

DIRECT TECHNICAL TESTIMONY OF JEREMY NICHOLS

I. Introduction

My name is Jeremy Nichols, and I am the Climate and Energy Program Director for WildEarth Guardians (Guardians). Guardians is a nonprofit environmental advocacy organization founded 32 years ago in Santa Fe, New Mexico. The organization's mission is to protect and restore the wildlife, wild places, wild rivers, and health of the American West. The organization currently has more than 120,000 members and supporters.

I present this written testimony on behalf of Guardians for the public hearing in the matter EIB 21-27, regarding the New Mexico Environment Department's (NMED) petition filed with the Environmental Improvement Board for the adoption of proposed new regulation 20.2.50 NMAC, which would limit ozone precursor emissions from the oil and gas industry.

My testimony supports WildEarth Guardians' position that additional language is needed in the proposed 20.2.50 NMAC to ensure proper emission regulation within the oil and gas sector, to ensure public transparency around compliance, and to ensure consistency with New Mexico statutes and current air quality policy implementation. This additional language would be minor, yet it would be hugely important for ensuring effective regulation, protection of public health and well-being, and for achieving environmental justice.

II. Qualifications

My full background and qualifications are set forth in my resume, which is identified as WildEarth Guardians Exhibit 2.

I am currently the Climate and Energy Program Director for WildEarth Guardians. In this capacity, I have led the organization's engagement in air quality regulatory matters for over 13 years. Previous to this position, I was the founder and director of a nonprofit clean air advocacy organization called Rocky Mountain Clean Air Action. I have over 20 years of direct, hands-on experience in weighing in on and scrutinizing air quality regulatory actions, including stationary source permitting, SIP revisions, state-only rulemakings, and enforcement. I work closely with and provide consulting support for scientists, attorneys, elected officials, and the general public on air quality and air quality regulatory matters.

In my years of working on air quality regulatory issues, I have provided testimony, comments, and information to numerous air quality agencies, boards, and commissions. I have provided technical testimony to the New Mexico Environmental Improvement Board. I have provided expert testimony to the Colorado Air Quality Control Commission. I have developed and submitted comments on numerous permits, both New Source Review and Title V Operating Permits, and state regulatory proposals. I have provided comments and testimony in response to numerous EPA regulatory actions, including SIP reviews, proposed New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants, regional haze

regulations, and nonattainment planning. I have practiced before the EPA's Environmental Appeals Board.

I have specific and longstanding experience regarding the development of air quality regulations for the oil and gas sector in Colorado, which has experienced high ozone pollution across the state due in large part to unchecked emissions from the oil and gas sector. I participated in the first-ever rulemaking to adopt statewide regulations to control volatile organic compound (VOC) and nitrogen oxide (NOx) emissions from oil and gas production equipment, including storage tanks, compressor engines, and glycol dehydrators. These rules were first adopted in 2006 and have since been updated regularly. I most recently participated in rulemaking proceedings before the Colorado Air Quality Control Commission in 2019 and 2020 regarding updates to oil and gas air quality regulations related to monitoring of air emissions during pre-production activities, control of emissions from flowback operations, control, regulation of VOCs from storage tanks and other equipment, and related to the permitting of oil and gas exploration and production facilities. Attached as Exhibit 4 is an example of recent written testimony that Guardians, along with other organizations, presented to the Colorado Air Quality Control Commission on issues related to the regulation of air pollution from the oil and gas sector.

III. The Need for Action

While the Board is legally obligated to adopt a plan, including rules, to limit emissions of ozone precursor emissions whenever ambient concentrations exceed 95% of the National Ambient Air Quality Standards (NAAQS), it's also simply good public health and environmental justice policy. It is well known that ground-level ozone, the key ingredient of smog, poses serious health and environmental risks. Although New Mexico has historically had the foresight to prevent ozone problems from occurring in the first place, unfortunately unchecked emissions primarily from the oil and gas sector have pushed concentrations of this poisonous gas above the NAAQS throughout the state. Communities in Bernalillo, Dona Aña, Eddy, Lea, Rio Arriba, San Juan Sandoval, and Valencia Counties have also suffered ozone concentrations at or above 95% of the NAAQS, contrary to state law and contrary to good public health policy.¹

There is now an urgent need to clamp down on ozone forming emissions, bring all parts of New Mexico into compliance with state law, and ensure consistent and meaningful protection of people and clean air across the Land of Enchantment.

