

STATE OF NEW MEXICO
BEFORE THE OIL CONSERVATION COMMISSION

In the matter of the proposed amendments
to NMAC §§19.15.29.6, 19.15.29.8 and
19.15.29.15 of the New Mexico Oil
Conservation Commission Rules

No. 21834

NOTICE OF INTENT
TO PRESENT NON-TECHNICAL AND TECHNICAL TESTIMONY
OF THE RIO GRANDE CHAPTER OF THE SIERRA CLUB,
THE PUEBLO ACTION ALLIANCE,
CITIZENS CARING FOR THE FUTURE,
THE NATIVE AMERICAN VOTERS ALLIANCE EDUCATION PROJECT,
AND AMIGOS BRAVOS

Introduction

The Rio Grande Chapter of the Sierra Club, the Pueblo Action Alliance, Citizens Caring for the Future, the Native American Voters Alliance Education Project, and Amigos Bravos hereby give notice that they will present both non-technical and technical testimony at the hearing in this matter scheduled for June 9, 2021 before the New Mexico Oil Conservation Commission (“the Commission”). This Notice of Intent to Present Non-Technical and Technical Testimony (“Notice of Intent”) addresses four subjects.

First, this Notice of Intent explains that the Rio Grande Chapter of the Sierra Club, the Pueblo Action Alliance, Citizens Caring for the Future, the Native American Voter Alliance Educational Project, and Amigos Bravos (collectively “the Intervenors”) support the Petition to Amend NMAC §§19.15.29.6, 19.15.29.8, and 19.15.29.15 of the Commission’s Rules and request for Hearing filed in this matter (“the Petition”) that was filed by WildEarth Guardians and the Oil Conservation Division of the New Mexico Energy, Minerals, and Natural Resources Department (“the Division”).

Second, this Notice of Intent outlines generally the additional issues in this proceeding that are of concern to the Intervenors.

Third, this Notice of Intent identifies the witnesses who will present non-technical and technical testimony for the Intervenors at the hearing on June 9, 2021, and provides for each witness a summary of the subjects that the witness will address and an estimate of the time that the witness's direct testimony will take. This Notice of Intent also provides a statement of the qualifications and a resume for each witness who will present technical testimony.

Fourth, this Notice of Intent provides (in Exhibit 1) the changes that the Intervenors advocate to the language that is proposed by the Petition.

I. The Intervenors have significant interests in this proceeding.

A. The Sierra Club

The Rio Grande Chapter of the Sierra Club ("the Sierra Club") is a volunteer-led organization representing more than 35,000 members and supporters in New Mexico and West Texas. The mission of the Sierra Club is to explore, enjoy and protect the planet, and the Rio Grande Chapter of the Sierra Club prioritizes protecting the climate, air, water, wildlife and public lands in New Mexico and West Texas. Because of these interests, particularly the Sierra Club's interest in protecting New Mexico's precious water resources, the Sierra Club has a significant interest in this proceeding.

B. The Pueblo Action Alliance

The Pueblo Action Alliance is a community driven organization that promotes cultural sustainability and community defense by addressing environmental and social impacts in Indigenous communities. The Pueblo Action Alliance is interested in this proceeding because of

the impacts of the oil and gas industry and of releases of oil, gas, and oil and gas wastes on Indigenous communities, and is participating in this proceeding in order to reduce those impacts.

C. Citizens Caring for the Future.

Citizens Caring for the Future is a group of engaged residents of the Permian Basin in southeastern New Mexico that seeks to find an informed and safe path to ensure protections for their community in the face of the health, safety and environmental dangers posed by rapid oil and gas development in that area.

D. The Native American Voter Alliance Educational Project

The Native American Voter Alliance Educational Project's ("NAVAEP's") mission is to unite community stakeholders to actively improve the quality of life for Native American communities and protect the continuity of Native American cultures. NAVAEP promotes awareness and action on issues facing Native American communities through community organizing and education strategies. NAVAEP is committed to social, economic and environmental justice principles that advance healthy and sustainable communities for Native families living in New Mexico.

NAVAEP is participating in this proceeding because of the impacts that the oil and gas industry and releases of oil and gas and oil and gas wastes have had on Native families in New Mexico. NAVAEP's purpose in this proceeding is to diminish the impacts on Native American communities of the oil and gas industry and the releases of oil and gas and oil and gas wastes.

D. Amigos Bravos

Amigos Bravos is a statewide water conservation organization (based in Taos, NM) guided by social justice principles and dedicated to preserving and restoring the ecological and cultural integrity of New Mexico's water and the communities that depend on it. While rooted in

science and the law, Amigos Bravos's work is inspired by the values and traditional knowledge of New Mexico's diverse Hispanic and Native American land-based populations, with whom Amigos Bravos collaborates.

Amigos Bravos is interested in this proceeding because of the impacts that the oil and gas industry in general, and releases of oil and gas and oil and gas wastes in particular, have on New Mexico's water resources. Amigos Bravos's goals in this proceeding are to protect New Mexico's water resources and to reduce the impacts of the oil and gas industry and releases of oil and gas and oil and gas wastes on those resources.

II. The Intervenors will present six witnesses in this proceeding.

A. The Sierra Club will present Camilla Feibelman as a non-technical witness.

Camilla Feibelman is the Director of the Rio Grande Chapter of the Sierra Club, a position she has held since May of 2013. The following is a brief summary of Ms. Feibelman's qualifications.

Ms. Feibelman has a masters degree in planning from the University of Puerto Rico and an undergraduate degree in environmental biology from the University of Columbia in New York City. She received a Fulbright Scholarship to study in Peru. She serves as a Trustee of the Udall Foundation and was nominated for the position by President Barack Obama and was confirmed by the U.S. Senate. Ms Feibelman has been employed by the Sierra Club since 2000 and has had various positions and participated in a multitude of technical rulemakings on the topics of environmental quality and protection.

Ms. Feibelman will address three subjects in her testimony. In the first place, Ms. Feibelman will explain why the Sierra Club is interested in this proceeding. She will point out that protection of the environment, particularly ground water and surface water resources are

priorities for the Sierra Club. Ms. Fiebelman also will explain that effective regulation of the oil and gas industry, and addressing the impacts of that industry on people and the environment, are particularly high priorities for the Sierra Club. In addition, Ms. Fiebelman will point out that the rule changes proposed by WildEarth Guardians and the Division would prohibit releases of oil and gas and oil and gas wastes (referred to collectively as “releases”), thereby addressing one source of the oil and gas industry’s impacts on people and the environment.

In the second place, Ms. Fiebelman will testify that the Sierra Club supports the change to the Commission rules proposed by WildEarth Guardians and the Division. She will explain that the current Commission Rules do not actually prohibit releases of oil and gas or oil and gas wastes, and that from the Sierra Club’s point of view that is a serious problem with the Rules.

In the third place, Ms. Fiebelman will explain that the amendments to the rule changes advocated by WildEarth Guardians and the Division proposed by the Sierra Club, the Pueblo Action Alliance, Citizens Caring for the Future, the Native American Voters Alliance Educational Project, and Amigos Bravos (which are shown in Exhibit 1) would strengthen those rule changes in the following three ways:

- The proposed amendments would require, as part of the immediate response, that the party that is responsible for a release collect samples for laboratory analysis of the source of the release prior to disposal;
- The proposed amendments would require prompt notification to people in the area surrounding a release so that they may take appropriate measures to protect themselves and their property from the effects of the release; and
- The proposed amendments would create a rebuttable presumption that a release creates either a risk to the health or safety of the public or a risk of causing significant

environmental harm, thereby shifting the burden of proving how serious a release is from the under-resourced Division to the party responsible for the release.

The Sierra Club anticipates that Ms. Feibelman's direct testimony will take approximately one hour.

B. The Pueblo Action Alliance will present Julia Bernal as a non-technical witness.

The Pueblo Action Alliance's witness will be Julia Bernal, who will provide non-technical testimony. Ms. Bernal will testify that she is the current Director of the Pueblo Action Alliance ("the Alliance"), a position that she has held for the past five years. She also will state that she has had previous experience in the water resources sector as a technician, data collector, educator, and now as a graduate student at the University of New Mexico.

Ms. Bernal will explain as well that the Alliance is a community organization that addresses environmental and social injustices that occur on Ancestral Indigenous lands. She will also explain that the Alliance is a women and youth led organization addressing issues like the impacts of the fossil fuel industry, the effects of federal fossil fuel leasing programs, climate adaptation and mitigation, as well as the economic impacts that extractive industries have on Indigenous populations' cultural integrity. More specifically, the Alliance has been providing its expertise and grassroots experience to the Frack off Chaco Coalition that addresses the federal fossil fuel leasing programs in the San Juan Basin, otherwise known as the Greater Chaco Region, which has significant spiritual and cultural importance to the 20 Pueblo sovereign nations in the Southwest. Ms. Bernal also will point out that as Indigenous people to the New Mexico landscape, Pueblo people hold their ancestral homelands as the number one priority in terms of protection and stewardship.

