

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

**IN THE MATTER OF THE APPLICATION
OF THE NEW MEXICO OIL CONSERVATION
TO CONSIDER THE PROPOSED RULES TO
REGULATE THE VENTING AND FLARING OF
NATURAL GAS FROM OIL AND NATURAL GAS
PRODUCTION AND GATHERING FACILITIES**

**CASE NO. 21528
ORDER NO. R-21540-G**

ORDER OF THE COMMISSION

THIS MATTER came before the New Mexico Oil Conservation Commission ("Commission") on the application of the Oil Conservation Division of the Energy, Minerals and Natural Resources Department ("Division") to amend Rules 19.15.7, 19.15.18 and 19.15.19 NMAC and adopt two new rules, 19.15.27 and 19.15.28 NMAC. The Commission conducted a hearing in this matter from January 4, 2021 through January 15, 2021. The Commission subsequently deliberated in open session on February 11-12, 2021. The Commission, having considered the testimony, the record, and the arguments of the parties, and being otherwise fully advised, enters the following findings, conclusions, and order.

THE COMMISSION FINDS THAT:

1. Statutory Authority. The Commission is authorized to adopt rules, after a hearing, under the Oil and Gas Act, NMSA 1978, Sections 70-2-1 to -38 ("Act"). NMSA 1978, § 70-2-12.2. The Commission and the Division are given the duty to regulate the disposition, handling, transport, storage, recycling, treatment and disposal of produced water during, or for reuse in, the exploration, drilling, production, treatment or refinement of oil or gas in a manner that protects public health, the environment, and fresh water resources. NMSA 1978, § 70-2-12(B)(15).

2. Application and Notice. The Division filed an Application on October 15, 2020, to amend Rules 19.15.7, 19.15.18 and 19.15.19 NMAC and to adopt new rules 19.15.27 and 19.15.28 NMAC to implement statutory additions and amendments to the Act related to the regulation of venting or flaring of natural gas by natural gas producers. The Application included a draft of the proposed rule change and a proposed legal notice. 19.15.3.8(A) NMAC.

3. At a public meeting on November 4, 2020, the Commission decided to hold a hearing on the proposed rule change and scheduled the rulemaking hearing to begin on January 4, 2021. 19.15.3.8(C) NMAC. The Commission determined that the hearing would be held in a virtual and telephonic format due to the public health restrictions in place to combat the COVID-19 pandemic. The Commission decided to require that anyone wishing to present technical

testimony identify all witnesses to be presented at the hearing and a summary of each witness's anticipated testimony, and that all members of the public notify the Commission Clerk if they wished to address the Commission during the hearing. The Commission also provided a written comment period of sixty-six (66) days, from November 4, 2020 to January 8, 2021.

4. Pre-hearing statements were submitted by the Division; Climate Advocates representing the Center for Civic Policy, Conservation Voters New Mexico Education Fund, Diné C.A.R.E., Earthworks, Natural Resources Defense Council, San Juan Citizens Alliance, Sierra Club, 350 New Mexico; the Environmental Defense Fund ("EDF"); the New Mexico State Land Office and the New Mexico Oil and Gas Association ("NMOGA"). The parties presented a mix of technical and non-technical witnesses, which included anticipated written testimony provided with the pre-hearing statements, as well as oral testimony during the hearing. In each of their respective pre-hearing statements, the parties offered modifications to the proposed rule changes. Additionally, the Commission reviewed all written comments received before and during the hearing, as well as oral comments made during the hearing. Comments included objections to the rule changes, support for the proposed rule changes, as well as suggested alternative language and other modifications of the proposed rules.

