BEFORE THE STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION COMMISSION

IN THE MATTER OF PROPOSED AMENDMENT TO THE COMMISSION'S RULES TO ADDRESS CHEMICAL DISCLOSURE AND THE USE OF PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES AND IN OIL AND GAS EXTRACTION, 19.15.2, 19.15.7, 19.15.14, 19.15.16 AND 19.15.25 NMAC

Petitioner. **CASE NO. 23580**

JOINT POST-HEARING CLOSING BRIEF FOR ADOPTION OF PROPOSED RULE AMENDMENTS ON BEHALF OF WILDEARTH GUARDIANS AND NEW ENERGY ECONOMY

I. Introduction

This rulemaking proceeding concerns two related issues: The first is whether New Mexico's oil and gas producers should be required to cease injecting highly toxic, carcinogenic, environmentally damaging "forever" chemicals in their downhole operations, which even they concede aren't necessary, along with how perfluoroalkyl and polyfluoroalkyl substances (PFAS) should be defined. The second issue is whether oil and gas operators should be required to publicly disclose the chemicals they are injecting into the ground and introducing into the environment. Both issues fall within this Commission's jurisdiction.

The evidence in this proceeding unequivocally establishes that the Commission must adopt the proposed rule to protect public health and the environment. The evidence shows that adoption of the proposed rule would do no harm to the industry and is critical to the public's safety and interests. In fact, when asked by Commissioner Dr. Ampomah whether a PFAS ban

would impact NMOGA, NMOGA witness Dr. Richardson responded, "I don't think it would have any impact at all, to be honest."[1] This NMOGA admission underscores the feasibility of these regulations and dispels industry fear-mongering tactics. Halting the use of PFAS and requiring public disclosure of all the chemicals used by oil and gas operators in all downhole operations are common-sense requirements. Neither are controversial, especially when other states already require companies to disclose all chemicals to the public.

In this post hearing closing brief, WildEarth Guardians and New Energy Economy, together "Joint Proponents" (a) underscore the existing authorities and duties of the Oil Conservation Commission ("Commission" or "OCC") and Division ("OCD") to promulgate the proposed rule,[2] (b) urge the adoption of a scientifically sound and legally consistent definition of PFAS,[3] (c) advocate for full chemical disclosure in oil and gas operations to safeguard public

[1] Richardson, Tr. 11/15/2024, 291:21-23.
[2] Powell, Tr. 11/14/2024, Powell 124–137.
[3] WG Ex. 8 (compiling statutory definitions of "PFAS"); NEE Exhibit B, Rebuttal Technical Testimony of Dr. Kristen Hansen, at 1. ("the definition suggested by WEG is the definition that has been adopted in statute in 23 states.") *See also*, at 3. ("Similarly, Congress has often adopted the same definition of PFAS, for example in enacting the National Defense Authorization Act in 2021, 2022 and 2023.) *See e.g.*, the NDAA for FY2022, Public Law 117-81 (passed the Senate by a vote of 88-11 & House by 363-70), §345(f)(4)("The term 'perfluoroalkyl or polyfluoroalkyl substance' means any man-made chemical with at least one fully fluorinated carbon atom."); The NDAA for FY2021, Public Law 116-283 (passed the Senate by a vote of 81-13 & House by 322-87) § 335(e)(2)("The term 'PFAS' means a perfluoroalkyl or polyfluoroalkyl substance with at least one fully fluorinated carbon atom, including the chemical GenX."); The NDAA for FY2020, Public Law 116-92 (passed the Senate by a vote of 86-8 and House by 377-48) §332(c)(3)("The term ''PFAS'' means perfluoroalkyl and polyfluoroalkyl substances that are man-made chemicals with at least one fully fluorinated carbon atom."). This definition has been used in state and federal legislation since 2018. (State of Washington Department of Ecology. (2021). Interim Chemical Action Plan for Per- and Polyfluorinated Alkyl Substances. https://apps.ecology.wa.gov/publications/documents/1804005.pdf, at 1.) *Additionally see e.g.*, proposed HB 222, 57th legislature, at 5, Section 1, U, defining " 'per- or polyfluoroalkyl substance' means a substance in a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom"; HB 212, 57th legislature, at 5, Section 1, S, defining "'per- or poly-fluoroalkyl substance' means a substance in a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom"; HB 137 (proposed Committee sub .230329.4), 57th legislature, at 2, Section 2, B, "'per- or polyfluoroalkyl substance' means a substance in a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom."

health and the environment, and (d) advocate for equitable access to critical chemical safety data, which the public deserves.

II. Legal Authority and Standard for Rule Adoption

The Commission has the legal authority to adopt the proposed rule and there is overwhelming evidence in the record that provides the Commission with rationale to adopt the proposed rule in this proceeding.

A. The Commission has statutory authority to adopt the proposed rule.

The Commission and the Oil Conservation Division (OCD) have the statutory authority to adopt the proposed rule. Pursuant to NMSA 1978 §§ 70-13-3[4], 70-2-12(B) (7)[5], (B) (15),[6] (B) (21)[7], and (B) (22),[8] the Commission has rulemaking authority to regulate produced water and nondomestic waste for the protection of the environment and public health. This authority includes adopting rules to control what constituents can be added to produced water and nondomestic wastes, which allows the Commission to prohibit PFAS and undisclosed chemicals.

Because the proposed rule presents industry with a choice of either disclosing the identity of chemicals it uses in New Mexico, or withholding disclosure and not using those undisclosed

[4] "It is the jurisdiction of: A. the oil conservation division of the energy, minerals and natural resources department to regulate produced water as provided in the Oil and Gas Act [Chapter 70, Article 2 NMSA 1978]."

[5] Providing OCC and OCD power to make rules to "to require wells to be drilled, operated and produced in such manner as to prevent injury to neighboring leases or properties[.]"

[6] Providing OCC and OCD power to make rules to "to regulate the disposition, handling, transport, storage, recycling, treatment and disposal of produced water during, or for reuse in, the exploration, drilling, production, treatment or refinement of oil or gas, including disposal by injection pursuant to authority delegated under the federal Safe Drinking Water Act, in a manner that protects public health, the environment and fresh water resources[.]"

[7] Providing OCC and OCD power to make rules to "to regulate the disposition of nondomestic wastes resulting from the exploration, development, production or storage of crude oil or natural gas to protect public health and the environment[.]"

[8] Providing OCC and OCD power to make rules to "to regulate the disposition of nondomestic wastes resulting from the oil field service industry, the transportation of crude oil or natural gas, the treatment of natural gas or the refinement of crude oil to protect public health and the environment[.]"

chemicals, the proposed rule does not ask the OCD to exceed its authority and require disclosure from chemical manufacturers.

B. The proposed rule does not violate the Uniform Trade Secrets Act.

The proposed rule also does not require the disclosure of trade secrets. This is because under the Uniform Trade Secrets Act ("UTSA"), a trade secret must be "the subject of efforts…to maintain its secrecy."[9] Voluntarily disclosed information is not subject to efforts to maintain secrecy, and therefore, is not a trade secret under the statutory definition.

Additionally, the UTSA only provides a cause of action to a trade secret holder against someone alleged to have misappropriated that trade secret.[10] In order to prevail, a trade secret holder would have to prove both 1) information they seek to protect fits the statutory definition of a trade secret, *and* 2) that information was misappropriated.[11] Because OCD will not possess any trade secret information under this proposed rule, OCD will not assume any risk of misappropriation liability when sharing disclosures.

C. **Regulating waste disposition includes all constituents to be disposed.**

The New Mexico Oil and Gas Association's ("NMOGA") assertions that the Commission is without legal authority and responsibility to regulate produced water and nondomestic waste is

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[9] NMSA § 1978 57-3A-2(D)(2) (Under the Uniform Trade Secrets Act, trade secrets must be "the subject of efforts that are reasonable under the circumstances to maintain its secrecy.")

[10] *See* NMSA 1978 § 57-3A-3 (providing for injunctive relief for an actual or threatened misappropriation of a trade secret) and § 1978 57-3A-4 (providing for damages for misappropriation of a trade secret).

[11] *See* NMSA § 1978 57-3A-(2)(B)(2) (Under the Uniform Trade Secrets Act, "misappropriation" means (1)acquisition of a trade secret of another by a person who knows or has reason to know that the trade secret was acquired by improper means; or
(2)disclosure of use of a trade secret of another without express or implied consent by a person who:
(a) used improper means to acquire knowledge of the trade secret; or
(b) at the time of disclosure or use, knew or had reason to know that his knowledge of the trade secret was: 1) derived from or through a person who had utilized improper means to acquire it; 2) acquired under circumstances giving rise to a duty to maintain its secrecy or limit its use; or 3) derived from or through a person who owed a duty to the person seeking relief to maintain its secrecy or limit its use; or
(c) before a material change of his position, knew or had reason to know that it was a trade secret and that knowledge of it had been acquired by accident or mistake[.]")

without basis. OCD witness Brandon Powell agreed that OCD and the Commission have broad powers to regulate produced water on the oilfield.[12] Mr. Powell explained that OCD enforces various Commission rules related to produced water, including the Produced Water Recycling Rule and the Spills Rule.[13] Mr. Powell also agreed that the Commission and OCD have authority to regulate wells to protect injury to neighboring leases and property.[14] Mr. Powell further explained that OCD enforces Commission rules promulgated to regulate nondomestic wastes on the oilfield.[15] When asked by Commissioner Bloom whether OCD can specifically regulate PFAS in produced water, Mr. Powell stated that the Commission has that authority.[16] If the Commission can regulate PFAS in produced water, then it also has the authority to regulate other constituents, including undisclosed chemicals.

Proper regulation of produced water and nondomestic wastes includes prohibiting constituents added to these wastes to ensure the constituents are not then disposed of. In other words, the power to regulate what constituents might be added to produced water and nondomestic waste is inherent in the power to regulate the disposition of these wastes. Likewise, in order to enforce a ban on a particular constituent, OCD must know what constituents are being added in downhole operations that produce waste. Chemical disclosure is needed to do this.