Ms. Bernal will also discuss the need for the oil and gas industry to be held accountable for releases of oil and gas and oil and gas wastes because those releases can be extremely harmful to the environment, ecosystems, clean water, and public health. For that reason, she will explain that the Alliance supports the petition filed by WildEarth Guardians and the Division because it would prohibit such releases. Ms. Bernal will explain as well that the Alliance supports the amendments to the proposals in that petition outlined in attached Exhibit 1, particularly the amendment requiring notification to people and institutions surrounding a release.

The Alliance anticipates that Ms. Bernal's direct testimony will take one half hour.

C. Citizens Caring for the Future will present Kayley Shoup as a non-technical witness.

Kayley Shoup will testify that she is a community organizer with Citizens Caring for the Future in Southeast, New Mexico. She will explain that Citizens Caring for the Future is a group of engaged citizens in the Permian Basin that seeks to find an informed and safe path to ensure protections for our community in the face of the health, safety and environmental dangers posed by rapid oil and gas development in Southeastern New Mexico.

Ms. Shoup will provide testimony about her background and how she became involved in issues relating to the oil and gas industry. She was born & raised in Carlsbad, and is now serving as an organizer because of the destruction in her community that she has witnessed for the past three years. The issues of produced water and oil field waste are ones that are near and dear to her heart because they have been her entry point to her current work.

Specifically, in late 2019 she began to learn about the industry that was surrounding and inundating her home. Her mother, at age 50, had just been diagnosed with Stage III ovarian cancer and before that diagnosis she had been watching a very close friend deal with a Stage IV

testicular cancer diagnosis at only twenty four years old. These were the people closest to her, but since moving back to Carlsbad in 2018 she had heard of many relatively young people dealing with rare and aggressive cancers. It got to the point where she began to suspect that their environment was harming them, and so she began the process of educating herself.

At this time, the Produced Water Act, HB-546, had just passed and the New Mexico Environment Department (“NMED”) and the Division were holding meetings to provide stakeholders with information on produced water and the upcoming rulemaking process. She attended the meeting in Carlsbad right after returning from Houston where her mother had just undergone surgery at MD Anderson. To say the experience was harrowing would be an understatement. What stuck with her though was a family that was there that evening. It was a school night and they had hauled their school aged children to this meeting to voice their concerns. Both parents bravely stood up and stated that they had produced water dumped on their land. They then explained that they had called the cops when it happened because they did not know what else to do. Law enforcement was unable to help. They had also contacted the NMED to no avail. That evening she watched as they were dismissed yet again. They were told by the NMED that there was no form of recourse to be taken, and then to add insult to injury they had to watch as their own representatives praised an industry that was and is actively harming their constituents. That meeting was an eye opening and life changing moment for her. She did not know how she would be able to help, but she knew that families in her community were being harmed and that they had very few places to turn for help.

A year after that meeting she was introduced to Penny & Dee Aucoin, two of the most amazing advocates she has ever met. Days before meeting them she had read their story of having a produced water spill on their land. She learned of the illness, death, and devastation

their family faced because of the spill. She then learned of the work they were doing to raise awareness of the dangers of produced water, and she was also made aware of the wonderful group they were working with called Citizens Caring for the Future. For a year she thought she was alone in her fear of what oil & gas production was doing to the health of her community, but then she met Penny and Dee and found out how wrong she was. She was actually surrounded by incredible human beings that were advocating for our community, and just like that she had found a home again.

Citizens Caring for the Future is intervening in this proceeding along with the Sierra Club, the Pueblo Action Alliance, NAVAEP, and Amigos Bravos because members of Citizens Caring for the Future have seen first hand how releases of produced water and other oil field fluids can quite literally change a life. Residents of frontline communities such as hers deserve timely notification if they are affected by a release. Produced water is a clear public health threat, and timely notification of a release can be the difference between major health effects and minor health effects.

In addition, Ms. Shoup will point out that source characterization is also very important because often after a release affected parties are left to their own devices when it comes to responding to it. Produced water is often toxic, radioactive, and extremely dangerous, which means that a release would be managed by trained parties that know what risk it poses.

Last, but not least, Ms. Shoup will testify that regulations should be adopted requiring accurate data about releases and meaningful measures to prevent releases. She will state that residents of the Permian Basin understand the sheer volume of production in the area, and know that the Division does not have the capacity to assess the impacts of the majority of releases. For that reason it is appropriate for the Commission to adopt regulations that shift the burden to oil

and gas companies to prove that specific releases are not threats thereby lessening the enormous workload of the Division.

She will commend WildEarth Guardians and the Division for proposing amendments to the existing rules that would prohibit releases of oil and gas and oil and gas wastes, but in her opinion those amendments do not go far enough. Regulations are needed to require sampling of releases to determine the composition of fluids that are released; to provide for notification of people in areas affected by releases; and to put the burden on industry to demonstrate that releases are not a threat to public health or will not cause significant environmental harm.

Ms. Shoup will testify that the changes to the Commission regulations proposed by WildEarth Guardians and the Division and by the intervenors will help to reach regulatory objectives that will protect all people in the Permian Basin.

Ms. Shoup's direct testimony is estimated to last one half hour.

D. Joseph Hernandez will testify as a non-technical witness for NAVAEP.

Joseph Hernandez will testify as a non-technical witness for NAVAEP. He will introduce himself in his traditional manner. Mr. Hernandez will explain that he is 33 years old and from the community of To'Koi, New Mexico, which is 7 miles west of Shiprock, New Mexico. He will explain that he is of the Zia Pueblo People Clan, born for Mexican. He will also state that his maternal grandfather is from Salt People Clan, and his paternal grandfather is Mexican.

Mr. Hernandez also will testify that he is the Dine' Energy Organizer for the NAVA Education Project, and that he has been working in that position since July 2019, focusing on Chapter House communities located in the four corners region. He will state that the focus of his work has been to engage Navajo communities effectively in renewable energy advocacy.

With respect to this specific proceeding, Mr. Hernandez will explain that the issue of releases of oil and gas and oil and gas wastes is important to him because he and his family hold allotments in the Eastern Agency of the Navajo Nation near Nageezi, New Mexico, and that he has witnessed the impacts of resource extraction. As an example, he will point out that in June of 2019 he came across an accident on highway 550 in June of 2019 involving a vehicle and a large industrial tanker truck carrying hazardous oil and gas wastewater. He will state that with heavy industrial traffic on tribal lands these types of accidents and spills are not uncommon, and that they can threaten the health and water supplies of tribal communities. Mr. Hernandez also will testify that during a Navajo Nation Council Naabik'iyati' Committee meeting in January of 2020 he heard about some of the high profile spills that occurred on the Navajo Nation in 2018 and 2019.

Mr. Hernandez will testify as well that a major 55,000 gallon spill by Enduring Resources of combined crude oil and produced water occurred on February 28, 2019 within Counselor Chapter in a tributary to Escavada Wash that leads into Chaco National Monument, and that the spill threatened to contaminate the Tribe' shallow groundwater.

For these reasons, NAVAEP supports the joint petition filed by WildEarth Guardians and the Division that would make releases of oil field wastes prohibited, but NAVAEP believes that there need to be additional protections and notifications in the rule. Mr. Hernandez will point out that the community and nearby landowners should have been notified when the Enduring Resources spill occurred so that they could protect themselves and their land, but they were not notified, leaving them vulnerable to exposure. He will state that NAVAEP supports the Intervenor's proposed amendments to the Commission rules because they will require prompt notification of residents, landowners and institutions with 1,000 feet of a release of oil and gas

wastes that could impact their health, land, and sparse water resources. NAVAEP also supports the proposal to require the collection of samples of the source of the release for chemical analysis as one of the immediate actions when a spill occurs, and to provide data and reports to landowners and surrounding residents.

In conclusion, Mr. Hernandez will point out that all of the amendments to the Release Rule proposed by the Intervenors will help keep homes and communities safe from unnecessary exposure to toxic releases of oil field related spills and contamination of lands and sacred sites. He will explain that as the community works to transition away from fossil fuel extraction, this begins the healing process for our Mother Earth.

NAVAEP anticipates that Mr. Hernandez's direct testimony will last one half an hour.