5. Proposed Rule Changes. The Division proposed to amend Rules 19.15.7, 19.15.18 and 19.15.19 NMAC and adopt two new rules, 19.15.27 and 19.15.28 NMAC. The proposed rule changes and new rules generally include the following:

- a. Adoption of a new rule, 19.15.27 NMAC, to establish requirements for the operators of production facilities to report and reduce the venting and flaring of natural gas;
- b. Adoption of a new rule, 19.15.28 NMAC, to establish requirements for the operators of natural gas gathering systems, including gathering pipelines, to report and reduce the venting and flaring of natural gas;
- c. Amendment of 19.15.7 NMAC to rename a form, add new forms, and provide instructions for the use of those forms;
- d. Amendment of 19.15.18 NMAC to remove a provision requiring the operators of production facilities to file an application to flare natural gas;
- e. Amendment of 19.15.19 NMAC to remove two provisions regarding the venting of natural gas at production facilities.

6. Public Hearing. The Commission conducted a virtual public hearing on the proposed rule changes on January 4, 2021 through January 15, 2021. The Commission subsequently deliberated in open session on February 11-12, 2021.

7. Documentary Evidence. In conjunction with their prehearing statements, each of the parties provided proposed exhibits for the hearing. Party exhibits generally included summaries of written technical testimony and corresponding presentations, witness résumés, proposed changes and additions to the rule amendments, journal articles and reports related to venting or flaring of natural gas, as well as news publications related to venting or flaring of natural gas and negative effects stemming from venting and flaring of natural gas. Each Commissioner reviewed

the proposed exhibits before, during and after the rulemaking hearing and subsequently admitted into the record such exhibits during the course of the rulemaking hearing.

8. Public Comment. Members of the public were required to notify the Commission Clerk in advance of the meeting if they planned to provide public comment. The Commission heard seventy-one (71) public comments both prior to and during the hearing. The Commission provided multiple opportunities for these individuals to provide public comment during the hearing. However, all individuals that submitted a request did not appear during the public comment periods. Comments were provided by several in their individual capacity, as well as on behalf of both various organizations, public and private.

9. Public comment included substantial support for the proposed rule changes, the methods used to draft the proposed rules, and the hearing procedures more generally. An overwhelming majority of commenters voiced support for increasing capture of what historically has been vented or flaring natural gas, averring that such capture will reduce general environmental damage, increase public health more generally and specifically in Hispanic and Native American communities, reduce detrimental impacts on the agricultural and livestock industries and increase the payments to landowners who are party to royalty agreements with producers. Other comments included requests that the Commission create much more stringent regulations, including an across-the-board prohibition on any venting or flaring of natural gas for any reason coupled with harsher penalties for those violating the stricter regulations.

10. Written Comments. The Commission received one-hundred and eighty written comments from several individuals and governmental and nongovernmental organizations before and during the hearing. The Commission formally entered all received written comments into the hearing record. The Commission reviewed these comments as part of the record of this hearing. Multiple written comments included supporting technical exhibits, including journal articles, newspaper articles, reports, and statistical data, which were also entered into the hearing record and reviewed by the Commission.

11. Division Testimony. The Division presented four (4) witnesses in its case-in-chief: Tiffany Polak; Matthew Lepore; James Bolander; and Brandon Powell. Each Division witness was subject to cross-examination by the other parties and by the Commissioners and Commission Counsel.

12. The Division proffered Deputy Director Polak as witness on the history of how the proposed rules and amendments came about. Deputy Director Polak provided her resume and oral testimony on behalf of the Division, detailed the statutory basis for the proposed rules and, in particular, she addressed the issue of waste in terms of the rulemaking jurisdiction granted to the Commission. Further, Deputy Director Polak testified that the proposed rules and amendments were drafted in accordance with the New Mexico Governor's Executive Order requiring the Energy, Minerals and Natural Resources Division ("EMNRD") to curb oil and gas methane emissions, particularly in the form of waste reduction. She noted that rules promulgated under this Executive Order must adhere to key principles: science, innovation, collaboration and compliance.