The evidence is overwhelming, and the legal authority is clear: the Commission has the legal authority to regulate PFAS and other chemicals in oil and gas operations[17]. As several witnesses explained, when an activity raises threats of harm to human health or the environment,

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[12] Powell, Tr. 11/14/2024 124:8-11.
[13] Powell, Tr. 11/14/2024 126:12-19.
[14] Powell, Tr. 11/14/2024 125:3-14.
[15] Powell, Tr. 11/14/2024 129:18-25; 130:1-5.
[16] Powell, Tr. 11/14/2024 241:2-4 (“Do you believe that the OCC can regulate PFAS and produced water?” THE WITNESS: “We do.”)
[17] NMSA 1978 §§ 70-2-12(B) (7), (B)(15), (B)(21), and (B)(22); Powell, Tr. 11/14/2024, Powell, at 124-127.

precautionary measures should be taken even if some cause-and-effect relationships are not yet fully established scientifically.[18] By adopting the proposed definition of PFAS, mandating full chemical disclosure, and upholding the precautionary principle, the Commission will take a critical step in safeguarding New Mexico's public health and environment for future generations.

D. To promulgate a new rule the Commission must enter an order providing reasons for adoption.

The Commission can adopt new rules only after a hearing.[19] When adopting a new rule the Commission "shall issue a written order adopting or refusing to adopt the proposed rule change, or adopting the proposed rule change in part" and the order "shall include [] the reasons for the action taken."[20] The Court of Appeals has stated that, "Although formal findings are not required, the record must indicate the reasoning of the Commission and the basis on which it adopted the rule."[21] New Mexico law "require[s] only that the public and the reviewing courts are informed as to the reasoning behind the rule."[22] As explained in this brief, the record in this proceeding provides overwhelming rationale to adopt the proposed rule, which would ban the use of PFAS and undisclosed chemicals in downhole operations in New Mexico. A proposed statement of reasons is enclosed with this filing as "Attachment B."

[18] Hansen, Tr. 11/14/2024 172-173; Martin, Tr. 11/13/2024 225:7-22; Brown, Tr. 11/12/2024 255:23-25; 256:1-4; WG Ex. 79 5:8-9.
[19] NMSA 1978 § 70-2-12.2.
[20] 19.15.3.13(C) NMAC; *see also Earthworks' Oil & Gas Accountability Project*, 2016-NMCA-055, *12.* (When adopting a new rule, "an administrative agency is required to provide a statement of reasons for doing so.")
[21] *Id.* 12 (internal quotation marks and citation omitted).
[22] *Id.* (internal quotation marks and citation omitted).

III. The Commission must promulgate the proposed rule to protect New Mexicans and our scarce freshwater resources.

Prohibiting PFAS and undisclosed chemicals, as proposed in this rulemaking, is essential for protecting public health and the environment amid expanding oil and gas production. Scientific evidence unequivocally demonstrates that PFAS chemicals persist in the environment for decades, bioaccumulate in human and animal tissue, and pose severe health risks, including cancer, reproductive harm, and immune system suppression.[23] The presence of PFAS in produced water has been documented in peer-reviewed studies, underscoring the urgent need for regulatory intervention to halt further contamination.[24] This is what is known; however, current state law allows trade secrets exemptions from chemical disclosure, which creates many unknowns that can threaten public and environmental health and safety.

There is currently no restriction on the use of PFAS in downhole operations in New Mexico.[25] PFAS can be used now and, without adoption of the proposed rule, it can be used in the future. OCD Deputy Director Powell said the proposed rule to ban PFAS is "an appropriate but extraordinary proposal."[26] Uncontroverted evidence from the hearing shows that PFAS has been used in New Mexico oil and gas operations, and that without full chemical disclosure it is impossible to know if or when PFAS is being used. Mr. Horwitt testified that over a roughly ten-year period between January 1, 2013 and September 29, 2022 the oil and gas industry used two PFAS compounds in New Mexico, PTFE and fluoroalkyl alcohol substituted polyethylene

[23] NEE's Exhibit A, Direct Testimony of Kristen Hansen, Ph.D., at 7-8, 10-11; NEE's Exhibit B, Rebuttal Testimony of Kristen Hansen, Ph.D., at 4-5.
[24] NEE Exhibit B, Rebuttal Testimony of Kristen Hansen, Ph.D., at 9-10 and Exhibit KH-4; Hansen, Tr. 11/14/2024 166-167, 188, 191-196, 200-202.
[25] Powell, Tr. 11/14/2024 232:3-9 ("Is there currently any regulatory restriction that you know of that prevents a company from using PFAS in future downhole operations? A: Currently or after this? Q: Currently. A: No.")
[26] Powell, Tr. 11/13/2024 271:23-24.

glycol ("FPEG").[27] Mr. Horwitt's research indicates that during that time period 22 oil and gas companies injected 227 wells with a total of 2,605 pounds of PTFE.[28] Additionally, EOG Resources, Inc. injected 34 wells with FPEG with a total injected weight of 6,400 pounds.[29] Between 2013 and 2022, oil and gas companies injected 8,200 wells (over 90 percent of all wells) with at least one trade secret chemical per well.[30] Trade secret chemicals used over this period totaled 243 million pounds.[31] Oil and gas companies injected more than 3,600 of these 8,200 wells with surfactants that could be fluorosurfactants, a class of chemical that include multiple PFAS.[32] NMOGA's witness Dr. Richardson agreed with Mr. Horwitt's direct testimony regarding the identities and the amounts of the PFAS used in New Mexico as outlined in the Physicians for Social Responsibility ("PSR") report marked as WG. Ex. 19.[33]

Existing OCD regulations allow the oil and gas industry to withhold identities of any chemicals claimed to be "proprietary, trade secrets or confidential business information."[34] Therefore, regulators and the public do not know whether PFAS are still being used by industry, or if other types of PFAS have been used other than the PTFE and FPEG that have been specifically disclosed.

The way to prevent PFAS contamination is to prohibit its use in the first place. Dr. Richardson agreed with this premise. When asked about banning PFAS he stated, "That is the goal of this hearing."[35] When asked, "if you ban it in the first place you presumably wouldn't have to remove it from the environment?" he answered, "there is still going to be residual PFAS

[27] Horwitt, Tr. 11/12/2024 195:23-25; 196:1-3.
[28] WG Ex. 10 8:5-11.
[29] *Id.* 8:11-14
[30] *Id.* 9:5-6.
[31] *Id.* 9:7-9.
[32] *Id.* 9:10-18.
[33] Richardson, Tr. 11/14/12024 200:20-25; 201:1-3; 235:4-23.
[34] 19.15.16.19(B)(3) NMAC.
[35] Richardson, Tr. 11/15/2024 252:25; 253:1.

to deal with . . . But yes, if you ban a compound, it is no longer used, then you will not see it -- it's use in the environment will be less, that's correct."[36]

By allowing the use of PFAS and undisclosed chemicals by industry, the Commission and OCD currently create unnecessary risks to public and environmental health. This is because oil and gas operations inherently create pathways of potential exposure to PFAS and other chemicals.

A. Loss of well integrity and spills present risk to water and create pathways to exposure.

Whether from spills or loss of integrity events, produced water and nondomestic wastes present a risk to the environment and public health. When asked which poses a greater risk, Dr. Martin answered, "that totally depends on the scenario . . . I would actually need data to say which pathway in this particular circumstance would be, you know, more of a risk to human health."[37] In Dr. Brown's experience with residents in the Marcellus Shale, flowback and produced water were major pathways to exposure to contaminants.[38]

One of the primary pathways that oil and gas operations create for exposure to chemicals in wastes, including PFAS, is through drinking water. Dr. Martin stated, "For general population, exposure would primarily be through food and water . . . Drinking water, obviously, could be a municipal supply or it could be a -- a well at someone's house or property."[39]

Regardless of the source of freshwater contamination, protection of our scarce freshwater resources is paramount in New Mexico. According to the New Mexico Environment Department, approximately 78 percent of New Mexicans get their drinking water from

[36] Richardson, Tr. 11/15/2024 252:25; 253:1-10.
[37] Martin, Tr. 11/13/2024 215:19-25; 216:1-2.
[38] Brown, Tr. 11/12/2024 250:16-22.
[39] Martin, Tr. 11/13/2024 213:13-17; *see also* Martin, Tr. 11/13/2024 227:3-7 (stating contaminated drinking water is one of the primary pathways to PFAS exposure).

groundwater.[40] 81 percent of New Mexicans are served by public systems with water derived from ground water sources, and over 170,000 New Mexicans depend on private wells for drinking water.[41] Ground water makes up nearly half of the total water annually withdrawn for all uses in New Mexico, including agriculture and industry, and is the only practicable source of water in many areas of the state.[42] New Mexico simply cannot afford to contaminate any of our scarce freshwater resources.

1. Spills are pathways to exposure.

Melissa Troutman's testimony shows that produced water and other fluid spills happen with great frequency and high volumes in New Mexico. Between January 1, 2010 and October 15, 2024 oil and gas companies have reported to OCD:

- 16,618 oil and gas fluid-related spill incidents
- 10,657 oil and gas produced water spill incidents
- 19,812 spills of separate oil and gas fluids
- 4,789,952 barrels of spilled fluids, of which 1,768,867 Bbls were lost and not recovered.
- 187 spills that reached a watercourse
- 99 spills that affected groundwater[43]

Dr. Spear included in his direct testimony a map showing the location of these spills as Figure 1B.[44]

Ms. Troutman consulted with OCD about how to use the databases that contain this data and how to properly compile the data.[45] When asked at the hearing, OCD stated they did not

[40] WG Exhibit 3.
[41] *Id.*
[42] *Id.*
[43] WG Ex. 91 Direct Testimony of Melissa Troutman, WG. Ex. 92 (compiling release incidents), and WG Ex. 93 (compiling fluid spill incidents).
[44] WG Ex. 79 at 11, Figure 1B.
[45] Troutman, Tr. 11/13/2024 122:24-25; 123:1-23.

dispute the spill numbers in Ms. Troutman's testimony.[46] This is important because any PFAS used downhole can come back up with flowback and produced water, which are mixed for purposes of disposal.[47] This is also true for other additives used in downhole operations that may be an environmental or human health concern.[48]

OCD agreed that PFAS contaminated produced water is a threat to groundwater.[49] Dr. Martin testified that any produced water that is spilled can percolate through the soil to reach aquifers or surface waters, especially during a rain event.[50] Dr. Spear testified that at a meeting of the International Society for Subsurface Microbiology last year in Banff Alberta, he attended a talk "that showed surface releases of things coming out of trucks disposed -- dispensed of right on the ground in southeast New Mexico and around Carlsbad. . . You have no idea what was in those waters, but I could assume that it's a complex minestrone of many compounds that are being surface-discharged, which are then going into surface waters."[51]

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[46] Powell, Tr. 11/14/2024 226:24-25; 227:1-6 ("Q: Were you in the room during this proceeding when Ms. Troutman testified? A: When who? I'm sorry. Q: Ms. Troutman testified. A: Yes. I was. Q: Do you have any reason to dispute the numbers in her testimony and exhibits? A: No.")

