovereign. Any recommendation to confront these regulatory exemptions must respect inherent tribal authority and include a meaningful role for tribes to regulate fracking.²⁴³ One approach could be to have a statutory recognition of inherent tribal authority over these regulatory issues, i.e., state that all tribes, no matter their current capabilities, can implicitly regulate or exclude produced water from affecting their lands. An explicit statutory recognition would bypass any uncertainty regarding tribal authority to regulate the fracking industry. Additionally, the sovereign-to-sovereign pathway would require that tribes are involved in every step of the legislative and regulatory process.

CONCLUSION

Regulatory exemptions located in federal laws governing water resources allow toxic pollutants to flow onto tribal lands and through drinking water supplies. Short of Congress eliminating these exemptions altogether, any solution for tribes to prevent toxic produced water from polluting their waters requires proper recognition of tribal sovereignty. The TAS program built into the CWA and SDWA, while better than no recognition, is not a full or satisfying acknowledgment of tribal sovereignty, even though it is well-established in the case law that fracking activity occurring on tribal land has a significantly negative effect on the tribe's water or tribal members' health. To address the harmful effects fracking has to tribal resources, the federal government must reevaluate its relationship with tribes, especially when it comes to oil and natural gas production on tribal lands. Thus far, the government has largely been unwilling to study, regulate, or

²⁴² *Supra* Section IV.B.

²⁴³ Whitney-Williams & Hoffmann, *supra* note 5, at 484.

properly inform tribes about the harmful effects of fracking. The federal government should incorporate the tribal perspective and tribal sovereignty into federal policy by consulting with tribal governments on issues that substantially affect tribal resources.²⁴⁴

²⁴⁴ *Id.*