13. Deputy Director Polak emphasized that, while the science principle is based in engineering, the proposed rules and amendments were subject to a significant amount of collaboration with stakeholders ranging from the industry to individual New Mexican communities, ensuring that the proposed rules and amendments secured overall buy-in. Deputy Director Polak explained the collaboration process through a history of the proposed rules and amendments, including explanations of how the collaboration process included scientific data.

14. Deputy Director Polak testified about the State's need to collect high-quality data from producers for all points within oil and gas midstream and production sectors, while also working to reduce the reporting and compliance burdens on operators. Deputy Director Polak also emphasized that the proposed rules and amendments are flexible and incentivize innovation from operators in reducing the venting and flaring of natural gas.

15. During both direct testimony and cross-examination from the parties and the Commission, Deputy Director Polak reiterated that the proposed rules and amendments factor in economic issues for operators and others, with the end goal being reduction of vented or flared natural gas that, in turn, leads to captured and salable products. She noted, repeatedly, that she intended for her testimony to give a roadmap of how the proposed rules and amendments came into being, which would be followed by more detailed and technical testimony from other Division witnesses.

16. Matthew Lepore testified about his legal experience, which focused almost exclusively on energy issues in which he represented both public and private clients, including a role as the director of the Colorado Oil and Gas Conservation Commission. Mr. Lepore detailed his experiences in Colorado rule promulgation substantially similar to the proposed amendments and rules at issue in this matter. In particular, Mr. Lepore testified about the proposed new rules, parts 27 and 28.

17. Mr. Lepore outlined the legal aspects of parts 27 and 28 by examining the language of those subparts, but also explaining the need to amend parts 7, 18 and 19. Mr. Lepore broke down all proposed additions and alterations as follows:

- a. The Division's intent of part 27, a new rule, is to reduce waste of natural gas by regulating venting and flaring from wells and production equipment and to obtain complete and accurate measurements and reports of the volumes of natural gas vented or flared.
- b. Part 27 imposes a 98% capture standard upon producers. This number is a target, not an end-point.
- c. Part 27 divides into three sections: part 7 – definitions; part 8 – regulation of venting and flaring; and part 9 – statewide natural gas capture requirements and accounting.
 - i. Part 7 provides a definition for the ALARM, advanced leak and repair monitoring. ALARM is applied to technology that is not required by

state or federal law with the intent to encourage operators to use advanced or emerging technologies to identify leaks or releases.

- ii. Part 7 defines average daily well production and average daily facility production. The intent with this definition is to include stripper wells and low-production wells as regulated wells under the proposed rules and amendments. Mr. Lepore provided examples to illustrate why the definitions exist and how the Division arrived at them.
 - iii. Part 7 defines emergency. The provided definition holds that vented or flared gas during an emergency is not considered waste and not counted against an operator for gas capture purposes. The Division borrowed parts of this definition from BLM regulations. Failure to limit production when it will exceed capacity is not an emergency because planning avoids those situations. Scheduled maintenance is not an emergency. Venting or flaring of natural gas for more than four hours after a notification, with such flaring or venting caused by an emergency, constitutes an emergency. Operator negligence is not an emergency, nor is a recurring equipment failure.
 - iv. Part 7 defines a malfunction. Venting or flaring during a malfunction does count against the operator.
- d. Part 28 embodies similar objectives and applies to midstream industry and operations including gathering and boosting stations and pipelines.
 - e. Part 28 has a unique subsection, part 9, that relates to location requirements such as the location of gathering systems, mapping requirements and related data.
 - f. Parts 27 and 28 build around the concepts outlined in the Methane Guiding Principle (“MGP”), a coalition of industry institutions, NGOs and academics. The MGP provides for best practices in reducing methane emissions for the oil and gas sector. Mr. Lepore indicated that the MGP provides a summary for data collection, goal setting, technological development and engagement that parts 27 and 28 address.
 - g. Part 27, subpart 8 prohibits venting and flaring that constitutes waste. Subpart B deals with drilling, subpart C with completions and subpart D with production operations. Each sets forth specific circumstances allowing venting or flaring by operators. Subpart E outlines performance standards for production equipment with the aim to minimize waste. Subpart F details measurement requirements. Subpart G concerns daily reporting requirements for vented or flared hydrocarbons.

