

Understanding “Produced Water” for what it is: Waste, Toxic Waste

What is Produced “Water”? It’s not water, it’s toxic waste.

“Produced water” also known as wastewater resulting from hydraulic fracturing that may contain radiation¹, carcinogens, hydrocarbons, and other toxic substances may be used for “road construction maintenance, roadway ice or dust control, or other construction or in the application of treated produced water to land, for activities unrelated to the exploration, drilling, production, treatment and refinement of oil or gas.”² As reports across the U.S. have found, this “water” is actually a waste byproduct of the fracking process -- a toxic cocktail of radioactive materials, heavy metals, proprietary fracking chemicals, and other contaminants that are known to be carcinogenic and dangerous to human health and the environment.

Why did the Oil and Gas industry write this bill?

Marathon Oil wrote this bill for the Oil and Gas Industry (“O&G”). The constant flow of freshwater needed for fracking is ever harder to come by in New Mexico’s parched region, which lies in the Chihuahuan Desert and receives only about 13 inches of precipitation a year. Drilling a single well in the Permian Basin required more than 11 million gallons of water per day in 2016, enough to fill 17 Olympic size swimming pools, up from 1.3 million gallons in 2011— a 770% increase.³ As the easier-to-reach oil deposits have been tapped out, companies have had to drill ever-longer wells — and the longer the well, the more water needed to force out the hydrocarbons.

For every barrel of oil extracted four barrels of wastewater are created! In 2019, Oil and Gas Companies in the Permian Basin extracted an estimated **300 million barrels of oil, and 1,259,341,048 barrels (>50b gallons) of produced water**,⁴ according to the New Mexico Environment Department. For scale, this amount of water could cover over more than 8,000 football fields with a foot of water, each and every day.⁵ Companies dump the contaminated wastewater into disposal wells or into illegal “abandoned” areas.

Overall, the Oil Conservation Division’s rules were designed to alleviate these toxic waste by-product pressures on the oil and gas industry. If the state is genuinely concerned with limited quantities of fresh water the answer is simple: stop using fresh water for fracking. **Our precious water is for drinking and agriculture, not poisoning. Water is life.** Rather than help New

¹ “America’s Radioactive Secret,” *Rolling Stone*, 1/21/2020, <https://www.rollingstone.com/politics/politics-features/oil-gas-fracking-radioactive-investigation-937389/>; <https://www.theguardian.com/environment/2020/oct/13/airborne-radioactivity-increases-downwind-of-fracking-study-finds> (The radioactivity of airborne particles increases significantly downwind of fracking sites in the US, a study has found. The Harvard scientists said the radioactivity rose by 40% compared with the background level in the most affected sites and this could damage the health of people living in nearby communities.)

² HB 546, “Fluid Oil & Gas Waste Act,” sponsored by Representatives Nathan P. Small, Brian Egolf, and Rod Montoya, §11 P. Signed into law by Governor Michelle Lujan Grisham.

³ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6093634/>

⁴ Bill Brancard, General Counsel, Energy, Minerals and Natural Resource Department, 9/3/2020, presentation before the Water & Natural Resources Committee, NM Legislature.

⁵ https://www.env.nm.gov/new-mexico-produced-water/wp-content/uploads/sites/16/2019/11/Produced-Water-Public-Meeting-Presentation_ENGLISH_FINAL-191114.pdf

Mexico transition away from reliance on oil and gas, and the use of precious fresh water for drilling, rules of the NM Environment Department (“NMED”) and its agency, the Oil Conservation Division (“OCD”) create a new market for the sale of waste, a new commodity for the O&G industry to sell, further threatening our health and the environment.

Regulations Must Respect the Science

It is incumbent upon the OCD to take a “hard look” at the existing science that warns against allowing the use of wastewater from oil and gas wells to be used *at all* outside the oil fields. For instance, spreading fracked wastewater, which contains high levels of the carcinogenic element radium, inorganic salts, and oil and gas hydrocarbons, on unpaved roads to control dust is a threat to human health and the environment. Lab experiments have demonstrated that nearly all of the metals from these wastewaters leach from roads after rain events, likely reaching ground and surface water. In Pennsylvania, from 2008 to 2014, spreading O&G wastewaters released over four times more radium, a known carcinogen, than O&G wastewater treatment facilities and 200 times more radium than spill events. **Consequently, Pennsylvania and four other states have banned road spreading of wastewater from hydraulically fractured wells.**

The State of New Mexico and the OCD are already failing New Mexicans

Governmental agencies have already failed to protect human health and the environment from the dangers of the state’s oil and gas addiction. While the O&G companies that own the fracking wells are responsible for the accidents and poor management that lead to regular and repeated spills and releases of toxic waste, it is undeniable that New Mexico has failed to hold industry accountable and provide proper oversight and enforcement of existing rules.⁶ **The number of well inspections has decreased by 28% between the administrations of Governor Martinez (42,880 inspections in 2018) and Governor Lujan Grisham (31,043 inspections in 2019).**⁷ Indeed many of these companies are repeat violators of basic environmental regulations and are allowed to continue to operate. The division issued just 1,620 violations in FY19, **78 percent of the number issued in FY18**, despite significant increases in oil and gas production this year.⁸ The OCD attributes fewer inspections and a lack of compliance with permits and regulations to compliance officer vacancies. However, somehow OCD continues to process most approved drilling permits within 10 business days.