E. Amigos Bravos will present Joseph Zupan

Joseph Zupan will testify as a non-technical and as a technical witness for Amigos Bravos. As is indicated by his resume (Exhibit 2), Mr. Zupan is currently the Executive Director of Amigos Bravos, a position he has held for five years. Mr. Zupan will provide a brief summary of his background, which has included extensive experience with cleanup and remediation of oilfield wastes. He has been a consultant to industry, including oil and gas exploration companies, and his work included ensuring compliance with environmental regulations, using approaches such as risk-based corrective action, to remediate contaminated sites. Mr. Zupan also was a member of the Texas Risk Reduction Program technical guidance committee which worked to prepare detailed guidance documents for remediation of ground water and surface water. During his career, Mr. Zupan has been a registered engineer in several states, and he is currently a registered engineer in New Mexico and Colorado.

Mr. Zupan will explain that Amigos Bravos' mission is to protect and restore New Mexico's waters. Mr. Zupan will also point out that Amigos Bravos views the mismanagement of the oil and gas industry, and of releases of oil and gas and oil and gas wastes, pose a serious threat to the waters of New Mexico. He also will explain that Amigos Bravos supports the petition filed by WildEarth Guardians and the Division because it would provide, for the first time, that releases of oil and gas and oil and gas wastes are prohibited, which would be a major step toward the effective regulation of the oil and gas industry and the protection of New Mexico's water resources from impacts of that industry.

Finally, Mr. Zupan will explain that Amigos Bravos supports the three amendments (shown in Exhibit 1) to the Commission rule changes proposed by WildEarth Guardians and the Division. He will point out that those three amendments will improve protection for New Mexico's water resources and for its residents from impacts of the oil and gas industry and oil and gas wastes.

Amigos Bravos anticipates that Mr. Zupan's direct testimony will last an hour.

F. The Intervenors will present Norman Gaume as a technical witness.

Norman Gaume will be presented as a technical witness by the Intervenors. As is indicated by his resume, which is attached as Exhibit 3, Mr. Gaume has an extensive history of work on water issues in New Mexico. He is a retired licensed professional water engineer. All of his 37 years of professional employment in New Mexico required a license as a professional water engineer. He has extensive management and engineering experience in water and wastewater systems, and in water resources planning and administration. He has studied produced water facts and issues through his compilations and analyses of Division public data

and his participation as a former member of the New Mexico Produced Water Research Consortium Technical Steering Committee.

In his technical testimony, Mr. Gaume will provide evidence that supports the proposed rule amendments proposed by WildEarth Guardians and the Division. That testimony is based on his compilation and analysis of Division public data pertaining to releases that demonstrate the unacceptable status quo. He will demonstrate with his compilation of Division posted data that prevention of releases is highly variable and depends on voluntary actions which some operators take and others do not. He will critique the quality of Division public data and recommend that the Division comply with the implementation standards of the Water Data Act of 2019. He will support additional proposed amendments to the Division Release Rule (19.14.29 NMAC) that are within the scope of this rulemaking and identify additional rulemaking topics needed to stop unauthorized releases of liquid oil field wastes and oil and gas products and materials. He will also critique the Division's lack of enforcement as demonstrated by the Division's October 1, 2020 statutorily required report to the New Mexico Legislative Water and Natural Resources Committee.

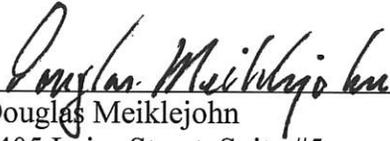
Mr. Gaume's prefiled written technical testimony is attached as Exhibit 4. The Intervenor anticipates that Mr. Gaume's testimony will take approximately an hour.

Conclusion

On the basis of the testimony of these witnesses, the Intervenor requests that the Commission adopt the changes (shown in Exhibit 1) that the Intervenor has advocated to the Petition filed by WildEarth Guardians and the Division.

Dated: May 26, 2021.

NEW MEXICO
ENVIRONMENTAL LAW CENTER



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Certificate of Service

I certify that on May 26, 2021, copies of this Notice of Intent were sent by electronic mail

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Douglas Meiklejohn

Case No. 21834: Application of Wild Earth Guardians (WEG) and New Mexico Oil Conservation Division (OCD) to Amend the Oil Conservation Commission's Rules for Releases

Proposed Amendments of Intervenors: Rio Grande Chapter of the Sierra Club, the Pueblo Action Alliance, Citizens Caring for the Future, the Native American Voters Alliance Education Project, and Amigos Bravos to: New Mexico Oil Conservation Commission

Color code:

Black type is existing rule

Underline and strikethrough black type is WEG/OCD agreed petition changes to existing rule

Underline red type or strikethrough is Sierra Club et al change proposed in intervention

Blue type is unchanged language from existing rules not included in WEG/OCD petition

**TITLE 19 NATURAL RESOURCES AND WILDLIFE
CHAPTER 15 OIL AND GAS
PART 29 RELEASES**

19.15.29.6 OBJECTIVE: To prohibit releases and require persons who operate or control the release or the location of the release to report the unauthorized release of oil, gases, produced water, condensate or oil field waste including regulated NORM or other oil field related chemicals, contaminants or mixtures of those chemicals or contaminants that occur during drilling, producing, storing, disposing, injecting, transporting, servicing or processing; and to establish procedures for reporting, site assessment, remediation, closure, variance and enforcement [~~procedures~~].

19.15.29.8 RELEASES:

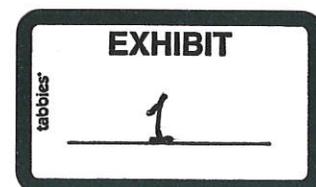
A. Prohibition. Major releases and minor releases are prohibited.

[A] B. Requirements. For all releases regardless of volume, the responsible party shall comply with 19.15.29.8 NMAC and shall remediate the release. For major and minor releases, the responsible party shall also comply with 19.15.29.9, 19.15.29.10, 19.15.29.11, 19.15.29.12 and 19.15.29.13 NMAC.

[B] C. Initial response. The responsible party must take the following immediate actions unless the actions could create a safety hazard that would result in injury.

(1) **Source elimination and site security.** The responsible party must take appropriate measures to stop the source of the release and limit access to the site as necessary to protect human health and the environment.

(2) **Source Characterization.** The responsible party shall collect samples of the source of the release for laboratory analysis based on the type of release for the constituents in Table I of 19.15.29.12 NMAC, total dissolved solids (TDS), and as required by Subsection A



of 19.15.29.11 NMAC, and document the release source and affected area with photographs for submittal to OCD with form C-141.

(3)(2) Containment. Once the site is secure, the responsible party must contain the materials released by construction of berms or dikes, the use of absorbent pads or other containment actions to limit the area affected by the release and prevent potential fresh water contaminants from migrating to watercourses or areas that could pose a threat to public health and environment. The responsible party must monitor the containment to ensure that it is effectively containing the material and not being degraded by weather or onsite activity.

(4)(3) Site Stabilization. After containment, the responsible party must recover any free liquids and recoverable materials that can be physically removed from the surface within the containment area. The responsible party must deliver material removed from the site to a division-approved facility.

(5)(4) Remediation. The responsible party may commence remediation immediately.

19.15.29.10 RELEASE NOTIFICATION REPORTING REQUIREMENTS: The responsible party must notify the division of releases in 19.15.29.9 NMAC as follows.

A. Reporting a major or minor release.

(1) The responsible party must notify the division's environmental bureau chief and the appropriate division district office verbally ~~or and in writing by email~~ within 24 hours of discovery of the release. The responsible party must provide notification within 24 hours of the release to any land owners, residences, institutions, and businesses within 1,000 feet distance of the point of release and area impacted by the release. These notifications must provide the information required on form C-141.

(2) The responsible party must also notify the appropriate division district office in writing within ~~five~~ 15 days of discovering the release by completing and filing form C-141. The written notification must verify the prior ~~verbal or e-mail~~ written notification and include additions or corrections to the information contained in the prior ~~verbal or e-mail~~ written notification.

(3) The responsible party must notify owners and occupants of any land, residence, institution, or business within one half mile (2640 feet) of the point of the release and the area impacted by the release by providing them a copy of the form C-141 within seven days of discovering the release. The responsible party shall provide written notification to the division listing all parties and their respective addresses that have been provided copies of the form C-141.

(4) Within 7 days of approval of completion of all compliance requirements, the responsible party must notify owners and occupants of any land, residence, institution, or business within one half mile (2640 feet) of the point of the release and the area impacted by the release by providing them a copy of the final form C-141. The responsible party shall provide

written notification to the division listing all parties and their respective addresses that have been provided copies of the final form C-141.