In this case, the Department has proposed regulations that would curtail VOC and NOx emissions—key ozone precursor pollutants—from the oil and gas sector, a major polluter in New Mexico. Not only is there a trove of evidence supporting the regulation of oil and gas industry emissions to address ozone problems, but for New Mexico, it is the most critical source to regulate given the industry's outsized impact on air quality in the San Juan and Permian oil and

¹ Although the Environmental Improvement Board does not have jurisdiction over air quality in Bernalillo County, the Board is required under the Clean Air Act to ensure that emissions subject to its jurisdiction outside Bernalillo County do not significantly contribute to nonattainment or interfere with maintenance in Bernalillo County.

gas producing basins, located in the northwestern and southeastern portions of the state, respectively.

A. Emissions from the Oil and Gas Sector are Contributing to High Ozone Levels Across the Western United States

To begin with, it is important to highlight the longstanding understanding that the oil and gas industry's ozone precursor emissions can have significant impacts on regional ozone formation and cause or contribute to exceedances and even violation of the NAAQS, particularly in the western United States. Studies and firsthand experience have confirmed the myriad sources of VOC and NO_x emissions associated with oil and gas extraction can produce large amounts of ozone-forming pollution and contribute to exceedances and/or violations of the NAAQS.^{2, 3}

In Colorado, the state first adopted regulations in 2004 to control oil and gas industry emissions to address ground-level ozone problems in the Denver Metro region.⁴ Since then the state has updated its air quality regulations numerous times to further reduce oil and gas industry emissions to address the state's ongoing ozone problem.⁵ While these regulatory efforts have been driven by the U.S. Environmental Protection Agency (EPA) strengthening the NAAQS in response to updated science, these efforts also reflect Colorado's challenge to fully and effectively regulate emissions from the oil and gas industry, which have grown tremendously in the state and presented new and more complex pollution control challenges.

Other notable examples of states recognizing the need to control emissions from the oil and gas industry to address ozone problems include Utah and Wyoming. In western Wyoming, unchecked oil and gas pollution has pushed ozone levels to violate the NAAQS in the Upper Green River Basin, an area of intensive oil and gas development and very few residents.⁶ In 2018, the EPA designated northeastern Utah's Uinta Basin an ozone nonattainment area due to oil and gas industry emissions pushing ozone levels above the NAAQS.⁷

In response to the oil and gas industry's unchecked emissions, Colorado, Utah, and Wyoming have all adopted oil and gas industry-specific regulations to curtail emissions.⁸

² See e.g. Exhibit 5, Pozzer, A., M.G. Schultz, D. Helmig, "Impact of U.S. Oil and Natural Gas Emission Increases on Surface Ozone is Most Pronounced in the Central United States," *Environ. Sci. Technol.* 2020, 54, 12423-12433.

³ An exceedance of the NAAQS occurs whenever ozone concentrations rise above the level of the NAAQS. A violation of the ozone NAAQS whenever the three-year average of the annual fourth highest 8-hour reading exceeds the NAAQS. 40 C.F.R. § 50.19. While an exceedance is cause for health concern, a violation is cause for health alarm.

⁴ Exhibit 6, Regional Air Quality Council, "Early Action Compact Ozone Action Plan, Proposed Revision to the State Implementation Plan, Draft" (Feb. 2004).

⁵ See e.g. Exhibit 7, *Denver Post*, "Oil, gas industry may face tougher air quality rules" (April 2008); Exhibit 8, "Air Quality Control Commission adopts first phase of rules to reduce oil and gas emissions," Press Release (Dec. 2019).