From January 1, 2019, the day Governor Lujan Grisham took office, until September 14, 2020:

O&G	Number of Incidents	OCD web cite
WPX	91	https://wwwapps.emnrd.state.nm.us/ocd/ocdpermitting/Data/Spills/SpillSearchResults.aspx?IncidentIdSearchClause=BeginsWith&Severity=All&Ogrid_Name=WPX&OperatorSearchCla

⁶ “Well inspections were down in FY 2019 due to high vacancy rates in OCD field offices.” Energy Minerals Natural Resource Department annual report, 2019, http://www.emnrd.state.nm.us/documents/EMNRD_AnnualReport_2019_nm.pdf, p. 63. “In calendar year 2019 the OCD inspected 27,756 oil and gas wells and facilities out of 65,062 total facilities.” p. 60. “Timely approval of [application] permits [to drill] in conjunctions with the OCD’s inspection program ensures that the oil an gas industry can thrive [.]” pp. 60-61. In 2016 a total of 49,624 were inspected; in 2017 a total of 37,928 were inspected; in 2018 a total of 42,880 were inspected; and in 2019 a total of 31,043 were inspected. p. 63.

⁷ *Id.*

⁸ https://www.nmlegis.gov/Entity/LFC/Documents/Agency_Report_Cards/521%20-%20EMNRD%20FY20%20Q1.pdf

		use=Contains&FacilityIdSearchClause=BeginsWith&FacilityNameSearchClause=BeginsWith&WellNameSearchClause=BeginsWith&County=Eddy&Section=00s
Oxy USA	164	https://wwwapps.emnrd.state.nm.us/ocd/ocdpermitting/Data/Spills/SpillSearchResults.aspx?IncidentIdSearchClause=BeginsWith&Severity=All&Ogrid_Name=Oxy%20USA&OperatorSearchClause=Contains&FacilityIdSearchClause=BeginsWith&FacilityNameSearchClause=BeginsWith&WellNameSearchClause=BeginsWith&Incident_DateRangeStart=01/01/2019&Incident_DateRangeEnd=03/23/2020&Section=00
Devon Energy	185	https://wwwapps.emnrd.state.nm.us/ocd/ocdpermitting/Data/Spills/SpillSearchResults.aspx?IncidentIdSearchClause=BeginsWith&Severity=All&Ogrid_Name=Devon%20Energy&OperatorSearchClause=Contains&FacilityIdSearchClause=BeginsWith&FacilityNameSearchClause=BeginsWith&WellNameSearchClause=BeginsWith&Incident_DateRangeStart=01/01/2019&Incident_DateRangeEnd=03/23/2020&Section=00
Chevron USA	63	https://wwwapps.emnrd.state.nm.us/ocd/ocdpermitting/Data/Spills/SpillSearchResults.aspx?IncidentIdSearchClause=BeginsWith&Severity=All&Ogrid_Name=Chevron&OperatorSearchClause=Contains&FacilityIdSearchClause=BeginsWith&FacilityNameSearchClause=BeginsWith&WellNameSearchClause=BeginsWith&Incident_DateRangeStart=01/01/2019&Incident_DateRangeEnd=03/23/2020&Section=00
Marathon Oil	60	https://wwwapps.emnrd.state.nm.us/ocd/ocdpermitting/Data/Spills/SpillSearchResults.aspx?IncidentIdSearchClause=BeginsWith&Severity=All&Ogrid_Name=Marathon&OperatorSearchClause=BeginsWith&FacilityIdSearchClause=BeginsWith&FacilityNameSearchClause=BeginsWith&WellNameSearchClause=BeginsWith&Incident_DateRangeStart=01/01/2019&Incident_DateRangeEnd=03/23/2020&Section=00
XTO Energy	287	https://wwwapps.emnrd.state.nm.us/ocd/ocdpermitting/Data/Spills/SpillSearchResults.aspx?IncidentIdSearchClause=BeginsWith&Severity=All&Ogrid_Name=XTO%20Energy&OperatorSearchClause=BeginsWith&FacilityIdSearchClause=BeginsWith&FacilityNameSearchClause=BeginsWith&WellNameSearchClause=BeginsWith&Incident_DateRangeStart=01/01/2019&Incident_DateRangeEnd=03/23/2020&Section=00
ConocoPhillips	58	https://wwwapps.emnrd.state.nm.us/ocd/ocdpermitting/Data/Spills/SpillSearchResults.aspx?IncidentIdSearchClause=BeginsWith&Severity=All&Ogrid_Name=ConocoPhillips&OperatorSearchClause=Contains&FacilityIdSearchClause=BeginsWith&FacilityNameSearchClause=BeginsWith&WellNameSearchClause=BeginsWith&Incident_DateRangeStart=01/01/2019&Incident_DateRangeEnd=03/23/2020&Section=00