(5) Within 7 days of receiving a form C-141, the division shall post the form including all information about the release on the division website. Any information, data, and reports produced and submitted pursuant to 19.15.29 shall be posted on the division website.

~~**B. Reporting a minor release.** The responsible party must notify the appropriate division district office in writing within 15 days of discovery of the release by completing and filing form C-141.~~

19.15.29.15 ENFORCEMENT

A. The responsible party must comply with all the requirements of 19.15.29 NMAC. The division may take enforcement action pursuant to 19.15.5.10 NMAC against any responsible party who does not comply with 19.15.29 NMAC [~~pursuant to 19.15.5.10 NMAC~~].

B. There shall be a rebuttable presumption that a violation of 19.15.29 NMAC presents either a risk to the health or safety of the public or a risk of causing significant environmental harm, pursuant to NMSA 70-2-31 (D).

~~[B]~~C. A responsible party may enter [~~an agreed compliance order~~] a stipulated final order with the division for any violation of 19.15.29 NMAC.

~~[C]~~D. The director or the director's designee may deny any application or permit, including but not limited to, a permit to drill, deepen or plug back a well if the responsible party is not in compliance with a court order [~~, agreed compliance order or administrative compliance order~~] or final order arising from a violation of 19.15.29 NMAC.

~~[D]~~E. ~~— If the division or other party files an administrative enforcement application, the provisions of 19.15.4 NMAC apply to the enforcement proceeding, unless altered or amended by 19.15.5.10 NMAC or 19.15.29 NMAC.~~

Joseph A. Zupan

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EDUCATION

Colorado School of Mines

May 1979

B.S. Chemical Engineering

EXPERIENCE

Executive Director | Amigos Bravos, Inc.

January 2016 - present Responsible for overall direction and management of a five-person non-profit organization dedicated to watershed protection in New Mexico. Oversight extends to fundraising, project quality and execution, staff management, financial management, and promotion of the organization's mission.

President | Zephyr Environmental Corporation

March 2003 – December 2015 Responsible for overall direction and management of a 75-person environmental, health and safety consulting firm. Oversight extends to business development, project quality and execution, staff management, financial management, and promotion of the Zephyr "brand".

Sr. Project Manager | Zephyr Environmental Corporation

September 1997 – March 2003 Responsible for business development, project management, and client service for firm's key clients. Actively



participated in professional associations, including presentations at technical symposia. Served on the firm's Board of Directors for three years during this period.

Project Manager | International Technology Corporation

1990 - 1997 Responsible for business development, project management, and client service. Actively participated in professional associations, including presentations at technical symposia.

Engineer | City of Austin / Austin Fire Department 1988 - 1990

Engineer in the Austin HazMat Engineering section. My role was to ensure community safety by enforcement of Austin's Hazardous Materials Storage ordinance. I responded with Austin Fire Department during "HazMat" responses potentially involving hazardous materials to ensure community and firefighter safety and protection of the environment.

Engineer | Dow Chemical Corporation 1979 -1986 Field engineer responsible for implementation and optimization of company's patented processes at company and client facilities. Included supervision of equipment operators and chemists.

PROFESSIONAL REGISTRATIONS

Registered Professional Engineer (P.E., environmental specialty) in New Mexico and Colorado. Licensure entails an implicit guarantee that public welfare and environmental protection will be paramount considerations in any work products that bear my seal.

Norman Gaume, P.E. (ret.)

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RESUME

Professional Experience

Water, Environment, and Good Government Advocate, 2014 to date.

Activist to Protect the Gila River; for New Mexico water resources and environmental stewardship; and for competent, transparent, honest, and forward-looking science-based governance of New Mexico water resources and our environment by State and local governments.

Water Resources and Water Utility Consulting Engineer, 2003 to 2014. Sole practitioner consultant providing professional services related to water resources policy, planning and administration and water utility management. Clients included the City of Santa Fe, the Buckman Direct Diversion Board, Think New Mexico, the New Mexico Attorney General, the New Mexico State Engineer, the New Mexico Interstate Stream Commission, New Mexico State University, the Gila Conservation Coalition, the New Mexico Wildlife Federation, and outside counsel and professional services contractors for the Albuquerque/Bernalillo County Water Utility Authority, the New Mexico State Engineer, and the New Mexico Interstate Stream Commission.

Consulting services provided included strategic planning facilitation, policy analysis and development, project management, project engineering support, management consulting, staff development, data and modeling analysis and interpretation, support of clients' compliance with federal environmental law, and providing consulting expert and expert witness services pertaining to water resources and water utility litigation.

Director, New Mexico Interstate Stream Commission, 1997 through 2002. Managed the programs, staff, and budget resources of the New Mexico Interstate Stream Commission. Obtained approval for and implemented major new professional staff and budget resources and programs. Served as Engineer-Adviser to New Mexico's Rio Grande Compact Commissioner and advised the State Engineer. Led the collaborative development with stakeholders of a permanent solution authorized in state law to the Pecos River Compact compliance mandates of the US Supreme Court 1987 Amended Decree. This solution was implemented at substantial state effort and cost. It succeeded as projected.

Director, Water Resources Division, City of Albuquerque, 1992-1997. Managed the Water Resources Division from its creation in 1992. Led the planning and implementation of a major scientific program of water resources investigations of the groundwater resources of the Albuquerque Basin. Led the development of the Albuquerque Water Resources Management Strategy, a comprehensive and sustainable water resources solution for Albuquerque, including government approvals with rate increases to fund it. This strategy has been successfully implemented at very substantial public cost.

Consulting Engineer, retired

EXHIBIT

3

Water Resources Planning and Management

Co-managed with a Bernalillo County counterpart, the development, adoption, and initial implementation of the Albuquerque/Bernalillo County Groundwater Protection Policy and Action Plan.

Plant Operations Manager and Technical Services Manager, Water Utility Division, City of Albuquerque, 1986-1992. Managed water production and transmission facilities operations, a major fast-tracked rehabilitation city-wide of wells, reservoirs, and pump stations, and Safe Drinking Water Act compliance. Initiated and implemented new programs for aquifer and water system water quality surveillance and water conservation.

Assistant Division Manager, Capital Projects Engineer, Plant Manager, and Electrical/Mechanical Maintenance Engineer, Wastewater Utility Division, City of Albuquerque, 1978-1986. Held a series of line management positions with rapidly increasing responsibility. Key member of management team that implemented major new wastewater treatment facilities and operations and maintenance staffing and training programs to bring the City of Albuquerque into compliance with the Clean Water Act.

Staff Engineer, Water Resources Engineers, Inc., Austin, Texas, 1974-1978. Applied river, estuary, and reservoir computer simulation models to support planning and development of solutions to water resources problems.

Graduate Teaching Assistant and EPA Water and Wastewater Traineeship Grantee, 1972-1974. Obtained Master of Science degree in Civil Engineering, water and wastewater, supported by a graduate teaching assistantship and EPA grant. Secondary fields of study included hydrology and experimental statistics.

Education

Certificate, Basic Management Program, Anderson School of Management, University of New Mexico

Master of Science in Civil Engineering, New Mexico State University

Bachelor of Science in Electrical Engineering, New Mexico State University

Licenses, Honors

Licensed Professional Engineer, retired, New Mexico License No. 6969

Recipient of the New Mexico Foundation for Open Government's Citizen's Dixon Award

Recipient of the Water Pollution Control Federation's William D. Hatfield award "for outstanding performance in works operations, management and advancement of knowledge in the field of water pollution control"

Phi Kappa Phi and Eta Kappa Nu National Honor Societies

Licensed Instructor (ret.) and practitioner, whitewater open canoe, American Canoe Association

Norman Gaume, P.E. (ret.)

44 Canoncito Dr NE • Albuquerque, New Mexico 87122 • 505 690-7768 • normgaume@gmail.com

May 26, 2021

Oil Conservation Commission
Ms. Florene Davidson, Commission Clerk
3rd Floor, Wendell Chino Building
1220 South St. Francis Drive
Santa Fe, New Mexico. 87505

Re: Technical Testimony Pertaining to the Matter of Proposed Amendments to the Commission's Rules on Produced Water, 19.15.29, New Mexico Administrative Code

Dear Oil Conservation Commission Members and Staff,

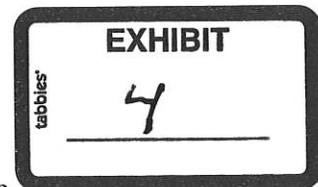
This letter presents my technical testimony pertaining to the proposed amendments to the oil and gas industry release rules. It is submitted on behalf of Intervenors the Sierra Club – Rio Grande Chapter, Pueblo Action Alliance, NAVA Education Project, Citizens Caring for the Future, and Amigos Bravos, and on behalf of my children and grandchildren.