⁶ Exhibit 9, Thuermer, A.M., "DEQ confirms ozone pollution violated federal standards," *Wyofile* (June 18, 2019).

⁷ Exhibit 10, U.S. EPA, "Final Area Designations for the 2015 Ozone National Ambient Air Quality Standards Technical Support Document."

⁸ A copy of Colorado's regulations are attached as Exhibit 11. Utah's regulations are attached as Exhibit 12. Wyoming's regulations, which are attached as Exhibit 13, require best available control technology to limit VOC emissions, including from oil and gas operations.

State Oil and Gas Air Quality Regulations

State	Oil and Gas Air Quality Regulations
Colorado	Air Quality Control Commission Regulation Number 7
Utah	Utah Administrative Rules, R307-501—511
Wyoming	Wyoming Air Quality Standards and Regulations, Chapter 3, Section 6

B. New Mexico's Ozone Problem is Not Improving

While New Mexico regulators have long understood the link between oil and gas development and high ozone, the state unfortunately has not followed the lead of its neighbors. The result is that oil and gas producing areas are now among the most polluted in the state.⁹

Indeed, monitors in the Permian Basin are now showing that the region is in violation of the ozone NAAQS. Accordingly, in March of this year, WildEarth Guardians petitioned the EPA Administrator to designate the region a “nonattainment,” or dirty air area.¹⁰ The petition also called on the EPA to find that New Mexico's State Implementation Plan (SIP) is inadequate to attain and maintain the NAAQS in light of ozone violations.

So far in 2021, the situation appears more dire than ever. According to the EPA's AirData website, 77 exceedances of the ozone NAAQS have been recorded at monitoring sites in New Mexico.¹¹ Ozone concentrations in excess of 95% of the current NAAQS of 0.070 parts per million have been recorded 149 times throughout the state, including in Bernalillo, Dona Aña, Eddy, Lea, Rio Arriba, San Juan, Sandoval, Santa Fe, and Valencia Counties.

Included as WildEarth Guardians Exhibit 16 is a spreadsheet I prepared, based on air quality data reported by EPA at its AirData webpage, listing instances during which ozone concentrations in excess of 95% of the NAAQS have been recorded so far in 2021 at New Mexico monitoring sites. This exceedance data is sorted from highest 8-hour exceedance (0.089 parts per million, recorded in Dona Aña County on July 9, 2021) to the lowest (0.067 parts per million recorded at numerous monitoring sites in May, June, and July 2021) and it illustrates the severity of New Mexico's ozone problem and the likely consequences of inaction to curtail emissions. Of note:

- The data shows that 34 ozone exceedances of the NAAQS have been recorded so far in New Mexico's oil and gas producing counties, including Eddy, Lea, Rio Arriba, San Juan, and Sandoval. In the attached spreadsheet, I highlight data recorded from monitors in these counties.
- There have been 70 instances during which ozone concentrations have been higher than 95% of the NAAQS, particularly at monitors in the San Juan and Permian Basins.

⁹ Exhibit 14, Hedden, A., “New Mexico's oil and gas counties among the most air-polluted in the state amid recent boom,” *Carlsbad Current-Argus* (April 22, 2021).

¹⁰ This petition is attached as Exhibit 15.

¹¹ Air quality data can be queried at AirData here, <https://www.epa.gov/outdoor-air-quality-data/download-daily-data>.

- Of New Mexico’s oil and gas producing counties, Lea County has recorded the highest ozone with the monitor in Hobbs recording 0.086 parts per million on July 24, 2021.
- The monitor in Carlsbad in Eddy County has recorded more instances of ozone concentrations higher than 95% of the NAAQS than any other monitoring site in the state.
- This ozone has directly impacted communities across New Mexico, including Carlsbad, Hobbs, Farmington, Bernalillo, Las Cruces, and many others.
- Ozone exceedances have been recorded in Chaco Culture National Historical Park in San Juan County and within Carlsbad Caverns National Park in Eddy County.