- h. Part 27, subpart 9 and part 28, subpart 10 present the gas capture requirement, and third-party verification. Additionally, a gas management plan for exploration and production is found here.
- i. Part 28, part 8 is similar to Part 27's version. Subpart A provides general exceptions, C requires operators to generate operations plans that minimize venting or flaring.
- j. Part 28, subpart 9 provides location requirements addressed later by Mr. Bolander, but set forth requirements for GIS map submission and required data surrounding the equipment found in the GIS map.
- k. Subpart 8 of parts 27 and 28 hold that venting or flaring that constitutes waste is prohibited. Operators are obligated to maximize recovery and minimize waste. Further, in all circumstances operators should flare rather than vent unless this would pose a risk to safe operations or personnel safety, and venting is a safer alternative than flaring.
- l. Subparts B, C and D of part 27 deal with the three phases of operation: drilling, completion and production. Under drilling operations, operators must capture or combust natural gas if technically feasible, using best industry practices and control technologies. Concerning the completion phase, during initial flowback, the flow shall be safely directed to a separator and separated safely as soon as technically feasible. Concerning the production phase, best practices implementation is required, including during manual liquid unloading with a live person on-site. However, an exception is made for exploratory wells.
- m. Subpart B also sets forth equipment performance standards for separators, storage tanks, flares, flare stacks and other equipment. Other required equipment includes automatic gauging equipment on new storage tanks, properly sized flare stacks, continuous pilots or auto-igniters with the latter two required to retrofit older flares.
- n. AVO (audio, visual and olfactory) inspections are required to identify leaks and other emission issues and must be conducted on a weekly or monthly basis depending on well natural gas production volume.
- o. Performance standards tie to a robust set of reporting requirements designed to produce quality data for each producer, especially baseline gas capture percentages, including data collection concerning contaminants that enter a producer's system. Mr. Lepore addressed calculation methods to be used by producers to assist the Division in determining compliance with the 98% capture rule.

- p. Creation of new forms, such as the C-115B, to capture additionally needed venting and flaring data, including venting or flaring that is not considered waste under the proposed rules and amendments to help identify actual waste.
- q. Mr. Lepore also outlined how producers must come into compliance, if out of compliance, with the proposed capture rule, including mandatory plans filed with the Division and verification of compliance with such plans.
- r. Mr. Lepore explained the accounting methods required of operators by the proposed rules and amendments, including how a operators may acquire credits for use of new technologies, among other things.
- s. Mr. Lepore also explained how APD's work with the proposed rules and amendments to ensure gas is capture per the capture rule.

18. Mr. Bolander testified about his 35 years of experience working for energy producers as a petroleum engineer, which included multiple executive operations and executive engineer roles. Currently Mr. Bolander works as a consultant for both producers and environmental groups alike. Like all prior Division witnesses, Mr. Bolander was involved in the collaborative effort that resulted in the proposed amendments and rules.

19. Mr. Bolander provided a technical discussion concerning parts 27 and 28 of the proposed new rules that addressed the scope of both parts 27 and 28. In particular, Mr. Bolander explained that both parts 27 and 28 embody the same objective, to wit: natural gas waste reduction. To accomplish this objective, parts 27 and 28 achieve three key components: waste reduction through regulating venting and flaring activities; obtaining complete and accurate measurement of venting and flaring volumes; and reporting of venting and flaring volumes.

20. Mr. Bolander explained that both parts 27 and 28 provide for robust measurement reporting requirements on producers that, in turn, support the operational requirements for producers. Further, Mr. Bolander detailed that both parts 27 and 28 contain identical definitions for what constitutes an emergency on the part of producers that justifies the need to vent or flare natural gas. The same applies to the definitions of unscheduled maintenance or malfunctions, per Mr. Bolander. Mr. Bolander avers that such definitions link both parts to allow continuity of regulation between upstream and midstream producers, removing any such producer's ability to blame another for vented or flared emissions, thus codifying producer accountability that does not exist absent the rule.