I am a retired licensed professional water engineer. I was educated at Hobbs High School and New Mexico State University, where I earned Bachelor of Science in Electrical Engineering and Master of Science in Civil Engineering degrees. All my professional employment in New Mexico over 37 years (1978 through 2014) required a New Mexico professional engineering license. I have professional experience in water and wastewater facilities management, design, construction, operations, and maintenance and water resources management, planning and administration. My resume is attached.

Introduction

This technical testimony is organized in six parts:

1. Introduction
2. Support of amendments to 19.15.29 NMAC set forth in the joint petition of WildEarth Guardians and the Oil Conservation Division
3. Presentation of compiled Oil Conservation Division website data
4. Compiled website data interpretations and conclusions
5. Changes and additions to the proposed rule amendments of 19.15.29 NMAC that are within the scope of this rulemaking
6. Additional requirements needed to prevent spills



Support of Consensus Petition

The Intervenors and I urge the Oil Conservation Commission (Commission or OCC) adopt the jointly proposed amendments of WildEarth Guardians and the Oil Conservation Division (Division or OCD) to the release rules set forth in 19.15.29 NMAC. We strongly support the amendments that would prohibit major and minor spills of crude oil, liquid oil field wastes, natural gas liquids, brine, frac fluids, and chemicals and clarify the OCD's enforcement. These proposed amendments are a basic and necessary but insufficient step to protect public health, the environment, and fresh water resources from an average of 3.5 liquid spills per day as OCD on-line data shows occurred in 2020. The vast majority of spills are due to causes that my professional experience indicates are preventable.

I urged in July 2020 testimony before the Commission that the OCC and OCD “promulgate and enforce regulations that are more protective of public health, the environment, and fresh water resources from inadequacies in the disposition, handling, transport, storage, recycling, treatment, and disposal of produced water within the oil field [because] the status quo is not acceptable.” One year later—at the initiative of the WildEarth Guardians and with the Division's subsequent support—the Commission will decide whether or not it will exercise its discretionary authority to prohibit releases pursuant to 72.21.12.B (15), (21) and (22).

Please adopt the WildEarth Guardians and Oil Conservation Division's jointly proposed amendments as the Commission and the Division's as a necessary material step to address the unacceptable status quo pursuant to its discretionary authority to regulate produced water and releases “in a manner that protects public health, the environment, and fresh water resources.”

Summary of Oil Conservation Division Data

Division data posted on its statistics web page report a plethora of releases, spills and leaks of toxic oil and gas liquids and liquid oil field wastes to the surface environment. These releases and the data describing them are self-reported by oil and gas operators. The data provide compelling support for the WildEarth Guardians' and the Division's jointly proposed amendments to prohibit releases.

These analyses are summarized below, including conclusions drawn directly from the data. The Exhibits provide a summary of 2020 releases data and a 2017 through 2019 produced water spills analyses.

2020 releases. The Division provides the functionality to download an Excel spreadsheet of “spills” data from the “Statistics” webpage.¹ Of 1,543 unauthorized releases self-

¹https://wwwapps.emnrd.state.nm.us/ocd/ocdpermitting/Data/Spills/SpillSearchResults.aspx?IncidentIdSearchClause=BeginsWith&Severity=All&OperatorSearchClause=BeginsWith&FacilityIdSearchClause=BeginsWith&FacilityNameSearchClause=BeginsWith&WellNameSearchClause=BeginsWith&Incident_DateRangeStart=01/01/2020&Incident_DateRangeEnd=12/31/2020&Section=00

reported by oil and gas operators in 2020, 1,294 were spills of liquids. The other 249 were natural gas releases. These liquid spills, an average of 3.5 each day in 2020, are currently allowed but would not be under the WEG/OCD jointly proposed amendments. Preventable causes—labeled equipment failure, corrosion, human error, overflows of storage tanks and pits, and normal operations—caused 1,040 of the 1,259, or 82%, of these self-reported spills. The 2020 total reported liquid spills volumes total 26.5 acre-feet. The actual total spilled volume is higher because 404 of the 1,259 spills were reported to have spilled zero barrels, even though 208 of these zero volume spills were self-reported as having “major” severity with 40 additional spills having no “severity” value reported.

Normalized Produced Water Spill Rates by Operator 2017-2019. An exhibit I prepared for the Commission’s July 2020 rulemaking hearing presented compiled Division data demonstrating that four operators were responsible for over half of all produced water spills reported in 2019. My 2020 testimony before the Commission identified XTO Energy, Inc., COG Operating LLC, Devon Energy Production Co., and OXY USA, Inc. as the four operators responsible for more than half of all 2019 spills of “incident” type equal to produced water. They are listed in order of the decreasing percentage of the total spills in 2019 that they reported.

Subsequently, a colleague and I compiled produced water spills and energy production data for the three years from 2017 through 2019 for all registered oil and gas operators in order to calculate normalized rates of spills for all operators.

The downloaded data and our analyses of these data are contained in an Excel workbook that we have provided to Division Director and Commission Chair Adrienne Sandoval. Exhibit 1 is this 3.9 MB Excel workbook. It is submitted (as a link to a Dropbox copy of the file) to support this technical testimony and for this hearing record. It is the basis of the summaries and conclusions herein.

Exhibit 2, attached, is a portion of the sheet in Exhibit 1 entitled “2017-19 Operator AnnualProd-full.” It presents the Division’s data and my calculation of the normalized rates of spills per million barrels of oil equivalents (BOE) produced by the 50 oil and gas producers that reported the most energy production from 2017 through 2019. The normalized rates of spills are shown in the color-coded column labeled “Number of wastewater spills per million barrels BOE produced.” Note that Exhibit 1 includes the normalized rates of spills for all registered oil and gas producers.

Exhibit 3, attached, is a graphic also included in Exhibit 1 in the sheet entitled “Chart TOP 40 prods BOE-spills.” It compares the total energy reported to have been produced by the top 40 producers with the normalized rate of spills for each operator.

Exhibits 2 and 3 show the four operators that together were responsible for more than half of all produced water spills in 2019 are ranked 11th, 2nd, 4th, and 5th for their respective total barrels of oil equivalents production during 2017 through 2019.

EOG Resources, Inc., the top ranked energy producer, reported a normalized rate of spills equal to 0.26 produced water spills per million BOE. The table below presents relevant data and my calculations to enable direct comparisons of the spills frequencies of the four operators that were responsible for more than half of the total produced water spills in 2019, compared to EOG Resources, the top-ranked producer.

Producer	ORGID #	BOE Production 2017-2019	Produced Water Spills 2017-2019	Normalized Spill Rate-- Number of spills/million BOE)	Relative Frequency of Spills Compared to EOG as Benchmark
EOG Resources	7377	168,218,160	43	0.26	1.0
XTO Energy	5380	41,175,900	211	5.12	20.0
COG Operating	229137	139,741,068	342	2.45	9.6
Devon Energy	6137	107,137,848	270	2.52	9.9
OXY USA	16696	97,895,442	199	2.03	8.0

This table shows that XTO Energy reported 20 times as many spills per million barrels of oil equivalents as EOG Resources. The other three top produced water spillers had normalized spill rates approximately an order of magnitude higher than EOG. Exhibit 2 indicates the top 50 energy producers were responsible for 88% of the produced water spills.