While data reported to EPA’s AirData database is not final, it illustrates the stark reality that ozone pollution in New Mexico is not subsiding and that without action to reduce ozone precursor emissions, people and communities are likely to continue to suffer.

This stark reality is underscored by the impacts of the climate crisis, which is raising mean surface temperatures, thereby extending the period when ground-level ozone is formed and creating conditions more conducive to the creation and persistence of ozone. One recent study predicted heightened levels of ground-level ozone created by climate change could cause a 7.3% increase in emergency room visits related to asthma by children aged 0–17.¹² A 2011 report by the Union of Concerned Scientists surveyed the literature concerning climate change and ground-level ozone and concluded that the “ozone penalty factor”—the amount ozone levels are projected to increase for every 1 degree Fahrenheit (°F) increase in temperature—was 1.2 ppb.¹³

The daily temperature in New Mexico is already 2.7 °F warmer today than it was in 1970, and estimates indicate the Southwest could warm from 4 °F to 10 °F by 2100.¹⁴ Thus, based solely upon the “ozone penalty factor,” global heating alone is likely to result in ground-level ozone levels in the state between 4.8 to 12 ppb higher. This increase is separate and apart from the significant increase in ozone pollution levels driven by local and regional emissions of ozone precursors. Absent action, climate change will continue to exacerbate the region’s ozone levels, likely preventing parts of New Mexico from ever achieving compliance with the ozone NAAQS.

IV. A Good Start, But Improvements Needed in NMED’s Proposed Rules

NMED’s proposed regulations are a long-overdue, yet positive step in the right direction. Although it appears that compliance dates could be accelerated for many proposed control measures, in general, the proposed regulations will assure progress in curtailing ozone forming emissions from the oil and gas sector.

¹² Exhibit 17, Perry E. Sheffield et al., *Modeling of Regional Climate Change Effects on Ground-Level Ozone and Childhood Asthma*, 41 AM. J. PREV. MED. 252 (2011).

¹³ Exhibit 18, *Rising Temperatures, Worsening Ozone Pollution*, UNION OF CONCERNED SCIENTISTS (Aug. 2, 2011), <https://www.ucsusa.org/sites/default/files/2019-09/climate-change-and-ozone-pollution.pdf>.

¹⁴ Exhibit 19, *Confronting Climate Change in New Mexico*, UNION OF CONCERNED SCIENTISTS (May 2, 2016), <https://www.ucsusa.org/resources/confronting-climate-change-new-mexico>; Exhibit 20, *Fourth National Climate Assessment, Chapter 25: Southwest*, U.S. Global Change Research Program (2018), <https://nca2018.globalchange.gov/chapter/25/>.

That said, small improvements to the proposed regulations are justified and that they promise to yield even more substantial benefits for clean air and communities in New Mexico. Below, I detail WildEarth Guardians' proposed redline modifications to the proposed regulations and rationale for calling upon the Board to adopt them as part of any final rulemaking.

A. Ensuring Transparency

It is very concerning that NMED's proposed regulations do not require any reporting of monitoring or compliance data that would be gathered by owners or operators under the proposed regulations. Although the proposed 20.22.50.112(D) is ostensibly entitled "Reporting requirements," this provision simply authorizes NMED to request and obtain information from owners or operators, but does not otherwise affirmatively require any reporting.

This is problematic from public transparency standpoint. Reporting of monitoring data to NMED is critical for ensuring the public has access to air quality information that is relevant to their health and the health of their communities. Once data is submitted to NMED, it becomes subject to public disclosure, enabling people to request and readily obtain and assess important data regarding sources of air pollution that may be of concern or interest. Absent any affirmative reporting requirements, the public will have no ability to access data gathered by owners or operators under the proposed regulations.

Ideally, the proposed regulations should require reporting of all monitoring data gathered pursuant to Part 50. However, I understand this may pose logistical and data management challenges for NMED. Accordingly, what I would propose is that the regulation be modified to require only reporting of deviations. This is consistent with reporting requirements under Title V of the Clean Air Act, which require "prompt reporting" of deviations from permit terms and conditions to regulatory authorities.¹⁵

Here, the primary concern is understanding whether and to what extent owners or operators are complying with the provisions of 20.22.50 NMAC. The public should have the ability to be informed of instances where owners or operators have not complied or are currently out of compliance. Public access to this data should not depend on whether or not the data is requested by NMED, as the proposed rule is currently drafted.