[47] Powell, Tr. 11/14/2024 225:24-25 226:3-23 ("Do you agree that one of the purposes of the proposed rule is to protect groundwater? A: Yes. Q: And do you agree that PFAS could be a threat to groundwater contamination regardless of its source? A: Yes. Q: Do chemicals that are put downhole come back up? A: I would assume they would come back up and the -- the fluids that weren't produced from the well. Q: So they could come back up [in] flow back? A: Yes. Q: They could be present [in] produce[d] water that's brought to the surface? A: Yes. Q: Are flow back and produced water mixed together for purposes of disposal? A: Yes. Q: For the chemicals that come -- that go downhole and come back up be used for [enhanced] oil recovery? A: Yes. Q: Could they be used for further fracking? A: Yes.")

[48] Troutman, Tr. 11/13/2024 124:8-25; 125:1-4 (Q: "produced water is reported volumes of produced water spills; correct? A: Correct. Q: Okay. [] As I understand the concern, certainly there are -- there may be constituents of concern in -- to you in produced water, but of chief concern is that if PFAS or other additives are used in downhole operations and completions, it is possible that those are -- that those same additives are present in the produced water that's produced from the well; is that -- that was another long one. Sorry. A: No, I think that's correct. I've heard that concern from a lot of people. I don't state that concern in my direct testimony, but it's something that I generally understand to be true. Q: That's where I'm getting at. PFAS and completions compounds are part -- potentially part of the volumes that you described in your exhibit and testimony; correct? A: That's my understanding.")

[49] Powell, Tr. 11/14/2024 226:3-5.

[50] Martin, Tr. 11/13/2024 213:25; 214:1-17; 231:3-20 (explaining that produced water spills can migrate into groundwater or reach surface waters and are a potential pathway to PFAS exposure).

[51] Spear, Tr. 11/13/2024 77:1-8.

Dr. Hansen also identified produced water spills as a pathway to exposure.[52] Because PFAS compounds are mobile in fluids, spills are particularly concerning.[53] Dr. Hansen explained that "Many [PFAS] are highly mobile and . . . [m]any PFAS move quickly and widely from their point of discharge or disposal via air, water, dust, sediment or bioDA."[54]

Dr. Hansen explained, "the spills that happened [] as a result of the oil and gas industry's use and the exposure then to surface water and groundwater is particularly concerning as it aids in the mobility of these compounds in the environment."[55] Dr. Spear testified that after a spill heavy rains can cause contaminants that were deposited on the soil from a spill to go mobile. He stated, "around Carlsbad you have little creeks, and ravines, and streams that [] only flow when there's a major thunderstorm . . . that's when those compounds would go mobile."[56] This mobility is further amplified in the Permian Basin's karst ecosystem, where the surface and subsurface are particularly connected, as explained by Dr. Spear.[57] Additionally, Mr. Horwitt explained that the 2016 EPA report on fracking and drinking water shows multiple pathways for water contamination, including spills.[58] Mr. Horwitt further explained that wastewater spills after fracturing are not the only concern; spills of fracking or drilling fluids prior to downhole operations also pose a risk to freshwater.[59]

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[52] Hansen, Tr. 11/14/2024 156:14-20. ("The potential for PFAS spills by the oil and gas industry on the ground or in waterways, volatilization of PFAS from surface ponds, spills, or discharge of produced water underscores the significant risk to communities and the environment. Any one of these PFAS exposure routes could lead to wider environmental or human exposure.").
[53] Hansen, Tr. 11/14/2024 194:2-7.
[54] Hansen, Tr. 11/14/2024 156:9-13; *see also* NEE Ex. A 8:10-20.
[55] Hansen, Tr. 11/14/2024 194:2-7.
[56] Spear, Tr. 11/13/2024 77:13-17.
[57] Spear, Tr. 11/13/2024 at 73-75 (Explaining the connection between the subsurface and the surface in a karst environment as being like a "sponge"); *See also* Spear Tr. 11/13/2024 76:21-25; *see also* WG Ex. 79 12:1-12 (Dr. Spear describes karst as a "sponge" in his direct testimony.)
[58] WG. Ex. 34 at 7-25; Horwitt, Tr. 11/12/2024 209:12-23.
[59] Horwitt, Tr. 11/12/2024 217:12-25.

2. Loss of well integrity is a pathway to exposure.

Loss of well integrity also creates exposure pathways for the potential contamination of groundwater. There was little discussion at the hearing about loss of well integrity presenting a pathway to exposure, because it is so obvious. In fact, Dr. Martin testified that if a well's mechanical integrity fails "in [] a drinking water aquifer, then obviously that would be a concern . . . if there's PFAS in the product, then sure, some PFAS would be released into the water."[60] Mr. Powell testified that known loss of well integrity events happen roughly once a year in New Mexico.[61]

3. Existing science shows PFAS has been detected in produced water.

We know that PFAS has been detected in produced water in New Mexico. Specifically, researchers have detected PFAS in produced water samples from the Permian Basin.[62] Dr. Spear testified about the Permian Basin study, stating that "recent produced water characterization efforts revealed PFAS compounds in produced water samples."[63] Although the blanks in this study also tested positive for some PFAS, two forms of PFAS detected in produced water were not found in any of the blanks.[64] As Dr. Hansen pointed out, "not every PFAS that was found [in produced water] was found in the blank."[65]

Second, the study authors stated that while no PFAS were disclosed to FracFocus in the Permian in 2021, "fluoropolymers and fluorinated surfactants [were] reported in FracFocus for

[60] Martin, Tr. 11/13/2024 215:4-7.
[61] Powell, Tr. 11/14/2024 96:18-25; 97:1-7.
[62] WG Exhibit 88. Jiang Et Al. "Characterization of Produced Water and Surrounding Surface Water in the Permian Basin, United States."
[63] WG Ex. 79 14:10-11.
[64] WG Exhibit 88. Jiang Et Al. "Characterization of Produced Water and Surrounding Surface Water in the Permian Basin, United States" at 8, Table 4.
[65] Hansen, Tr. 11/14/2024 184:25; *see also* Hansen, Tr. 11/14/2024 187:16-19 ("[A]lthough it's certainly the case that of the five PFAS compounds identified, I believe two of them were in the blank, but I don't believe all of them were.")

[hydraulic fracturing] in the Permian Basin and other basins," and added that "[i]dentification of these substances is challenging due to trade secret or proprietary information[.]"[66] This is important because fluoropolymers and fluorosurfactants can be PFAS.[67]As the authors of a study published in *The Open Petroleum Engineering Journal* stated:

> "The use of fluorosurfactants is a recent but growing trend due to (i) the exceptional hydrophobic [water-repellent] and oleophobic [oil-repellent] nature of the perfluoroalkyl and perfluoroalkyl ether groups...*The bond strength of the carbon-fluorine bond in perfluoroalkyl and perfluoroalkyl ether groups has been demonstrated as the key to remarkable overall stability for fluorochemicals and fluoropolymers.*"[68]

4. Evidence linking oil and gas operations to drinking water contamination.

The United States Environmental Protection Agency (EPA) has found that, "Surface spills of produced water from oil and gas production have occurred across the country and, in some cases, have caused impacts to drinking water resources. Released fluids can flow into nearby surface waters, if not contained on-site, or infiltrate into groundwater via soil."[69]

Researchers have also shown links between PFAS concentrations in private drinking water wells and unconventional oil and gas.[70] Dr. Hansen testified that this research is relevant to the proposed rule, because "the authors were able to demonstrate a link between PFAS concentrations in private drinking water wells and unconventional oil and gas."[71] The study is also relevant to disclosure requirements. Dr. Hansen explained:

> "the authors measured [] non-targeted PFAS compounds, that is specifically PFAS compounds that are not laid out by EPA methods [a]nd in some cases found extremely high levels of these compounds in the private drinking water wells . . . [which] demonstrate[s] the importance of having a very broad definition of PFAS so that we are

[66] WG Exhibit 88. Jiang Et Al. "Characterization of Produced Water and Surrounding Surface Water in the Permian Basin, United States" at 8.
[67] WG Ex. 10 at 10.
[68] WG Exhibit 39 Peter M. Murphy and Tracy Hewat. Fluorosurfactants in Enhanced Oil Recovery. The Open Petroleum Engineering Journal, 1. 58-61, 58 (2008). (emphasis added).
[69] WG Ex. 34 7-25.
[70] WG Ex. 53 "Investigation of Sources of Fluorinated Compounds in Private Water Supplies"; Hansen, Tr. 11/14/2024 159:25; 160:1-2.
[71] Hansen, Tr. 11/14/2024 159:25; 160:1-2.

looking for all the compounds that could potentially impact a water supply, not simply those that have been well-characterized already."[72]

Dr. Hansen further noted that the authors' research was "hindered somewhat by the inability to know specifically what compounds the oil and gas industry had used [and] without having a specific compound named by the industry, they were unable to fully confirm those compounds."[73] This lack of chemical disclosure affected the accuracy and fidelity of the research.[74]

B. The toxicological data we have on PFAS shows they are hazardous to health.

Existing data shows that the PFAS that have been studied show serious toxicological effects. These PFAS are so toxic, the EPA set drinking water standards for six of them in the parts per trillion.[75] As Dr. Brown explained, these standards have been set at incredibly low standards due to the high toxicity of these compounds in low concentrations.[76] When Dr. Martin was on the witness stand, he was asked: "The PFAS that we have [] toxicological data on, those do show negative human health effects?" Dr. Martin answered, "Yes. The few that we have studied in depth have shown that there are toxicological effects."[77]

In addition to the high toxicity of PFAS compounds that have been studied, Dr. Hansen explained that "emerging evidence suggests . . . the potential for additive toxicity amongst different members of the class."[78] Additive toxicity means that "exposure to more than one PFAS may result in health effects greater than exposure to a single PFAS alone."[79] Likewise, Dr. Martin

[72] Hansen, Tr. 11/14/2024 160:3-12.
[73] Hansen, Tr. 11/14/2024 160:16-23.
[74] Hansen, Tr. 11/14/2024 160:24-25; 161:1.
[75] WG Ex. 75 FR Vol. 89 No. 113 June 11, 2024.
[76] Brown, Tr. 11/12/2024 252:21-25; 253:1; WG Ex. 75; (Note that Dr. Sandau stated we should not think of the EPA drinking water limits as toxicological limits. However, on cross he clarified that he meant that these limits should not be accepted as toxicological limits for all PFAS compounds, and he admitted we should actually ask a toxicologist that question.) Sandau, Tr. 11/13/2024 185:5-23.
[77] Martin, Tr. 11/13/2024 225:2-6.
[78] Hansen, Tr. 11/14/2024 154:7-11; 165:15-21.
[79] Hansen, Tr. 11/14/2024 154:11-13.