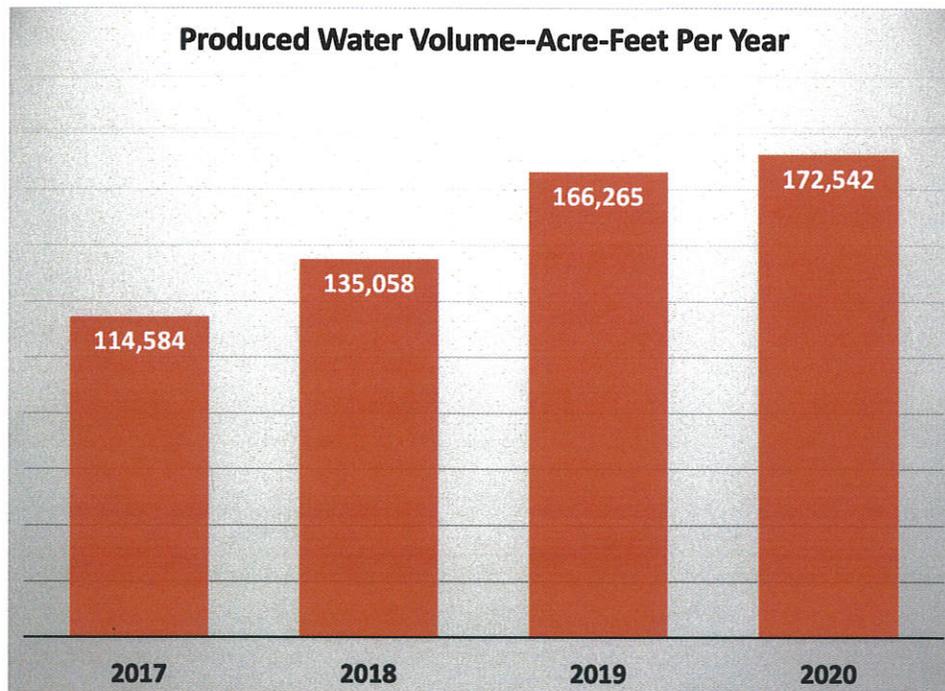
Volatile OCD Historical Data. In the process of compiling the OCD data for the purpose of generating the Excel workbook that is Exhibit 1, my colleague Peter Coha² observed that Division production data initial downloaded at 13:36 on January 27, 2021, were different than production data downloaded at approximately 16:50 on February 3, 2021. The differences are summarized in the sheet entitled “ReleaseNotes-Background Rev1” of Exhibit 1. The differences for 2019 oil production, gas production, produced water production, and produced water injection changed materially over that one-week period. I have inquired of the Division but have not received an answer regarding the reason(s) for these changes or for how these changes relate to collection of amounts payable by oil and gas producers to the State of New Mexico and to the State’s annual budgeting process.

These changes were discovered through our quality control checks of our downloads and analyses. We found we could not repeat the January 27, 2021 download which led Mr. Coha’s completion of a record-by-record review of the downloaded data for 2017. He identified 13 registered operator production records from 2017 that had changed over the one-week period in 2021 between downloads. I make no statement or conclusion in this testimony other than to observe that important historical public data maintained and

² Mr. Coha has a Bachelor of Arts in Mathematics degree. He worked 35 years for Intel where his duties included use of Excel to analyze large data sets. He prepared Exhibit 1 according to calculations that I specified and independently prepared alternative views of the OCD data using Excel pivot table functionality.

posted by the Division appears to be volatile and unreliable and to emphasize that the Exhibits reflect the data as it existed when they were downloaded on January 27, 2021.

Volumes of Produced Water Continue to Increase. Division website data regarding production of oil, gas, and produced water and produced water injection show the huge volumes of produced water requiring safe disposal to protect the public health, the environment, and fresh water resources. Produced water increased in 2020 to 172,542 acre-feet, a 4% increase over 2019 despite the pandemic.



Compiled Website Data Interpretations and Conclusions

New Mexico spills and produced water regulations and management are failing to protect public health, the environment, and freshwater resources from preventable releases of produced water and liquid oil field wastes, products, and chemicals. Oil and gas operators prevention of spills is voluntary. Some operators choose to prevent most spills. Others choose to have a much worse frequency of spills. That is unacceptable and, in my view, violates the public's constitutional rights for control of pollution and despoilment of the air, water, and other natural resources of this state.

The fact that the Commission and the Division allow operators to have normalized rates of produced water spills that are 20 and 18 times higher than the normalized spill rate of industry leader EOG Resources per the calculations reported in Exhibit 2 indicates that the Legislature, the Commission, and the Division are violating the New Mexico Constitution, which states in Article XX, Sec. 21, "The protection of the state's beautiful and healthful environment is hereby declared to be of fundamental importance to the

public interest, health, safety and the general welfare. The legislature shall provide for control of pollution and control of despoilment of the air, water and other natural resources of this state, consistent with the use and development of these resources for the maximum benefit of the people.” The fact that EOG Resources has a superior normalized rate of spills and is the top-ranked New Mexico oil and gas producer demonstrates that prevention of spills and development of oil and gas resources are compatible.

The Division’s data demonstrate that prevention of spills is voluntary. EOG Resources, Inc., New Mexico’s top ranked oil and gas producer has a relatively low rate of spills. Rep. Nathan Small, sponsor of HB546 (2019), the Produced Water Act of 2019, requested that I meet with an employee of EOG resources in the context of SB86 (2021). I asked that employee to tell me why EOG Resources, Inc. has a low rate of spills. He responded that EOG Resources is accountable to its stockholders, who demand a higher level of environmental performance than New Mexico requires. He said that prevention of spills requires investments in facilities, instrumentation and automation, and training that EOG Resources chooses to make. He said, and the record indicates, that other operators choose not to make voluntary expenditures to prevent spills.

EOG Resources also utilizes moderately treated produced water for fracking rather than scarce fresh water resources. The EOG Resources employee told me that over 98% of EOG Resources water requirements are met by moderately treated produced water. Other operators use imported water, which is then contaminated by its oil and gas uses. Use of imported water increases the liquid oil field waste volumes in an amount equal to the imported fresh, brackish or saline surface or fresh water volumes used for deep drilling, well completion, and fracking as well as depleting New Mexico’s statutorily protected water resources.

My experience as a professional engineer managing water and wastewater facilities operations and maintenance is basis for my professional opinion that the vast majority of spills are preventable. Equipment failure indicates that the equipment was not designed to operate without failure under foreseeable operations conditions or has not been maintained adequately or replaced with sufficient frequency. Corrosion indicates that equipment and facilities materials were not selected to withstand the highly corrosive conditions that are to be expected when handling highly corrosive liquid oil field wastes or that investments made to maintain or replace equipment were not made to prevent corrosion failures. Human error indicates that the responsible human was not properly trained or supervised or was expected to perform tasks that could be automated with superior reliability. Overflows of tanks and pits is negligent. The fact that “normal operations” is the cited cause for many spills indicates the Commission and the Division have been willing to accept spills as “normal.”

The spills record of EOG resources demonstrates that “control of pollution and control of despoilment of the air, water and other natural resources of this state, consistent with the use and development of these resources for the maximum benefit of the people” which is currently voluntary, is both practical and profitable. Without effective release

prohibitions, other operators choose to not invest in the control of pollution and prevention of the despoilment of the air, water and other natural resources of this state, thereby imposing costs and health impacts on New Mexicans who have the misfortune of living within or near oil fields, on the New Mexico public, and on future generations.

Division data posted on its website for public information and use are deficient. The data are poor quality. The Division tolerates incomplete and inadequate reporting of data that are pertinent to environmental protection. Director and Chair Sandoval told me that my interpretation of Exhibit 3 is faulty because low rates of spills may indicate operators' failure to report spills rather than superior performance compared to other operators.

Many spill records over the 2017 through 2019 time period do not show completion of a final report. If a final report is not required, the spill record should indicate "not applicable" rather than a blank for the final report date.

Missing data are reported as zero rather than blanks. For example, the division requires reporting on the spill reporting form C-141 of the depth to groundwater. Spill data records for the 1,259 reported liquid spills in 2020 contain exactly one non-zero value for the depth to groundwater.

The New Mexico Water Data Act was signed into law in 2019. It names the Energy Minerals and Natural Resources Department as one of four directing agencies. Directing agencies all generate public water data germane to New Mexico's future. New Mexico Bureau of Geology Associate Director Timmons, who is New Mexico's principal for implementation of the Water Data Act and who participating in drafting the bill that passed, describes the Oil Conservation Division's energy-related water data as the reason the Department is a directing agency.

The public data reported by the Division do not meet the criteria for public data sets as set forth in the Water Data Act implementation standards. Division data should be collected, compiled, described by metadata, and managed for public purposes commensurate with implementation standards adopted for New Mexico Water Data Act implementation. <https://newmexicowaterdata.org>

Changes and Additions Proposed by Intervenors to the Proposed Rule Amendments of 19.15.29 NMAC That Are Within the Scope and Notice of this Rulemaking

The principal matter of this rulemaking is to prohibit releases. Effective prohibition of releases, as measured by stopping spills and unauthorized releases, will require more than reversing the past regulatory policy of allowing them. A suite of changes is required to level the playing field among operators, stop releases, and protect public health, the environment and fresh water resources. Three minor changes are proposed by the Intervenors. Each is within the scope of this rulemaking to prohibit spills and will help dissuade operators with high normalized rates of releases to take actions and spend a fraction of their gross revenues to stop unauthorized releases. They:

1. Require that the responsible party characterize and better document the source of releases as part of the immediate response in order to inform remediation requirements,
2. Require that entities in close proximity of a release be notified of the release and of its remediation, and
3. Establish a rebuttable presumption that a violation of the release rule presents a risk to public health or safety or a significant environmental harm.