Presumably, owners or operators would be required to report excess emissions consistent with 20.2.7 NMAC. What I would propose is that deviations other than excess emissions be reported on a semi-annual basis to NMED. These deviations would primarily include deviations from monitoring and recordkeeping requirements. By reporting these deviations, the public would be able to access data from NMED and understand whether owners or operators are fully complying with the proposed regulations and ensuring full protection of clean air and public health.

Accordingly, I propose that 20.2.50.112(D) be modified to require semi-annual reporting of all monitoring events documenting deviations from any provision of 20.2.50 NMAC. The

¹⁵ See 40 C.F.R. §§ 70.6(a)(3)(iii)(B) and 71.6(a)(3)(iii)(B).

proposed addition would require reporting to begin January 1, 2022 and for reports to be submitted by the 30th day of the month following each semi-annual period. Where a monitoring event does not document any deviation, an owner or operator would be under no obligation to report. In addition, I would propose adding a provision to make explicitly clear that owners or operators subject to the proposed 20.2.50 NMAC are subject to excess emissions reporting under 20.2.7 NMAC. Below are WildEarth Guardians' proposed redlines to 20.2.50.112(D):

20.2.50.112 GENERAL PROVISION:

D. Reporting requirements:

(1) The owner or operator shall submit records of all monitoring events documenting deviations of this Part to the department. For excess emissions, reports shall be submitted in accordance with 20.2.7 NMAC. For all other deviations, reports shall be submitted semi-annually beginning January 1, 2022 and shall be submitted by the 30th day of the month following the end of each semi-annual period.

(2) Within 24 hours of a request by the department, the owner or operator shall for each unit subject to the request, provide the requested information either by electronically submitting a CDR to the department's Secure Extranet Portal (SEP), or by other means and formats specified by the department in its request.

(3) The owner or operator shall comply with all applicable reporting requirements at 20.2.7 NMAC.

B. Ensuring Full and Effective Oversight of Emissions

For the proposed rules to be effective, there must be clarity and consistency around how potential emissions are calculated and established. The applicability of much of the proposed 20.2.50 NMAC depends upon a facility's "potential to emit," which is currently defined in NMED's proposed rule as:

[T]he maximum capacity of a stationary source to emit an air contaminant under its physical and operational design. The physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and a restriction on the hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation is federally enforceable.

Proposed 20.2.50.7(GG) NMAC. If potential to emit is not calculated accurately, it could lead to noncompliance and subversion of the effectiveness of the propose regulation.

Unfortunately, there are signs that in the context of the oil and gas production sector in New Mexico, “potential to emit” may at times, not be fully and accurately calculated in practice. In particular, I am concerned that pre-production stationary source emissions at wellhead facilities, including, but not limited to, non-mobile source emissions related to drilling, hydraulic fracturing, and well completion, often may not be accounted for in the assessment of a facility’s potential to emit.

This concern is bolstered by assessments that confirm owners or operators of oil and gas wellhead sites may be commencing construction of facilities prior to obtaining permits in accordance with 20.2.72 NMAC.

In 2020, WildEarth Guardians collaborated with the UCLA Institute of the Environment and Sustainability to assess whether and to what extent owners or operators may have begun construction of wellhead facilities in the San Juan Basin prior to being permitted to construct by NMED. The final report revealed that 35% or more of assessed wellhead facilities were constructed prior to being permitted by NMED.¹⁶ The report also found a significant disconnect between oversight by NMED and oversight by the New Mexico Oil Conservation Division. The report found that this lapse in permitting oversight is likely putting the Greater Chaco region and Navajo residents of the area at great risk from unauthorized air emissions.