agreed that some PFAS will have additive toxicity.[80] Additionally, the current scientific literature shows that exposure to PFAS can have effects on sensitive populations "for example, the gestational repercussions and also health implications for infants", "preeclampsia in pregnant people, as well as developmental challenges in gestation and immune suppression of infants[.]"[81] Dr. Hansen also testified that "Many PFAS compounds pass through the placental barrier from mother to infant via breast feeding."[82]

C. PFAS compounds are mobile and uniquely persistent.

PFAS contamination is unique due to the persistence of these compounds in the environment.[83] Even when a PFAS compound breaks down, a residual PFAS remains. Dr. Hansen explained that these residuals also persist in the environment:

> So many PFAS compounds start off as molecules that have a perfluorinated component and a non-perfluorinated component. When those molecules are in the environment or in humans or BioDa, the non-PFAS component often breaks down, leaving a terminal, very persistent PFAS component in the environment. So an example of this that is fairly well-known is that in the textile industry, the PFAS compounds that are used to coat a textile have molecules that are half hydrocarbon and half forever chemical. And when those molecules leave the textile and end up in the environment, the hydrocarbon part of the molecule is -- falls apart, leaving the PFAS and in the case of 3M's textile, for example, that PFAS is a molecule known as perfluorooctane sulfonate that is probably present in over 90 percent of the blood of every human in the United States.
> Q: So when these PFAS break down, you often still have a PFAS after the breakdown?
> A: Absolutely. Yes.
> Q: And that new PFAS, post breakdown, remains persistent in the environment?
> A: Yes. It does.[84]

While Dr. Martin testified that some PFAS are inert, Dr. Hansen explained that, practically speaking, even "inert" PFAS "come with residuals and impurities."[85] When asked about these compounds by Chair Razatos, Dr. Hansen explained, "So I think it's important to separate the

[80] Martin, Tr. 11/13/2024 230:6-25; 231:1-2.
[81] Hansen, Tr. 11/14/2024 166:1-12.
[82] Hansen, Tr. 11/14/2024 156:2-3.
[83] Hansen, Tr. 11/14/2024 167:12-16.
[84] Hansen, Tr. 11/14/2024 167:17-25; 168:1-19.
[85] Martin, 11/13/2024 212:3-5; Hansen, Tr. 11/14/2024 183:2-3.

fact that even though such a pure compound may exist, practically speaking, it doesn't really exist in the products [] that are purchased."[86]

The unique persistence of PFAS compounds combined with their toxicity requires the Commission to implement a broad ban. In response to Commissioner Bloom, Dr. Hansen said she would recommend banning all uses of PFAS that are not critical uses due to persistent toxicity, and this includes uses in oil and gas extraction. Dr. Hansen elaborated "that the toxicologist [she] work[s] most closely with [] are of the mind that we need to ban the use of these compounds for any non-critical use, in part because they go into the environment and they don't go away."[87] They remain mobile and persistent in the environment.[88] Because "PFAS are mobile in the environment, [they are] not easily contained or controlled."[89] In fact, the residual PFAS compounds that are the result of degradation of an original PFAS compound "may be extremely mobile in the environment."[90]

Regulators cannot assume that PFAS compounds will degrade with time and lose their toxicity. When PFAS degrades, there is still a residual PFAS compound that remains, and the definition proposed by Dr. Hansen and Guardians would cover these residuals.[91] During the hearing, the Commission heard extensive testimony on the chemistry of PFAS from Dr. Anderson. However, Dr. Anderson is not a chemist.[92] Like Dr. Hansen, Dr. Anderson also testified that chemical compounds with a single fully fluorinated carbon atom can break down.[93] However, when pressed she could not answer whether the residuals would contain a

[86] Hansen, 11/14/2024 183:8-11.
[87] Hansen, Tr. 11/14/2024 192:16-20.
[88] Hansen Tr. 11/14/2024 175:8-23.
[89] NEE Ex. A 8:18-20.
[90] Hansen, Tr. 11/14/2024 183:7-8.
[91] Hansen, Tr. 11/14/2024 155:3-11.
[92] Anderson, Tr. 11/15/2024 147:15-17.
[93] Anderson, Tr. 11/15/2024 64:1-4.

carbon-fluorine bond or whether the carbon-fluorine bond would be broken by degradation.[94] When asked if the carbon-fluorine bond could be broken in the natural environment, Dr. Anderson stated, "From what I understand, that's still a pretty active area of research. You would have to ask somebody who is studying that intensely to get the nuance."[95] When asked, "Would you suggest I ask a chemist?" Dr. Anderson replied, "Or someone who is working in the fate and transport of those PFAS."[96] Finally, when asked for an example of when a perfluorinated component would break down, Dr. Anderson stated, "Again, you will have to ask somebody with that kind of chemistry experience."[97] Her inability to answer this question might be attributed to the fact that during the hearing she was testifying "as a toxicologist walking through chemistry."[98] Note that Dr. Richardson's testimony that polyfluoralkyl substances degrade into perfluoralkyl substances corroborates Dr. Hansen's testimony that after breakdown of a PFAS, a residual PFAS compound remains.[99]

While Dr. Hansen's proposed definition is broad and considers toxicology concerns, OCD's definition was not formulated with toxicological concern in mind. OCD witness Dr. Martin, who is a toxicologist, admitted this when answering questions from Chair Razatos stating, "we weren't considering, really, toxicology when we were defining PFAS . . . So yeah. I mean, it -- it just wasn't considered."[100]

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[94] Anderson, Tr. 11/15/2024 148:9-10.
[95] Anderson, Tr. 11/15/2024 149:5-8 (Note that in his cross-examination, Dr. Richardson admitted that "If you add energy you can break that carbon fluorine bond.") Richardson, Tr. 11/15/2024 216:10-14.
[96] Anderson, Tr. 11/15/2024 149:9-11.
[97] Anderson, Tr. 11/15/2024 149:22-25; 150:1-5.
[98] Anderson, Tr. 11/15/2024 75:16-21.
[99] Richardson, 11/14/2024 214:4-6 ("Now, like I said, I want to repeat, poly will degrade to per, but then you end up with those terminal products.")
[100] Martin, 11/13/2024 234:10-12.

D. The Commission must broadly define PFAS to protect public health and the environment.

Due to the "significant risk to humans and to the environment" posed by "extremely persistent contaminants like PFAS", Dr. Hansen testified that the precautionary principle dictates that we define PFAS as those compounds with at least "one fully fluorinated carbon atom."[101] This definition is "the broadest definition that we have of PFAS" which "allows us to look at the complexity of the class and to take into account the largest potential for a risk to human health and to the environment."[102] The PFAS definition proposed by Guardians – a "perfluoroalkyl or polyfluoroalkyl substance with at least one fully fluorinated carbon atom" – is consistent with the definitions of PFAS used by 23 states[103] and federal legislation including the National Defense Authorization Acts of 2020, 2021, and 2022.[104] It is also consistent with the definition Dr. Hansen proposed in her testimony.[105] This definition would protect against more forms of PFAS including residuals and impurities.[106] New Energy Economy expert, Dr. Kristen Hansen, a leading expert in PFAS contamination, testified that this definition ensures an accurate understanding of PFAS risk and the necessary regulatory oversight to mitigate harm.[107]

[101] Hansen, Tr. 11/14/2024 172:4-25; 173:1-9.
[102] Hansen, Tr. 11/14/2024 173:1-4.
[103] Guardians compiled these definitions in WG Ex. 8; New Energy Economy ("NEE") Exhibit B, Rebuttal Technical Testimony of Dr. Kristen Hansen, at 1 and 3.
[104] Hansen,Tr. 11/14/2024 155:15-17; New Energy Economy ("NEE") Exhibit B, Rebuttal Technical Testimony of Dr. Kristen Hansen, at 1 and 3.
[105] Hansen, Tr. 11/14/2024 171:9-25; 172:1-3.
[106] Hansen, Tr. 11/14/2024 155:12-14 ("A comprehensive PFAS ban will protect public health from apparent PFAS as well as the impurities, residuals, and partial breakdown products.").
[107] NEE's Exhibit A, Direct Testimony of Kristen Hansen, Ph.D., at 9-10; NEE's Exhibit B, Rebuttal Testimony of Kristen Hansen, Ph.D., at 1 and 3; Hansen, Tr. 11/14/2024 153-157, 171-173, 189-190, 198-200.

1. **Limiting the PFAS definition to those compounds we know have been used or that can be tested for would defeat the purpose of rule.**

In order to protect the public health and the environment pursuant to the Commission's rulemaking authority, the definition of PFAS must not be limited to only those PFAS compounds that are known to be used in downhole operations. The definition must also not be limited to only those PFAS for which standard analytical testing methods exist. The Commission can adopt the broad definition proposed by Guardians to ensure that no PFAS are used and as testing methods advance, the OCD will gradually expand those PFAS that it can detect in investigations. When asked about this concept at the hearing, Dr. Sandau agreed that adopting Guardians' definition does nothing to impede the development of more standard analytical methods for PFAS detection.[108] Therefore, there is no need to limit the definition to OCD's proposal.

There is no harm in adopting a broader definition that bans PFAS chemicals that will never be used, and it will also capture other PFAS that will be used. At the hearing, Commissioner Bloom described this issue in terms of drawing a "circle" to protect the public health and another "circle" around the compounds that can currently be tested for.[109] Commissioner Bloom stated, "I feel like we could have -- we could ban other chemicals that we can't currently enforce against, and the ban protects public health . . . Later, perhaps, as the testing capabilities grow, which you talked about, we'd be able to enforce more of that."[110] When Commissioner Bloom asked Dr. Sandau why these two "circles" need to be the same size, Dr. Sandau responded that there is "no reason to ban a million chemicals that we don't even know what they're used for."[111] However, there is no way to know whether these chemicals may be

[108] Sandau, Tr. 11/13/2024 182:18-25.
[109] Sandau, Tr. 11/13/2024 196:12-18.
[110] Sandau, Tr. 11/13/2024 196:19-23.
[111] Sandau, Tr. 11/13/2024 197:25; 198:1-2.

used in the future, and if industry truly has no use for them, it does not impact industry to ban them.