Better Characterization. It makes scientific and regulatory sense to collect samples of the source of release for laboratory analysis as part of the initial response before the liquid wastes are recovered and disposed of. Proper remediation design requires knowledge of the contaminant released. As has been the case with the Commission first requiring data before considering new rules to regulate use of moderately treated produced water, fresh water, and other imported water for fracking, the Intervenor expect the commission will require data before strengthening remediation standards.

Addition of total dissolved solids to the list of analytes is integrated with the proposed characterization requirement. Chloride is the element that Commission rules rely on for determining the adequacy of remediation. However, remediation of massive total dissolved solids contamination requires knowledge of the total dissolved solids concentrations of the liquid release source. Chloride doesn't adequately inform regulators or the public of contamination by total salts.

A 2016 produced water salinity spatial variability characterization report published by the New Mexico Water Resources Research Center says the researchers rejected samples for their analysis that included major ions but did not include a value for total dissolved solids. They report high maximum average TDS values with high variability,³ from 10% to more than 40% salt by weight. These salt loads are approximately 3 to 12 times higher saline than sea water. The massive amounts of salt in spilled produced water poison the land surface. The Commission should order that characterization of the sources of releases include total dissolved solids pursuant to the Intervenor's proposed language.

Photo documentation of the release as part of the immediate response will also help inform the public of the nature, source, and extent of the release and inform appropriate corrective action and remediation design.

³ Chaudhary, Binod K., Willman, Spencer E., Carroll, Kenneth C., Spatial Variability and Geochemistry of Produced Water in Southeastern New Mexico, USA, 2016. From the abstract: "Information on spatial variability of salinity and inorganic constituents of produced water in western Permian Basin is lacking despite an increased stream of wastewater generated from oil and gas production. Variability and geochemistry of produced water by geologic formation from Guadalupian (Late Permian) to Ordovician ages were investigated in western half of the Permian Basin (Delaware Basin, Central Basin Platform and Northwest Shelf). The total dissolved solids (TDS) of produced water increased with depth in the Delaware Basin and Central Basin Platform to Delaware and Wolfcamp formations with maximum average TDS of 225 g/L and 154 g/L respectively, and then decreased with further increases in depth. In contrast, the salinity of produced water decreased with depth below Guadalupian age formations in the Northwest Shelf with a maximum average TDS of 205 g/L in Artesia formation."

Notification. The Commission should require responsible parties to provide notification within 24 hours of any major or minor release (a release greater than 5 barrels) to any land owners, residences, institutions, and businesses within 1000 feet distance of the point of release and area impacted by the release. Notification should be provided within a week to neighbors within a one-half mile radius. These neighbors also should receive notification when remediation is complete.

The lack of notification of contamination and communication with persons impacted directly by spills has been a factor that has driven the notoriety of recent spills. Persons impacted or potentially impacted by spills through their misfortune to be located nearby deserve prompt information that an illegal release has occurred. The Intervenor request that the Commission adopt requirements to notify affected and potentially affected persons rather than limit notification to only the Division as set forth in proposed amendments to the notification rule 19.15.29.10 (A).

The Commission requires increased stringency for remediation of liquid releases “within 1000 feet of any fresh water well or spring.” 19.15.29.12.(C) NMAC Colorado requires a 1000-foot setback of oil and gas facilities to occupied structures. These distances adopted by New Mexico and Colorado are the basis for the 24-hour notification requirement for affected or potentially affected persons.

Rebuttable Presumption. Energy, Minerals and Natural Resources Department and OCD officials describe the requirement for enforcement of Commission rules and the difficulty of enforcement in the absence of adequate enforcement staff. Division Director and Commission Chair Sandoval during her cross examination of me in a Commission rulemaking hearing in July 2020 stressed this problem and asked my opinion about how these real limitations could be overcome.

The Division’s statutorily required October 1, 2020 report⁴ to the Water and Natural Resources Committee demonstrates the Division’s lack of enforcement capability. Only two notices of violation were issued in FY2020 and resulted in a total of \$14,200 in penalties. Only four notices of violation were issued in the first quarter of FY2021. None were resolved as of the date of the Division report.

One way to help overcome budget and staffing limitations would be to put the burden of proof on responsible parties to show any violation of the Commission’s release rule does not presents either a risk to the health or safety of the public or a risk of causing significant environmental harm. The present scheme puts the burden to demonstrate those risks on the inadequate numbers of the Division’s enforcement staff, leading to ineffective enforcement of regulations to protect the public and the environment. Division staff and budgets are a third and a fourth, respectively, compared to North

⁴The annual enforcement report is required by statute to be posted on the Division’s website. A through search did not reveal that it is.

Dakota and Oklahoma, respectively, to regulate similar amounts of oil and gas production and similar numbers of wells, respectively.

Additional Requirements to Prevent Spills Not Addressed in This Rulemaking

Additional requirements are needed to prevent spills that are not within the scope of this rulemaking or the Sierra Club's proposal in intervention. The Intervenors are not privy to Commission and Division plans to fulfill their duty to protect public health, the environment and fresh water resources by stopping releases that will become illegal pursuant to the Commission's release rule amendments proposed by the WildEarth Guardians and the Division and strongly supported by the Intervenors.

The Division and the Commission should consider and adapt additional rules to provide for the following:

- Mandatory use of recycled produced water for fracking and limitation of imported fresh water with a TDS concentration of 10,000 or less for fracking
- Minimum facility and performance requirements to ensure the safe and environmentally protective handling and transportation of liquid oil field wastes to stop preventable spills
- Tracking of liquid oil field wastes through its production, treatment, reuse, and environmentally safe disposal
- Registered operator reporting that is accurate, complete and timely
- Improved data quality meeting the implementation standards for the Water Data Act
- More stringent requirements for remediation to prevent leaching of salts and toxins to underlying groundwater
- Effective enforcement

The Intervenors look forward to learning the Division's and the Commission's plans for implementing and enforcing regulations to protect public health, the environment, and fresh water resources that will satisfy the public's constitutional rights to a healthful environment of fundamental importance to the public interest, health, safety and the general welfare.

Sincerely,

/s/

Norm Gaume, P.E. (ret.)

Exhibit 1: Excel Workbook

<https://www.dropbox.com/s/tbcg3qqbhze9j0/2017-2019%20oil%20production%20and%20spills%20analysis-r0e-3.xlsx?dl=0>

Exhibit 2

Top 50 of 434 Producers--Oil and Gas Production and Produced Wastewater Spills--2017-2019