This report raises concerns that assessments of facility potential to emit may be overlooking emissions occurring prior to wellhead facilities beginning production of oil and gas. To the extent these emissions are non-mobile source, they are not exempt from permitting oversight or regulation by NMED. These emissions must be appropriately accounted for in analyzing a facility’s potential to emit.

To ensure clarity and effectiveness in the proposed 20.2.50 NMAC, I would propose adding a sentence at the end of the current definition of “Potential to Emit” at 20.2.50.7(GG) to clarify that at wellhead sites, non-mobile source emissions occurring prior to the commencement of operation must be accounted for in assessing potential to emit. The definition of “commencement of operation” is found at proposed 20.2.50.7(G) and essentially refers to the time at which a well is officially put into production. I believe adding clarity that potential to emit calculations must also account for any applicable emission occurring before this time is important for ensuring proper implementation of 20.2.50 and overall effective regulation of emissions from the oil and gas sector. Below is WildEarth Guardians’ proposed redline to 20.2.50.7(GG):

20.2.50.7 DEFINITIONS:

GG. “Potential to emit (PTE)”: means the maximum capacity of a stationary source to emit an air contaminant under its physical and operational design. The physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and a restriction on the hours of operation or on the type or amount of material

¹⁶ This final report is attached as Exhibit 21.

combusted, stored or processed, shall be treated as part of its design if the limitation is federally enforceable. The PTE for nitrogen dioxide shall be based on total oxides of nitrogen. For wellhead sites, calculation of PTE shall include non-mobile source emissions that may occur prior to commencement of operation.

C. Ensuring Clean Air Progress is not Undermined

Although NMED's proposed regulation will help to curtail oil and gas sector emissions, it is critical to ensure this Board provide NMED with the authority to maintain progress in protecting clean air and avoid unintended outcomes that could undermine this progress.

It's especially concerning that even in the face of mounting ozone pollution problems, particularly in the San Juan and Permian Basins, NMED continues to approve numerous permits authorizing the construction of new or modified oil and gas facilities. While the Department has the authority under its current permitting regulations to deny permits that would cause or contribute to violations of the ozone NAAQS, the Department does not have the authority to deny permits that would cause or contribute to ozone concentrations within 95% of the NAAQS. In other words, even if ozone levels rise to above 95% of the NAAQS, NMED has no authority to slow or pause the pace of permitting, even if more permitting would make the problem worse.

It is essential for the Environmental Improvement Board to ensure NMED's permitting authorities are brought into alignment with New Mexico's statute and the need to proactively safeguard public health and clean air. Accordingly, it is critical that as new regulations are adopted to control emissions, that emissions reduction gains are not erased as new stationary sources are constructed or modified.

Consistent with NMED's current permitting regulations, I would propose that the Board adopt an additional provision in the proposed 20.2.50 NMAC to ensure the Department has authority to deny permits for new or modified stationary sources that would cause or contribute to ozone concentrations in excess of 95% of the NAAQS. I would propose adding this provision in the proposed General Provisions under 20.2.50.112(A) as paragraph 11. Below is WildEarth Guardians' proposed redline to 20.2.50.112(A):

20.2.50.112 GENERAL PROVISIONS:

A. General Requirements

(11) In permitting a stationary source subject to this Part pursuant to 20.2.72, 20.2.74, or 20.2.79 NMAC, the department shall deny any application for a permit or permit revision, including any general permit registration, where construction or modification will cause or contribute to air contaminant levels in excess of ninety-five percent of any primary National Ambient Air Quality Standard for ozone. Compliance with this Part does not demonstrate that a source will not cause or contribute to exceedances of any National Ambient Air Quality Standard or New Mexico ambient air quality standard.

V. Conclusion

NMED's proposed 20.2.50 NMAC is a giant step forward for clean air in New Mexico. However, in the interest of ensuring a fully effective suite of safeguards, the proposal can and must be improved in key areas. The additional recommendations set forth above are both reasonable and necessary to assuring ozone pollution in the state is successfully confronted and reduced to protect people, communities, and future generations.