Dr. Hansen testified that tailoring the definition of PFAS to those compounds that have been used, or that are expected to have been used in fracking operations, is insufficient to protect public health and the environment. Using a broad definition is important because PFAS are a large class of chemicals. Dr. Hansen stated, "The EPA recognizes at least 10,000 PFAS, though experts in the field estimate the class[] includes up to 15,000, many of which have not been identified, much less characterized."[112]

Dr. Hansen further explained that "the uncontrolled nature of PFAS manufacturing processes and the variety of PFAS chemicals in the environment, a definition limited to specific compounds would leave the vast majority of PFAS unmonitored and uncontrolled."[113] Dr. Hansen testified that only regulating what can be tested for would be a "backwards looking assessment of risk" because we shouldn't wait until "we can detect them and they're showing up in people's drinking water [to] start caring about them."[114]

Because full disclosure has not been required in New Mexico, no one knows which compounds have been used downhole. Dr. Richardson testified that any of the definitions including Guardians' would protect the public, but that Guardians' definition should not be used, because it would include compounds that you would not expect to see in fracking operations.[115] Again, if compounds are not used in fracking operations, then the broader definition has no impact on the industry. Furthermore, Dr. Richardson does not know what compounds have been used in fracking.[116] In fact, due to gaps in disclosure, no one does.

[112] Hansen, Tr. 11/14/2024 153:19-23.
[113] Hansen, Tr. 11/14/2024 154:19-23.
[114] Hansen, Tr. 11/14/2024 199:18-25; 200:1-5.
[115] Richardson, Tr. 11/15/2024 294:18-25; 295:1-4.
[116] Richardson, Tr. 11/14/2024 257:7-13.

For example, during a direct examination by counsel for NMOGA, Dr. Anderson stated that the pharmaceutical Paxlovid contains a PFAS that would be included in Guardians' proposed definition of PFAS.[117] Dr. Anderson testified that this PFAS does not have qualities that would be useful in the oil and gas industry.[118] However, on cross-examination, Dr. Anderson could not say whether the PFAS compound in Paxlovid has ever been used in New Mexico oil and gas operations.[119] She further agreed that she did not know any specific PFAS that had been used other than those two that have been disclosed on FracFocus.[120] When asked, "So the reason that you know they have been used is because they have been disclosed?" Dr. Anderson answered, "Correct."[121] This exchange illustrates the obvious - until industry is required to fully disclose chemicals used in downhole operations, regulators and the public will not know the chemical identities of these compounds. If chemical identities remain unknown, it is impossible to enforce a ban on PFAS.

Last, in a lengthy cross examination exchange, Dr. Richardson claimed that "Despite some limited historical use of PFAS in hydraulic fracturing operations, the oil and gas industry has since transitioned away from these compounds in favor of other nonPFAS containing chemistries as evident by the data provided in FracFocus."[122] However, he later admitted there is actually no way to know if that statement is true, due to gaps in disclosure regulations.[123] When asked, "So then it is impossible to know all of the chemicals that are being used downhole in

[117] Anderson, Tr. 11/15/2024 81:2-20.
[118] *Id.*
[119] Anderson, Tr. 11/15/2024 162:23-25; 163:1-4.
[120] Anderson, Tr. 11/15/2024 163:5-12.
[121] Anderson, Tr. 11/15/2024 163:10-12.
[122] Richardson, Tr. 11/14/2024 253:21-25; 254:1-10.
[123] Richardson, Tr. 11/14/2024 255; 257.

New Mexico?" Dr. Richardson answered, "You would not know. Yes, that's correct. Those are trade secreted . . . You would not know."[124]

2. The definition of PFAS cannot be limited to only those compounds for which toxicological data exists.

Limiting the PFAS definition to only those compounds for which toxicological data exists is also insufficient. Dr. Hansen described this problem at the hearing, stating:

> I disagree with the non-scientifically based perspective that insufficient toxicology data for a particular PFAS should disqualify that compound from inclusion in the comprehensive ban. Such logic is characterized in social science as "Undone science." It's defined as "Areas of research that are of concern for members of the public yet are not an area of focus for industry researchers, often due to deliberate or tacit avoidance."[125]

Dr. Anderson agreed that lack of toxicity evidence does not make something safe.[126] This means that for those PFAS for which we have no toxicological data, we do not know their toxicological profile.[127]

The six PFAS compounds the EPA recently regulated are not the only harmful ones; they are simply the only six for which we have sufficient toxicological data to establish drinking water standards.[128] Dr. Hansen explained that "emerging evidence suggests potential similarities in toxicity for many members of the class" and "the potential for additive toxicity amongst different members of the class."[129]

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[124] Richardson, Tr. 11/14/2024 257:7-13.
[125] Hansen, Tr. 11/14/2024 155:18-25; 156:1; *See also* Hansen, Tr. 11/14/2024 163:21-24 ("The statement that there is -- there's no evidence that this compound is toxic does not mean that there is evidence to prove that it is non-toxic.")
[126] Anderson, Tr. 11/15/2024 143:9-14.
[127] Anderson, Tr. 11/15/2024 151:8-15.
[128] Hansen, Tr. 11/14/2024 153:24-25, 154:1-12. ("The list is limited to 6, not because these are the only 6 of 15,000 that pose a threat to human health, but because these are the compounds for which sufficient data exist to characterize deleterious effects to human health.")
[129] Hansen, Tr. 11/14/2024 154:7-11; 165:15-21.

Dr. Martin also testified that the PFAS for which we have toxicological data show negative human health effects.[130] Dr. Martin added that "there's a small handful of PFAS for which we have a fair amount of toxicological data . . . [a]nd then there's a very large subset of PFAS for which we have literally no data."[131] The data that we do have shows associations between the "handful" of PFAS that have been studied so far and liver, lung, kidney, and testicular cancers.[132] This data also shows links between PFAS exposure and liver disease, kidney disease, immune disruption, thyroid disruption, lipid dysregulation, insulin dysregulation, reproductive issues, and developmental problems.[133]

Due to the toxicological data that shows PFAS are toxic at very low concentrations, several witnesses agreed that the threat of PFAS contamination makes application of the precautionary principle appropriate, including Dr. Martin,[134] Dr. Brown,[135] Dr. Hansen,[136] and Dr. Spear.[137] The precautionary principle asks "people who are in the position of making decisions to encourage caution in decision-making, especially when there is some evidence of risk."[138] In the context of regulating persistent compounds like PFAS, "there is plausible risk to the environment and to human health based on what we know about this class of compounds and so the precautionary principle would urge decision-makers to make decisions cautiously and on the side of public health."[139] Adherence to the precautionary principle is important, because as Dr. Hansen testified, it is not a coincidence that the PFAS that have been studied have been shown to

[130] Martin, Tr. 11/13/2024 225:2-6.
[131] Martin, Tr. 11/13/2024 224:19-25.
[132] Martin, Tr. 11/13/2024 223:1-25; 224:1.
[133] Martin, Tr. 11/13/2024 224:2-16.
[134] Martin, Tr. 11/13/2024 225:7-22.
[135] Brown, Tr. 11/12/2024 255:23-25; 256:1-4 (describing application of the precautionary principle as "the only moral thing to do.")
[136] Hansen, Tr. 11/14/2024 172:11-18.
[137] WG Ex. 79 5:8-9 ("The precautionary principle dictates that we should ban known harmful substances and at least know what is being used in O&G production.")
[138] Hansen, Tr. 11/14/2024 172:9-11.
[139] Hansen, Tr. 11/14/2024 172:11-18.

be harmful.[140] Dr. Martin also testified that the EPA followed the precautionary principle in setting PFAS drinking water standards.[141]

The adoption of the PFAS definitions proposed by OCD or NMOGA would make assumptions about which compounds the industry will use as well as assumptions about PFAS toxicology when we do not yet have the data. As Dr. Martin pointed out, "Our understanding of the toxicology of PFAS is going to evolve a lot in the next [] five, ten, fifteen years. But [] we're at a point, right now, where we're trying to make decisions about compounds that we just don't know a lot about."[142] Adopting Guardians' proposed PFAS definition would not assume that all PFAS are as toxic as the ones that have been studied, but it would apply the precautionary principle in a manner that would ensure the protection of public health and the environment as science evolves. This is especially important given Dr. Hansen's opinion that it is no coincidence that the PFAS that have been studied are toxic in exceedingly low concentrations.

E. Full chemical disclosure is needed to enforce the PFAS ban and protect public health and the environment.

Full disclosure of all chemicals used in downhole operations is essential to enforcing a ban on PFAS, monitoring compliance, and conducting meaningful environmental and health assessments. Without disclosing all chemicals used in downhole operations, there is no way to ensure that chemicals going downhole are not PFAS. The proposed rule achieves full chemical disclosure through a ban on undisclosed chemicals and does not require the disclosure of trade secret information. If industry does not want to disclose a chemical identity, then it simply cannot use that chemical in New Mexico.

[140] Hansen, Tr. 11/14/2024 164:5-17.
[141] Martin, Tr. 11/13/2024 229:3-19.
[142] Martin, Tr. 11/13/2024 235:19-23.

1. Incomplete chemical disclosure can hide PFAS and threaten public health and the environment.

The oil and gas industry has historically resisted comprehensive chemical disclosure, claiming it would require them to reveal "trade secrets." However, the ethical and health implications of withholding such information are profound. Communities have a fundamental right to know the chemicals introduced into their environment, particularly when these substances, such as PFAS, pose significant health risks. This Commission must require full chemical disclosure in downhole operations in order to enforce a PFAS ban. Without full chemical disclosure, there is no way to know whether chemicals used downhole are PFAS.

OCD acknowledged this need for disclosure in response to questions from Commissioner Bloom. When Commissioner Bloom asked Mr. Powell whether we know for certain that PFAS chemicals are not being used when we don't require disclosure, Mr. Powell answered, "I don't think we know with certainty."[143] Dr. Hansen agreed that full disclosure is necessary to implement a PFAS ban in order to "to verify industry compliance with the PFAS ban and to provide information necessary for risk assessments, monitoring by regulators, first responders, health professionals, and community members."[144] Mr. Horwitt likewise testified in response to Commissioner Bloom's questions that even though disclosure of PFAS to FracFocus stopped in 2020, "we cannot be confident that that means that those types of PFAS were not used beyond those dates or that other types of PFAS were not used during that ten-year period we looked at or beyond those dates, because of the gaps in disclosure."[145]

Pursuant to its authority, OCD's rule proposal in this proceeding would require full disclosure of chemicals used in fracking operations, but only after there has been a potential

[143] Powell, Tr. 11/14/2024 247:5-6.
[144] Hansen, 11/14/2024 156:23-25; 157:1-2.
[145] Horwitt, Tr. 11/12/2024 199:10-15.

impact to groundwater.[146] OCD's proposal is not precautionary nor does it provide the critical chemical safety data that first responders, medical professionals, public health researchers, private water supply owners, oilfield workers, and anyone else who might need public access deserves.