Ogrid	Operator	Total oil production 2017-2019 (bbls)	Total gas production 2017-2019 MCF	Total 3-Year BOE production 2017-2019 (barrels)	Total produced wastewater (bbls)	Total Water Injected (bbls)	Ratio Produced water to BOE	Number of records in OGD "spills" database with material spilled equal to produced water	Number of wastewater spills per million barrels BOE produced	Relative frequency of spills with EOG Resources 0.26 million BOE as base rate	Average Interval between spills-days	2017-2019 Rank oil production	2017-2019 Rank BOE production	Ratio water to oil	Major Severity	Minor Severity	Blank Severity
7377	EOG RESOURCES INC	116,651,084	309,402,456	168,216,160	279,988,861	21,363,849	1.66	43	0.26	1.0	25	1	1	2.40	26	10	1
229137	COG OPERATING LLC	87,290,382	314,704,114	139,741,068	223,768,933	168,057,109	1.60	342	0.28	9.6	3	2	2	2.56	127	143	3
772171	HILCORP ENERGY COMPANY	1,675,942	753,251,410	127,217,844	6,813,704	9,118,346	0.05	36	2.45	1.1	30	41	3	4.07	12	14	2
6137	DEVON ENERGY PRODUCTION COMPANY, LP	66,157,261	245,883,519	107,137,848	166,627,545	72,371,590	1.56	270	2.52	9.9	4	4	4	2.52	126	105	6
16696	OXY USA INC	68,085,048	178,862,361	97,895,442	186,987,618	38,990,290	1.91	199	2.03	8.0	6	3	5	2.75	81	66	3
14744	MEMBOURNE OIL CO	54,029,345	230,997,254	92,826,887	144,915,334	86,451,894	1.57	18	2.19	0.8	61	5	6	2.68	15	1	1
4323	CHEVRON U.S.A INC	24,217,050	193,438,198	56,456,750	177,697,086	108,307,318	3.15	50	0.89	3.5	22	7	8	7.34	21	20	0
228937	MATADOR PRODUCTION COMPANY	27,458,903	104,200,904	44,825,720	81,709,125	1,743,723	1.82	17	0.38	1.5	64	6	6	2.98	13	4	0
215099	CIMAREX ENERGY CO.	22,866,221	123,911,209	43,520,089	46,436,811	8,807,843	1.07	14	0.32	1.3	78	9	9	2.03	7	6	0
778	BP AMERICA PRODUCTION COMPANY	432,249	257,738,027	43,388,587	16,723,306	3,434,604	0.39	4	0.09	0.4	274	60	10	38.69	0	0	2
5380	XTO ENERGY, INC	22,254,597	113,527,818	41,175,900	175,016,179	145,842,947	4.25	211	5.12	20.0	5	10	11	7.86	92	81	0
873	APACHE CORPORATION	22,974,793	101,379,989	39,871,458	175,868,531	133,183,350	4.41	47	1.18	4.6	23	8	12	7.65	14	13	1
217817	CONOCOPHILLIPS COMPANY	12,118,021	114,118,821	31,137,825	114,128,501	107,939,477	3.67	54	1.73	6.8	20	14	13	9.42	13	8	2
217955	COG PRODUCTION, LLC	12,403,263	100,716,018	29,180,266	32,967,412	770,311	1.13	66	2.26	8.8	17	13	14	2.66	22	39	0
157984	OCCIDENTAL PERMIAN LTD	59,046,263	59,674,076	59,674,076	394,141,066	376,759,266	15.55	12	0.47	1.9	91	11	15	25.58	9	2	0
372098	MARATHON OIL PERMIAN LLC	13,593,256	49,818,238	21,896,286	48,108,376	2,384,386	2.20	59	2.69	10.5	19	12	16	3.54	27	22	5
162683	CIMAREX ENERGY CO. OF COLORADO	9,438,896	67,698,849	20,722,038	27,623,982	17,352,970	1.33	22	1.06	4.2	50	17	17	2.93	14	5	0
260297	BITA OIL PRODUCERS, LLC	10,773,551	51,209,268	19,308,429	23,423,376	2,959,287	1.21	24	1.24	4.9	46	15	18	2.17	12	6	0
260737	BOPCO, L.P.	10,764,089	47,313,108	18,649,607	53,585,228	37,337,972	2.87	56	3.00	11.7	20	16	19	4.98	29	21	2
370292	SOUTHLAND ROYALTY COMPANY LLC	21,009	100,965,833	16,848,648	1,876,738	3,812,452	0.11	no incident	no incident or oil	none	none	187	20	89.33	no incident	no incident	no incident
372286	ENDURING RESOURCES, LLC	7,149,103	55,038,904	16,322,254	4,582,336	481,509	0.28	13	0.80	3.1	84	21	21	0.64	3	6	3
289408	LOGOS OPERATING, LLC	1,936,486	83,043,526	15,777,074	18,660,964	4,116,693	1.18	8	0.51	2.0	137	36	22	9.64	3	2	3
246289	WPX Energy Permian, LLC	7,793,831	42,319,714	14,847,117	40,493,676	2,790,993	2.73	70	4.71	18.4	16	19	23	5.20	28	34	2
240974	LEGACY RESERVES OPERATING, LP	9,424,511	29,030,318	14,262,887	66,396,268	54,644,613	4.66	20	1.40	5.5	55	18	24	7.05	14	1	1
192463	OXY USA WTP LIMITED PARTNERSHIP	7,737,253	35,258,869	13,613,731	20,795,438	8,053,389	1.53	51	1.18	4.6	68	20	25	2.69	5	6	1
25575	EOG Y RESOURCES, INC.	5,129,474	45,569,548	12,724,399	20,623,269	24,770,410	1.62	24	4.01	15.7	21	25	26	4.02	22	22	2
373075	XTO PERMIAN OPERATING LLC	6,633,844	23,673,126	10,579,365	21,319,421	10,740,367	2.02	no incident	no incident or oil	none	none	22	27	3.21	no incident	no incident	no incident
372137	CHISHOLM ENERGY OPERATING, LLC	5,452,602	19,281,364	8,666,163	16,912,938	937,816	1.95	10	1.15	4.5	110	24	28	3.10	7	0	0
300897	ARP PRODUCTION COMPANY, LLC	0	51,684,903	8,614,151	29,036,771	22,887,836	3.37	1	0.12	0.5	1095	377	29	0.29	no incident	no incident	no incident
372165	CENTENNIAL RESOURCE PRODUCTION, LLC	5,789,194	27,191,571	7,845,595	965,488	156,077	0.12	1	0.13	0.5	1095	32	30	0.29	no incident	no incident	no incident
249099	CAZA OPERATING, LLC	4,109,833	9,216,251	7,325,236	12,473,966	156,077	1.70	4	0.55	2.1	274	23	31	2.15	4	0	0
258350	VANGUARD OPERATING, LLC	2,394,722	19,954,098	5,720,405	8,859,501	294,553	1.52	4	0.69	2.7	274	26	32	2.16	2	1	0
143199	ENERVEST OPERATING L.L.C.	350,043	32,033,533	5,688,965	39,781,431	20,035,845	6.95	13	2.27	8.9	84	35	33	16.61	4	3	2
3342	WYFFER LIME ROCK RESOURCES (L.A.) L.P.	3,342,779	13,241,491	5,549,694	1,583,905	298,212	0.28	no incident	no incident or oil	none	none	67	34	4.52	no incident	no incident	no incident
12361	KAISER-FRANCIS OIL CO.	3,840,942	9,664,058	5,451,618	7,599,327	1,092,960	1.39	1	0.91	3.5	219	31	35	9.00	5	0	0
371755	PERCUSSION PETROLEUM OPERATING, LLC	3,826,313	7,605,786	5,095,944	16,509,461	15,943,800	3.24	13	1.18	0.7	1095	27	36	1.98	1	0	0
3080	BURNETT OIL CO INC	2,717,911	13,950,705	5,043,029	8,712,900	6,581,417	1.73	15	2.97	10.0	84	28	37	4.31	9	2	0
13837	WACK ENERGY CORP	3,602,176	7,491,242	4,850,716	18,613,540	5,162,207	3.84	5	1.03	4.0	219	30	39	5.17	3	1	0
298299	CROSS TIMBERS ENERGY LLC	1,488,398	18,639,694	4,595,014	14,010,060	24,784,685	3.05	4	0.87	3.4	274	42	40	9.41	0	3	0
372417	ADVANCE ENERGY PARTNERS HAT MESA, LLC	3,744,249	4,657,897	4,520,565	10,086,112	1,422,739	2.23	10	2.21	8.7	110	29	41	2.69	7	2	0
6515	DUGAN PRODUCTION CORP	241,623	25,556,248	4,500,998	17,880,873	16,119,018	3.97	3	0.67	2.6	365	75	42	74.00	1	2	0
372043	TRP ROCK OPERATING, LLC	2,956,775	8,394,394	4,347,841	6,172,792	808,635	1.42	1	0.23	0.9	1095	33	43	2.09	no incident	no incident	no incident
371838	DIR OPERATING, LLC	1,752,059	10,378,250	3,481,167	714,021	2,518,809	0.23	6	1.72	6.7	183	37	44	0.41	0	3	2
15363	Murchison Oil and Gas, LLC	1,709,093	9,456,296	3,285,142	4,031,705	2,596,744	1.21	2	0.61	2.4	548	39	45	2.36	1	0	1
241333	CHEVRON MIDCONTINENT, L.P.	755,092	13,105,696	2,937,375	10,221,807	12,167,658	3.48	1	0.34	1.3	1095	52	46	13.57	0	1	0
372224	AMERDEY OPERATING, LLC	1,732,169	6,485,368	2,813,064	3,751,897	0	1.33	1	0.36	1.4	730	38	47	2.17	0	1	0
151416	FASKEN OIL & RANCH LTD	1,624,119	5,943,772	2,666,748	17,168,458	37,986,798	6.44	8	3.00	11.7	137	40	48	10.24	4	2	1
18917	FASKEN & STEVENS INC	1,024,068	3,602,711	1,624,520	3,521,818	841,521	2.17	9	5.54	21.7	122	47	49	3.44	7	1	0
1092	ARMSTRONG ENERGY CORP	839,092	4,338,243	1,362,133	2,093,975	2,584,856	1.34	2	1.28	5.0	548	50	50	2.50	1	1	0
Total		701,080,643	1,395,207,082	2,852,073,340	96%	2,004	1.841	88%									

Percent top 50 BOE producers of all producers: 97%

Exhibit 3