Repeat O&G violators and NM complicity

Indeed many of the O&G companies are repeat violators of basic environmental regulations and are allowed to continue to operate. For instance, shortly after the fracked waste water explosion from a flowline on January 21, 2020 that shot up 25ft. in the air, fanning across the road and showering human beings, animals, land and homes,⁹ WPX illegally dumped at least 13 bbls of produced fracked waste water on land causing a saturation depth approximately 3 inches; Incident ID NRM2006956859. Similar to past violations, WPX received no punishment for their violations, are allowed to continue to operate, leading to the occurrence of major incidents. WPX and the other O&G industries' deplorable record of discharges make the risk of damage even more likely. NM governmental entities charged with the responsibility of protecting health, environment and water resources do not engender confidence in its ability to 1) prevent incidents from occurring; 2) notify impacted landowners and/or community members of the damage caused; and 3) remediate the problem. This ongoing environmental disaster is preventable and foreseeable, as in, the likelihood of harm is knowable.

Given the current shameful history of widespread contamination by the O&G industry and the careless and/or willful actions and/or inactions and the failures of NM governmental agencies to adequately oversee, regulate, penalize, impose violations to address and prevent spills and releases of toxic waste *already occurring on a regular basis* in the O&G fields, it is a violation

⁹ <https://truthout.org/articles/fracking-company-has-made-it-rain-toxic-water-upon-new-mexico-without-penalty/> and <https://nmpoliticalreport.com/2020/08/19/derelection-of-duty-1-6-million-gallons-of-produced-water-spilled-so-far-in-2020/>

of the New Mexico Constitution, our laws, and our scientific, health, moral and social standards of decency to allow this continue in our name.

What needs to be done:

- Create a comprehensive approach to oil and gas regulation in the state of New Mexico - from permitting to extraction to cleanup and remediation. Right now we have multiple agencies developing rules and regulations with holes and contradictions throughout what appears to be a scattershot approach. This makes accountability very difficult and leads to loopholes exploited by industry.
- Amend the Produced Water Act to comport with available science about the health and environmental risks of produced water and to explicitly prohibit the use of liquid fracking waste off of the well pads.
- Demand that Methane draft rules close up the exemption for low-producing oil and gas sites (a.k.a. stripper wells), as well as all wells whose emissions potential for volatile organic compounds (Methane, Ethane, and Propane) is less than 15 tons per year. Because with these exemptions, 95% of all gas oil and gas wells in New Mexico would be exempt.
- Adopt the polluter pays approach, where stringent standards are developed AND enforced. There need to be ramifications for spills and the state needs to use its power by withholding permits and revoking leases for repeat offenders.
- Industry should be expected to cover the full cost of environmental clean-up, at no cost to the taxpayer and bonding rates must be raised to do so. Once bonding regulations are established, require all wells to be fully bonded before any new permits are issued.
- Oversight is key - rules and regulations are meaningless when there is no oversight and no enforcement.
- Take a serious look at the influence of the oil and gas lobby on policy and rule-development. Industry executives should not be writing the laws that purport to protect human and environmental health and our precious water resources.
- Establish regulatory standards for the following contaminants commonly found in fracked waste: Ethyl benzene, Toulene, Xylenes, Methylene Chloride, Formaldehyde, Polycyclic Aromatic Hydrocarbons, Radon and other volatile organic compounds based on science.
- Establish regulatory standards for radiation poisoning and monitoring and enforcement in the O& G industry.
- Increase Monitoring and Actual Enforcement of oil and gas companies, especially those who repeatedly offend and violate regulations, and to increase penalties for repeat contamination offenses, including the threat of disallowing *any* further well permits.
- The suspension of well permits until there are enough inspectors and efficient and effective inspections.

Thank you for engaging on this critically important issue of oil and gas development in our state. From the economic issues (bonding, royalty rates, abandoned wells left to taxpayers for cleanup, and up to \$43 million in lost revenue annually due to methane leaks), to the egregious and relentless spills and discharges of waste that are poisoning New Mexico's land, water, and air, the oil and gas industry has a lot to answer for. We need YOU to advocate for the public interest and hold industry accountable.

Visit NewEnergyEconomy.org for more information and ways you can be involved.