As Dr. David Brown explained, lack of information about chemical disclosure impedes public health work. Dr. Brown has extensive experience working "to protect the health of people living in the shadow of shale gas development."[147] In this work, Dr. Brown has provided "guidance to global partners, extending outward from southwest Pennsylvania and across the United States to India and beyond."[148] His work has "produced first-in-the-nation data on health symptoms associated with shale gas development."[149]

Dr. Brown explained the problems with addressing a public health crisis without full chemical disclosure.[150] "Because industry was not required to disclose all chemicals used in the fracking process [in Pennsylvania], the public health professionals [] did not have the data needed to provide public health guidance to protect the communities in areas where fracking occurred."[151] This means that without full chemical disclosure, public health professionals will

[146] OCD Ex. 1.
[147] WG Ex. 57 2:17-18.
[148] WG Ex. 57 2:18-19.
[149] WG Ex. 57 2:20-21.
[150] *See e.g.* Brown, Tr. 11/12/2024 249:6-11 ("It's those other chemicals that we didn't know, so we were having to make the best judgment we could to protect the people with the information that was available. When we didn't have information available, we had no way to do anything with it, because we didn't have any information. Is that clear?")
[151] WG Ex. 57 7:18-21; *see also Id.* 10:17-19 ("Because of limited and undisclosed information about specific exposures, it is difficult to link the available exposure information at fracking sites with the biochemical understanding needed to establish safety guidance.")

have to make guesses rather than dealing with facts and data.[152] Public health professionals cannot assume that compounds are safe when they are unknown.[153]

Dr. Brown pointed out that lack of full disclosure meant that he and his team did not even consider PFAS exposure, because they were completely unaware of it. He explained, "When documenting health effects in Pennsylvania, the Health Project was unaware that PFAS was present in oil and gas operations and therefore didn't consider those specific chemical exposures . . . If there had been chemical disclosure, we would have known about the presence of PFAS, and we would have considered them specifically."[154] Likewise, when Chair Razatos asked Dr. Brown whether he investigated PFAS exposure in his work in the Marcellus Shale in Pennsylvania, Dr. Brown replied, "we didn't know PFAS was a problem when we prepared that table, so we didn't look for it."[155]

Dr. Spear's testimony illustrates that what goes downhole will potentially come to the surface and be around for generations.[156] The public needs to know what these compounds are so they can be researched.[157] Access to data will permit more research and prevent harm to the environment.[158] This data is necessary to research how compounds interact with the subterranean

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[152] Brown, Tr. 11/12/2024281:20-25; 282:1-5 ("Your experience with undisclosed chemicals will be in my judgment the same as the experience we had in Pennsylvania when we were working with undisclosed chemicals. Physicians and public health people simply cannot guess as to what the effects are, and you simply cannot assume the compounds are safe. We don't assume every compound is not safe, but when there are chemicals that are in the toxic category, which these are, we assume that we need to protect the public health.")

[153] *Id.*

[154] WG Ex. 57 18:19-21.

[155] Brown, Tr. 11/12/2024 266:2-6.

[156] Spear, Tr. 11/13/2024 69:1-8 ("I think it's not just PFAS/PFOA compounds. I think we need more data to understand what's going down the hole. We need to understand what is potentially migrating in the subsurface. I want -- I would -- I -- it would be great for future generations to understand what went down a hole today, because some of these compounds are going to be around for decades or centuries.")

[157] Spear, Tr. 11/13/2024 72:7-12 ("So am I understanding your testimony, Professor Spear, to agree with the idea that quantification of the contaminant is important? A: It would be important from a science perspective to better understand what's going on in the subsurface.")

[158] Spear, Tr. 11/13/2024 72:7-1281:6-18 ("Okay. So you don't have, as you sit here today, a specific proposal to change any mechanical integrity tests, limits, or processes, or equipment requirements, or

environment and what their fate and transport may be.[159] The information gained for full disclosure is therefore necessary for research which in turn affects if and how regulators decide to take action. As Dr. Spear explained:

> More information would be helpful for people like me doing research. More information would probably be helpful for the government so they better understand how to regulate compounds. I don't think that we should hide anything from people in a democracy. I think that we should be transparent with what's in your water. You should know what's in your water. You should know where it comes from. You should know where your waste water goes.[160]

While OCD and NMOGA's proposal would provide for full chemical disclosure in the event of a well integrity event, this is not sufficient to protect the environment and public health. OCD's proposed testing provisions would also not apply to a plugged well that is leaking, so there would be no way to attain chemical disclosure from a well that was plugged.[161] OCD's provision would also not provide a way to get chemical disclosure from a well that is the source of a produced water spill.[162] These gaps in OCD's proposed rule create data gaps that could impact public health and the environment.

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anything like that? It seems like it's a -- it's a really a recommendation to obtain more information; is that fair? A: More information would be great. I could envision, like, let's do an experiment to see how well this particular system or subsystem in a downhole environment works, and let's test it, and let's see what happens. But we -- we need, like, declaration of what is being used. It's hard to work when you're blind.")

[159] Spear, Tr. 11/13/2024 88:7-15 ("And my point is, in an environmental system, I think the more knowledge we have for how we're making the recipe to get a product out of the ground, in this case, it's important to know what's in the recipe. And it's important to know the fate of where those compounds might go with time, or how are they going to be used, or how are they going to disappear, or not..")

[160] Spear, Tr. 11/13/2024 110:21-25; 111:1-6.

[161] Powell, Tr. 231:1-8 ("Q: And would it also apply to the loss of integrity of a plugged well? A: For a plugged well, the way it's defined at the top, both in WildEarth Guardians and OCD's, it's if damaged from shooting, fracturing or treating of a well has the potential impact, a plugged well I don't believe would be treated at that point. So I don't know that a plugged well would apply.")

[162] Powell, Tr. 11/14/2024 231:14-19 ("Q: Sure. The same section we're talking about, loss of a well integrity, that does not -- those proposed provisions do not apply to spills that affect groundwater or fresh water courses. A: Unless the spill happens because of a loss of integrity.")

It is important to note that PFAS are not the only additives that can pose health risks. OCD agrees that chemicals other than PFAS can be harmful to human health.[163] Mr. Powell provided acids and formaldehyde as examples of nonPFAS chemicals that are contaminants of concern.[164] These chemicals and others disclosed to FracFocus are identified by a Chemical Abstract Services ("CAS") number. CAS numbers are unique chemical identifiers that permit regulators and the public to identify a chemical with a simple Google search.[165] Currently, these CAS numbers can be withheld, and Guardians' proposed rule would change that.

Last, nondisclosure makes adequate predrill testing impossible. As Mr. Horwitt explained, "the public has a right to know what chemicals they might be exposed to, so they can take action to protect themselves.'[166] Full chemical disclosure would allow New Mexicans to conduct "a baseline water test on their water well before any fracking occurs."[167] In baseline water testing, owners of domestic wells could test for chemicals that are disclosed and "after an oil and gas well [is] drilled or fracked [] test again to see if there's any change in water quality, looking for those chemicals that have been known to be used."'[168] Mr. Horwitt added that disclosure "would also empower regulators and scientists to conduct similar testing[.]"[169] Dr. Richardson pushed back on this idea and testified that members of the public would not know how to do baseline groundwater testing.[170] However, Dr. Richardson's statement seems to

[163] Powell, Tr. 11/14/2024 221:15-19 ("Q: Do you agree that there are chemicals that may be present in frack fluids that are not PFAS but could be harmful to the environment, public health? A: There's chemicals in the FracFocus links that I wouldn't want to drink that's being reported.")
[164] Powell, Tr. 11/14/2024 274:12-17.
[165] Powell, Tr. 11/14/2024 224:6-20.
[166] Horwitt, Tr. 11/12/2024 218:8-10.
[167] Horwitt, Tr. 11/12/2024 218:12-13.
[168] Horwitt, Tr. 11/14/2024 219:3-7.
[169] Horwitt, Tr. 11/14/2024 219:7-9.
[170] Richardson, Tr. 11/14/2024 232:12-19 ("In your experience, Dr. Richardson, would a member of the public know how to conduct its own groundwater sampling for PFAS? A. I will say in general, no. Right? There always can be an environmental engineer like myself who potentially could do it, but by and large, no.")

presume that a water well owner would conduct their own chemical analysis. During cross-examination, Dr. Richardson admitted that the proposed rule does not prohibit members of the public from hiring someone who is qualified, like an environmental engineer, to conduct testing and analysis of their domestic water well.[171]

2. OCD must retain chemical disclosure records indefinitely to protect public health and the environment.

OCD relies on existing regulations that require "the division [to] download and archive New Mexico FracFocus submissions on a quarterly basis."[172] However, this is also insufficient. Guardians' proposed rule would require OCD to retain disclosures indefinitely so they are available in the future whenever a well loses integrity, when a spill occurs, or in any other event where produced water or nondomestic wastes threaten the environment or public health.[173] While downloading the FracFocus disclosures puts this information in possession of the OCD rather than solely with a third party, there is currently no requirement for OCD to retain these disclosures indefinitely into the future. Indefinite retention will give regulators, researchers and the public the data needed to respond to inevitable spills and other future contaminating events. Indefinite retention by OCD is especially important because well ownership changes with mergers and acquisitions, and it may be difficult or impossible to get this information when ownership changes or companies cease to exist.[174]

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[171] Richardson, Tr. 11/14/2024 251:6-11.
[172] 19.15.16.19(B)(3) NMAC.
[173] WG. Ex. 1 Proposed amendment to add subsection E to 19.15.7.16 NMAC.
[174] Powell, Tr. 11/14/2024 255:9-17. ("MR. BLOOM: Yeah. This reminded me, I had one other question I forgot to ask. So FracFocus does not get the -- doesn't preserve the proprietary information, right. That's all -- if somebody claims it's proprietary, that company that applied is the only one that knows what it is? THE WITNESS: Correct. They don't receive it. All they receive is the information provided where it's marked proprietary on that submission.")

OCD's answer to the problem of shifting ownership of wells is that it would only require disclosure for the hydraulic fracturing operations immediately preceding a loss of integrity event.[175] However, this is not sufficient because it would not cover spills.[176] Additionally, wells can be fractured numerous times and chemicals from prior fractures can remain downhole.[177] In fact, there is no limit on how many times a well can be fractured.[178] Full disclosure for each downhole operation would give regulators the information they need to investigate for all chemicals used in a well, in the event of any problem, not just those used in the most recent downhole operation.