21. Mr. Bolander then addressed the distinction between flaring versus venting and why flaring is preferable unless flaring is technically infeasible or would pose a safety risk. Mr. Bolander stated that the phrase "technically infeasible" comes from BLM Rule 3179.6, which addresses venting limitations for producers and why that term should be understood from an engineering perspective. Mr. Bolander provided an example of when flaring is technically infeasible: when gas rates and flow pressures are too low to operate a flare. Another example provided by Mr. Bolander occurs when flowing conditions vary such that there is not enough flow or pressure to maintain a consistent flare. Finally, Mr. Bolander explained that the presence of

large amounts of nitrogen in the natural gas precludes igniting the flare, thus making flaring technically infeasible. Mr. Bolander provided multiple other examples to demonstrate application of the “technically infeasible” terminology used in parts 27 and 28.

22. Mr. Bolander testified about capture requirements during the drilling process, specifically those found in part 27. Mr. Bolander stated that, during most drilling operations, immeasurable amounts of natural gas may vent from the wellbore and such gas is not subject to capture. However, per Mr. Bolander, once gas is separated from other substances, when flow conditions stabilize, capture then should be technically feasible unless no sales point for the gas is available and thus flaring is permitted under part 27.

23. Mr. Bolander testified about timeframes during the production cycle, specifically completion, production, initial flowback and separation flowback, and why those timeframes are important under section 7 of part 27. Mr. Bolander explained that these stages possess their own venting events as outlined in part 27, as well as revised deadlines for reporting such events to the Division, now 30 rather than 60 days after the fact.

24. Mr. Bolander testified about the process of manual unloading of a well, which occurs when a shut-in well is reopened and liquids that prevent well flow are placed in a tank to allow proper well flow. Part 27 mandates that an operator or its representative be on-site to ensure that the wells salable product is put to market as soon as possible, thereby preventing waste.

25. Mr. Bolander addressed equipment requirements that comply with parts 27 and 28. First, Mr. Bolander revealed that improper equipment design leads to unnecessary venting and flaring of gas, which in most cases comes in the form of extended venting or flaring events. Improperly sized equipment also complicates maximizing output from the well, again a form of waste. Mr. Bolander transitioned to proper monitoring equipment on storage tanks, which leads a producer to open a thief hatch and subsequently the waste of gas due to venting. Mr. Bolander discussed flare stacks, which must be properly sized based on gas composition, volume, pressure ranges and the need for auto-igniter or continuous pilots. All of these equipment concerns must be consistent with the New Mexico Environmental Department’s AVO standards.

26. Mr. Bolander included information about measuring flow of gas at essentially all stages of the production process, including flow to flares, but also recognized the issue of gas volumes too small or too impractical to measure. Mr. Bolander pointed out the equipment requirements are part of the “robust data collection” and reporting processes.

27. Mr. Bolander transitioned to part 28’s operations standards. First, operators must now submit to OCD and subsequently implement operations plans to minimize leaks and waste. Mr. Bolander explained that part 28 does not mandate specific plans for operators, leaving room for innovation and best practices implementation. Section C prohibits venting during routine maintenance, with a preference for flaring unless technically infeasible or safety is an issue. Similar standards apply to midstream operators and pipelines, including the use of AVO inspections to, again, avoid waste through venting or flaring.

28. Mr. Bolander explained the new notification process in part 28 for midstream operators to notify upstream providers of pending maintenance to prevent upstream operator venting or flaring. Mr. Bolander previously testified that this arrangement provides for prevention of waste and accountability between midstream and upstream operators. Per Mr. Bolander, part 28 requires fourteen (14) days' notice for scheduled maintenance and for emergency matters, requires a 12-hour verbal and 24 hour written notice window, all of which is designed to allow upstream providers the best possible chance to avoid any needless venting or flaring.