Indefinite retention of disclosures is also important, because we cannot expect the integrity of wells to last forever. As Dr. Spear explained, seismic activity and microbial induced corrosivity will likely cause wells to fail in the long term.[179] This probability of eventual well failure applies to wells plugged today and those plugged in the past.[180] Well plugs are likely not studied "from a microbial geochemical standpoint over time"[181] and "have [a] design lifespan that often doesn't include microbes."[182] We need to know the chemicals that were put downhole whether a well fails tomorrow or in 200 years. To do that, OCD must indefinitely retain chemical disclosures.

3. Existing law creates gaps in disclosure.

Current OCD regulations do not require full chemical disclosure. These regulations provide that "the division does not require the reporting of information beyond the material

[175] Powell, Tr. 11/14/2024 255:9-25; 256:1-25; 257:1-7.
[176] *See* OCD Ex. 1-0007—1-0009 (OCD's redline proposal for disclosure would only cover loss of integrity events and not spills).
[177] Powell, Tr. 11/14/2024 223:1-25; 224:1-5.
[178] *Id.*
[179] Spear, Tr. 11/13/2024 78:5-18; 114:17-25; 115:1-11.
[180] Spear, Tr. 11/13/2024 78:19-25; 79:1-14.
[181] Spear, Tr. 11/13/2024 79:11-14.
[182] Spear, Tr. 11/13/2024 100:12-25; 101:1-17.

safety data sheet data" and "the division does not require the reporting or disclosure of proprietary, trade secret or confidential business information."[183] OCD's disclosure regulations further do not require disclosure for downhole operations other than hydraulic fracturing.[184] These two provisions create disclosure gaps that prevent the public and regulators from knowing what chemicals are actually being injected downhole to extract oil and gas.

a. The trade secret exemption creates huge disclosure and data gaps.

Under current New Mexico law, the oil and gas industry may use but does not have to disclose any chemical that it labels as a "trade secret."[185] Neither OCD nor any other regulatory body makes a "trade secret" determination.[186] This creates a huge gap in chemical disclosure, because as Mr. Horwitt testified, "between 2013 and 2022, oil and gas well operators disclosed the use of fracking chemicals in 9,066 oil and gas wells in New Mexico and claimed at least one fracking chemical as a trade secret in 8,293 of these wells – more than 90 percent – located across 11 counties."[187] This resulted in a total of 243 million pounds of undisclosed chemicals being used in fracking operations in New Mexico over a roughly 10-year period.[188] Under the status quo it is obvious that FracFocus does not provide full transparency around chemicals used by the oil and gas industry. OCD's witness Dr. Sandau acknowledged this fact when he testified

[183] 19.15.16.19(B)(1) and (2) NMAC.
[184] 19.15.16.19(B) NMAC.
[185] Powell, Tr. 11/14/2024 215:22-25 ("Who determines what is a proprietary chemical or not? The operator. Right? A: I believe that determination is determined by the chemical company, not the operator."); Powell Tr. 11/14/2024 255:9-17. ("MR. BLOOM: Yeah. This reminded me, I had one other question I forgot to ask. So FracFocus does not get the -- doesn't preserve the proprietary information, right. That's all -- if somebody claims it's proprietary, that company that applied is the only one that knows what it is? THE WITNESS: Correct. They don't receive it. All they receive is the information provided where it's marked proprietary on that submission.")
[186] *Id.*
[187] WG Ex. 10 9:4-6.
[188] WG Ex. 10 9:7-8.

that FracFocus disclosures provide "*some idea* of things that might have been used" but to get more information "the best way to do it is to measure."[189]

Enforcing a prohibition on PFAS requires a much higher degree of specificity, or targeted analysis, of fluids than a prohibition on undisclosed chemicals. In the absence of full chemical disclosure nontargeted testing methods would have to be used by regulators investigating incidents, researchers, and those seeking to baseline test domestic wells, among others will have to use nontargeted testing methods to identify chemicals used in downhole operations. As the testimony at the hearing showed, nontargeted testing is a complicated process that may or may not positively identify the presence of a chemical compound in any given sample.[190] In discussing the challenges of nontargeted analysis, Dr. Sandau described attempting to measure everything in a sample though nontargeted methods as a "holy grail."[191] Dr. Sandau explained this process during the hearing and stated that even after performing nontargeted testing multiple times "You still don't know what they are though . . . And you can't conclusively determine what they are . . . And we still don't have the capability to measure them to the accuracy that we may need."[192] Nontargeted methods also cannot precisely determine the quantity of an identified compound.[193]

Full disclosure is necessary to avoid the inherent problems and inaccuracies with nontargeted testing. Nontargeted analysis can tell us that something is there, but not necessarily what is there.[194] In contrast, when a researcher knows what to look for, compounds are easier to

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[189] Sandau, Tr. 11/13/2024 171:20-21 (emphasis added).
[190] Sandau, Tr. 11/13/2024 171:22-25;172:1-25; 173:1-23; 189:13-25; 190:1-6 (discussing the intricacies of the nontargeted testing process); *See also* Hansen Tr. 11/14/2024 161:22-25; 162:1-20.
[191] Sandau, Tr. 11/13/2024 149:11-25; 150:1-4.
[192] Sandau, Tr. 11/13/2024 174:8-25; 175:2-12.
[193] Sandau, Tr. 11/13/2024 175:13-25; 176:1.
[194] Sandau, Tr. 11/13/2024 177:16-24 ("If there's 50 things, we're not looking at those other ten; right? So we know what's in Sample A and Sample B based on targeted analysis, because we are measuring for

identify and can be quantified.[195] As Dr. Sandau explained, "you know, I do these chemistry things all the time . . . If we know what the source looks like, it's easier to find the source."[196]

Full disclosure would allow OCD to use these simpler and more accurate targeted testing methods when investigating a spill or a loss of mechanical integrity event. Adopting the proposed rule would allow OCD to actually know what to look for in investigations. The full disclosure requirement in the proposed rule would also provide researchers with the data needed to investigate toxicological effects of chemicals to perform a risk assessment. When asked about the ability to perform a risk assessment of a produced water spill in states with full disclosure like California and Colorado, OCD's toxicology witness Dr. Martin answered, "Scientists always want data, so if -- sure, if someone gives me more data, then that would probably make me happier."[197]

Dr. Hansen agreed that prohibiting undisclosed chemicals will further research efforts. Dr. Hansen relayed that 3M Company refused to disclose the identity of a chemical that researchers found to be ubiquitous in the blood of the US population in 1975.[198] 3M did not disclose the identity of that chemical until 2000 in the course of litigation.[199] As a result "25 years of scientific research was delayed because of 3M's unwillingness to share that confidential information."[200] Dr. Hansen concluded, "If researchers don't have the details about the chemicals that are being used, they can't effectively study them" and "full public disclosure would allow us

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those things and getting numbers for those 40 things. The non-targeted analysis, all it's going to tell us is that there's ten other things there. Q And we don't know what they are? A: We won't know what they are."); *See also* Hansen Tr. 11/14/2024 162:16-20; 162:21-24.

[195] Sandau, Tr. 11/13/2024 176:2-10 ("And so then, if we move to targeted testing methods, this would be a situation in which you know what you're looking for? A: Yes. You -- well, yeah. You would -- you would pick targets based on what you expect to find. Absolutely. Q And if you find what you expect to find, you could quantify it? A: Yes.").

[196] Sandau, Tr. 11/13/2024 178:23-25; 179:1-5.

[197] Martin, Tr. 11/13/2024 227:8-18.

[198] Hansen, 11/14/2024 169:17-25; 170:1-14.

[199] *Id.*

[200] Hansen, Tr. 11/14/2024 169:17-25; 170:1-14.

to start doing more science."[201] Dr. Spear also agreed that "More information would be helpful for people like me doing research . . . helpful for the government so they better understand how to regulate compounds."[202]

While safety data sheets ("SDS") associated with chemical products provide some information, they do not fill the trade secrets disclosure gap because the Occupational Health and Safety Administration's ("OSHA") SDS regulations also permit withholding of information claimed to be a trade secret.[203] Although OSHA's SDS regulations do permit health care providers to obtain some trade secret information after following a multi-step process,[204] in order to obtain this information, the provider must also sign a nondisclosure agreement.[205] In emergency situations, these regulations provide that health care providers can get access to proprietary information on an expedited basis, but the health care provider is still required to sign a nondisclosure agreement.[206] This means that no one can ever access this information except the healthcare provider *after* following a complicated process, and the provider cannot share the information with anyone including other medical professionals. Mr. Horwitt explained that these provisions are also insufficient for first responders:

> As Ms. Mulcahy said, there are some avenues for first responders to access trade secret information, which may not be available for certain wells; however, based on my conversation with a long-time first responder, time is of the essence in those situations, and having that data on hand would be very important so that a first responder would not have to contact a federal agency and perhaps wait some period of time to get that information.[207]

[201] Hansen, Tr. 11/14/2024 170:20-22; 171:6-7.
[202] Spear, Tr. 11/13/2024 110:21-25.
[203] 29 C.F.R. 1910.1200(i).
[204] 29 C.F.R. 1910.1200(i)(3).
[205] 29 C.F.R. 1910.1200(i)(3).
[206] 29 C.F.R. 1910.1200(i)(2).
[207] Horwitt, Tr. 11/12/2024 200:12-20.

Mr. Horwitt continued "And for people who are not first responders, it's also important to have the information as soon as possible so that people can make decisions about whether they want to ask for water testing for themselves or for their community, whether they want to confer with scientific experts to determine if certain chemicals do pose a risk that are being used nearby."[208]

Last, the SDS are insufficient for another reason; they can completely omit large portions of a chemical product's contents. In Mr. Horwitt's research, he found that "The safety data sheet could say something like, 'This product contains 5 percent methanol and 25 percent water,' and that's it, [] 75 percent of the ingredients could be missing."[209] Existing OCD regulations do not require disclosure beyond what is required by the SDS.[210] Therefore, full disclosure will require more information than what is required in SDS disclosures.

b. Existing law that limits disclosures to fracking operations, instead of all downhole operations, creates a huge chemical disclosure gap.

Current disclosure requirements only apply to fracturing operations.[211] However, PFAS and other chemical additives are used in other downhole operations, including drilling and maintenance. Therefore, the ban on PFAS use and the ban on undisclosed chemicals must apply to all downhole operations. To do otherwise would create a huge loophole in the prohibition on PFAS use and on reporting requirements.

Mr. Horwitt explained this loophole stating chemical additives are used "in other stages or methods of oil and gas production, like drilling that precedes fracking, chemical flooding, anything else."[212] Mr. Powell provided further examples of downhole operations stating that recompletions, treatment of a well, maintenance of a well, drilling, and enhanced oil recovery are

[208] Horwitt, Tr. 11/12/2024 200:21-25; 201:1-3.
[209] Horwitt, Tr. 11/12/2024 197:18-23.
[210] 19.15.16.19(B)(1) NMAC.
[211] 19.15.16.19(B) NMAC.
[212] Horwitt, Tr. 11/12/2024 197:3-8.

all "downhole operations."[213] Mr. Powell further testified that OCD supports applying the proposed ban on PFAS and undisclosed chemicals to all downhole operations.[214]

F. The Uniform Trade Secrets Act is not a barrier to adopting the proposed rule.

The proposed rule would prohibit undisclosed chemicals and present industry with a choice of voluntarily disclosing all chemicals used in downhole operations or not using those chemicals that it decides not to disclose.[215] When the holder of a trade secret voluntarily discloses the identity of a chemical, there is no trade secret issue. This is because the statutory definition of "trade secret" does not include anything that is voluntarily disclosed. To qualify as a trade secret under the UTSA, trade secrets must be "the subject of efforts that are reasonable under the circumstances to maintain its secrecy."[216] Anything that is voluntarily disclosed is not subject to efforts to maintain secrecy. Because the proposed rule provides industry with this choice, the proposed rule will not operate in a manner that is contrary to the Uniform Trade Secrets Act ("UTSA") NMSA 1978 57-3A-1 *et seq*.

While the proposed rule does not require disclosure of trade secrets, it also does not prevent a trade secret holder from voluntary disclosure. Mr. Powell agreed that the proposed rule does nothing to prevent voluntary disclosure.[217] If a trade secret holder will not disclose a trade secret, then operators simply cannot use that undisclosed chemical in New Mexico. Additionally,

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[213] Powell, Tr. 11/14/2024 221:20-25; 222:1-11; 258:4-19.
[214] Powell, Tr. 11/14/2024 49:1-7; 258:4-19.
[215] WG Ex. 1 First Amended Proposed Rule; *accord* WildEarth Guardians' Second Amended Proposed Rule enclosed as "Attachment A."
[216] NMSA § 1978 57-3A-(2)(D)(2).
[217] Powell, Tr. 11/14/2024 218:23-25; 219:2 ("Q: So I'll rephrase my question.There's nothing in the proposed rule that prohibits the holder of a trade secret from voluntarily disclosing that trade secret. A: Not that I'm aware of.")

like New Mexico, Colorado has also adopted the Uniform Trade Secrets Act ("UTSA").[218] In Colorado, the UTSA exists alongside the statute that bans PFAS and explicitly requires disclosure of any trade secret chemicals used in downhole operations.[219]

In response to questions from Commissioner Bloom, OCD acknowledged that under Guardians' proposal to prohibit undisclosed chemicals, FracFocus could handle information about chemicals disclosed by operators.[220] OCD witness Brandon Powell also confirmed that the voluntary disclosure provisions in the proposed rule would address OCD's administrative concerns and IPRA concerns, because voluntary disclosure "would be effective at eliminating the proprietary information" and disclosure to FracFocus would mean "there would be no data [for OCD] to hold."[221] Dr. Hansen added that the industry in Colorado is "already exposing all of their ingredients" so that "lower[s] the risk for anything that is truly of proprietary value to be released to competitors if simply a chemical profile is shared so that the chemicals can be monitored by community members."[222]

IV. Equity through transparency

Under the status quo, industry can inject and dispose of unlimited amounts of PFAS and undisclosed chemicals in downhole operations in New Mexico. This is more than just a risk to our scarce freshwater resources, and therefore public health and the environment. Lack of chemical transparency is also inequitable and unjust. Withholding critical health and safety information from medical professionals and first responders prevents them from safely and

[218] The UTSA is codified in New Mexico law at NMSA 1978 57-3A-1 *et seq*. and in Colorado law at CRSA § 7-74-101 *et seq*.
[219] The Colorado statute is labeled as WG Ex. 4 and is codified at C.R.S.A. § 34-60-132.
[220] Powell, Tr. 11/14/2024 Powell, 248:10-15 ("MR. BLOOM: Okay. But again, if we banned or not permit this exemption for proprietary information, we wouldn't have that issue at all. Right? FracFocus could continue to handle – THE WITNESS: It can continue in that format[.]")
[221] Powell, Tr. 11/14/2024 229:10-25; 230:1-2.
[222] Hansen, Tr. 11/14/2024 204:17-25; 205:1-12.

adequately doing their jobs. Withholding this information from the public prevents families from protecting their own interests. It creates a shield for industry while creating and increasing unknowable risks to people and the environment.

Using chemicals like PFAS in oilfield communities means these communities are more likely to experience exposure than others and therefore have a greater need to access information about those chemicals to protect themselves and others. Withholding access to chemical safety information impacts the people in Eddy County far more than the people in Santa Fe. This makes keeping chemicals hidden from the public inequitable, disproportionately impacting some people more than others.

Considering the known human health impacts from PFAS alone, we need to greatly increase chemical transparency. By adopting Guardians' proposed rule, the Commission thereby also creates equity through accessibility.

1. Trade secrets are not more important than public health.

The oil and gas industry argues that requiring full chemical disclosure infringes upon proprietary rights. We contend that prioritizing the rights of corporations over the rights of all New Mexicans is a far more detrimental and inequitable infringement. The oil and gas industry's claims of competitive harm do not trump public health and environmental safety. Furthermore, preventing costly contamination of New Mexico's water resources and responding to potential chemical exposure risks, in real time, outweighs any purported economic concerns, particularly unsubstantiated ones. Indeed, Colorado and California have already enacted such public disclosure requirements, and their oil and gas industries have continued to operate profitably under these heightened standards.[223]

[223] NEE's Exhibit A, Direct Testimony of Kristen Hansen, Ph.D., at 13-14 and Exhibit KH-3; Rulemaking 23580, TR., 11/14/2024, Hansen at 204-205.

Joint Proponents respectfully request that the Commission recognize that the ability of New Mexico communities to protect themselves from toxic exposure should not be compromised for the benefit of corporate secrecy. The public has an indisputable right to know what chemicals they are being exposed to so they and their representatives in the New Mexico Legislature and on this Commission can identify risks and verify the safety of the resources essential to their health and well-being.

2. Public accessibility is necessary to build trust and reduce harm.

Public accessibility to chemical disclosures increases trust in regulators. As Dr. Brown explained, "[I]f you don't tell somebody that something[']s toxic or something is there, and you know it, and they find out that you didn't tell it to them, you [] cease becoming a trusted source. And once you cease to become a public trusted source, the public health community and the government overall loses its ability to protect the population, because [people] just don't believe you . . . They think you lie."[224]

In contrast, NMOGA witness Dr. Anderson argued that full chemical disclosure and public availability would lead to "chemophobia."[225] This argument is meritless. As Dr. Brown pointed out in his rebuttal testimony, the chemophobia paper[226] is not scientific; it's a position paper.[227] Dr. Brown explained that "phobias are clinically known as anxiety disorders", and "'chemophobia' is more properly viewed as a label than an actual medical condition as asserted in the report from the American Council on Science and Health."[228] He then refuted the argument "that chemical information should be withheld from exposed communities for their own

[224] Brown, Tr. 11/12/2024 257:21-24; 258:1-5.
[225] NMOGA Ex. E at 14.
[226] NMOGA Ex. E-24.
[227] WG Ex. 97 2:3-6.
[228] WG Ex. 97 2:3-6.

protection from the 'phobia'" because "[i]n reality, withholding information about potential risk annihilates any opportunity to address actual health conditions."[229]

During cross-examination, Dr. Anderson agreed that the chemophobia paper entitled "Scared to Death" is a position paper.[230] When asked whether the nongovernmental organization that published it, the American Council on Health and Science "is a pro industry advocacy group" Dr. Anderson replied, "I actually don't know anything about them" despite relying on this report for a significant portion of her direct testimony.[231] Dr. Anderson also admitted that no one has ever been clinically diagnosed and treated for chemophobia in the United States.[232] When asked whether the existing partial disclosures in New Mexico, or the full disclosures in California and Colorado, were causing chemophobia, Dr. Anderson answered that she did not know and she "has not looked into it."[233]

Dr. Anderson's citation to the Flint, Michigan water crisis as an example of "chemophobia" also completely misses the point of why public disclosure and notification are so important. Dr. Anderson stated in her direct that people in Flint experienced symptoms of depression and post-traumatic stress "regardless of actual lead exposure concentrations."[234] However, as Dr. Brown explained, "In Flint, the government covered up the problem of lead exposure in children from drinking water which led to higher exposures" and concluded "disclosure leads to trust" and "half-truths lead to skepticism."[235]

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[229] WG Ex. 97 2:8-13.
[230] Anderson, Tr. 11/14/2024 154:12-15.
[231] Anderson, Tr. 11/14/2024 154:16-20.
[232] Anderson, Tr. 11/14/2024 151:25; 152:1-25.
[233] Anderson, Tr. 11/14/2024 153:1-25.
[234] NMOGA Ex. E at 16.
[235] WG Ex. 97 2:15-18.

V. Conclusion

The OCD acknowledges that this Honorable Commission has the authority to adopt the proposed regulatory changes, NMOGA admits that prohibiting PFAS won't hurt the industry, and the evidence demonstrates that these are necessary and reasonable amendments.

As Commissioner Ampomah pointed out, without full chemical disclosure in all downhole operations, OCD's version of this proposed rule would "focus[] on the detection and not necessarily the prevention"[236] of hazards, but detection alone is inadequate to meet the challenge at hand – equitable accessibility to chemical health and safety data for whomever needs it, whenever it's needed.

Joint Proponents ask that you approve their proposed rule, which is enclosed as "Attachment A", to prevent unnecessary harm by increasing transparency in order to protect public health and the environment.

Respectfully submitted February 19, 2025,

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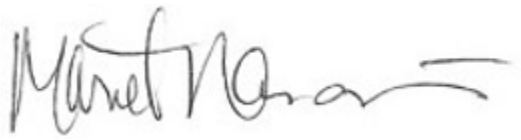
[236] Powell, Tr. 11/14/2024 266:7-8.

NEW ENERGY ECONOMY



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