29. Mr. Bolander outlined additional reporting matters, such as reporting of venting or flaring events for both drilling and completion operations. One objective with such data collection is to help OCD understand what gas volumes result in no in-flow and therefore result in gas volumes too small to measure. Mr. Bolander also addressed the topic of exploration well reporting, which is designed to add a new category of data alongside that from drilling and completion operations and avoid lumping exploration wells in with production data. Mr. Bolander explained that the purpose behind these particular reporting requirements is to avoid estimation by operators, which does not produce reliable data.

30. Mr. Bolander continued his discussion about reporting requirements, but focusing on the issue of contaminants such as nitrogen, hydrogen sulfide and carbon dioxide that may be used during the production process and that could cause issues with gas quality, ultimately leading to an operator's need to vent or flare. Mr. Bolander made clear that reporting the use of such contaminants assists the Division in identifying other compliance or reporting issues, such as improper equipment, that generates preventable flaring or venting events.

31. Mr. Bolander explained the concept of beneficial use of gas based on the constant monitoring of gas loss from a given point in the process to another given point, inclusive of lost impurities or removal of a particular product from the flow. Mr. Bolander explained how an operator should arrive at this data based on calculations designed to identify losses.

32. Mr. Bolander testified on other, non-production reporting, such as a provision requiring operators to provide the GIS maps of operator systems to the Division, which allows the Division to identify which entity owns what pipelines, track leaks and identify lines with chronic problems, and improves the Division's ability to respond to leaks, including securing help from local emergency management agencies. GIS maps will also identify technical details of each line, such as composition, diameter, locations and volumes of vented or flared gas.

33. Finally, Mr. Bolander concluded his testimony with an explanation of why the 98% capture requirement by 2026 exists, which is to curtail waste, improve capture, and improve data quality to assist the Division.

34. Brandon Powell, engineering bureau chief for the Division, began his testimony by providing a high-level review as to how the proposed and amended rules will affect the Division's operations, starting with part 27. Mr. Powell explained that part 27 was designed to govern upstream operators insofar as authorized venting and flaring events, those events not deemed to be waste under part 27. Mr. Powell went on to discuss that part 27 imposes a general obligation upon

the operator to maximize recovery of natural gas. Part 27, section B sets obligations of operators for venting and flaring during drilling, with a preference for flaring over venting.

35. Mr. Powell testified that part 27, section 8, section C addresses permissible venting or flaring during completion operations. He explained that section C allows for extended timelines for completion operations if gas quality issues arise. Following up on Mr. Bolander's testimony, Mr. Powell stated that there are two sub-categories of completion operations that section C regulates: non-separation and separation phases; Mr. Powell noted that neither phases were subject to regulation for the first sixty (60) days of completion operations prior to the proposed part 27. That situation is now remedied and the current objective is to require operators to maximize capture of natural gas rather than venting or flaring.

36. Mr. Powell testified that part 27, section 8, section D aims at the production phase of operations, banning routine flaring. Mr. Powell then addressed section E, which sets forth performance standards and inspection intervals for wells in their production phase, performance of which must be communicated to the Division. Mr. Powell testified that AVO inspections would reduce well leaks (waste prevention) as well as assist in monitoring of shut-in or otherwise inactive wells, including wells that the Division identified as having leaks that were not previously discovered.

37. Mr. Powell continued with part 27, shifting to section F, which governs measurement of vented or flared natural gas. Section F standardizes operator reporting to enhance data accuracy, giving the Division a reliable and consistent picture of well operations. Part of the standardization process, per Mr. Powell, is the change to the C-129 reporting form from an authorization form to a reporting form, again to assist the Division to understand when and where venting or flaring occurs. Mr. Powell explained that the updated C-129 form is not meant to be done in duplication of the C-141 form and reduces the need for the C-141 form for natural gas releases. Further, the public will benefit from this change, which includes Division use of automated procedures to generate confirmed amounts of vented or flared natural gas by operator and well site, per part 27 section G.

38. Mr. Powell addressed the royalty owner language in part 27, section G, explaining that language will help identify losses to royalty owners from vented or flared gas on a monthly basis. Mr. Powell further explained that the royalty loss data would help royalty owners enforce any contractually based maximization of capture or waste reduction requirements against operators, a new reporting concept that previously did not exist in any Division rules.

39. Mr. Powell then transitioned to a discussion concerning the 98% gas capture requirements and accounting methods used to achieve that objective. Mr. Powell asserted that the 98% gas capture requirement is unique in the United States and sets forth a statewide threshold and expectation for operators. The gas capture threshold also provides flexibility for operators as they work toward achieving compliance.

40. Mr. Powell then addressed the accounting methods used in determining compliance with the 98% capture requirement, specifically describing what the Division refers to as the ALARM system. The intent behind ALARM is to create an incentive for operators to foster

innovation while giving the Division a clearer picture of the compliance status for a particular operator. In addition to ALARM, part 27 allows the Division the ability to use third party vendors to independently verify operator compliance, as well vet the accounting methods of the operator.

41. Mr. Powell then discussed the gas management plan found in part 27. The plan requires operators to provide their plans to the Division prior to production to ensure takeaway capacity for each well. Mr. Powell explained that the gas management plan also forces cohesion between upstream and midstream operators.

42. Mr. Powell shifted topics, from part 27 to part 28, with part 28 regulating midstream operators. Like part 27, part 28 prohibits venting and flaring of natural gas outside certain exceptions with the primary goal being waste reduction. Part 28 also contains substantially similar provisions as part 27 concerning performance standards, equipment and inspections. Mr. Powell expressed that part 27 and part 28 are designed to work in tandem and present similar standards for both upstream (part 27) and midstream (part 28) operators. Mr. Powell added that the Division seeks to use performance standards and equipment standards for the purpose of evaluating whether an operator is using either standard to minimize venting, including leaks, and flaring. Such information, per Mr. Powell, will allow the Division to work much more closely with operators to ensure not just compliance with the proposed rules, but also to effectively identify operational (large scale) deficiencies down to equipment (small scale) deficiencies.

43. Mr. Powell, like Mr. Bolander, explained that both parts 27 and 28 foster communication and accountability between upstream and midstream operators to avoid needless venting and flaring through effective communication of routine and emergency maintenance issues. Mr. Powell noted that the proposed four-hour notification window for emergency matters, from midstream to upstream operators, is a critical component of the notification requirement, one that will reduce waste on the part of the upstream operators.

44. Mr. Powell testified that the Division needs reporting on vented or flared natural gas to assist it in identifying where, when and how often venting or flaring occurs, something that currently does not exist in the Division's regulatory structure.

45. Regarding mandatory GIS map submissions from operators, with extensive detail on equipment, flow rates and other operational information, Mr. Powell stated that this type of data is essential in identifying operators or particular sites or equipment during an emergency. Mr. Powell addressed the value of annual updates in terms of time saved and accountability for deficient operators.

46. Mr. Powell testified that all of the information collected from operators results in a holistic view of venting and flaring in New Mexico, which in turns allows the Division to identify problems much faster and more accurately.

47. Mr. Powell explained that the Oil Conservation Commission possesses a long institutional history of grappling with vented or flared natural gas stemming back to 1970. Early Commission findings raised the same issues the Division found in its preparation of the proposed rules and amendments, which Mr. Powell asserted validates the current rulemaking. Mr. Powell

then provided a lengthy history of Division and Commission orders that attempted to address venting and flaring, but ultimately fell short, hence the proposed amendments and rules.

48. Mr. Powell commented further that the proposed amendments and rules seek to modernize venting and flaring regulations, pointing out that this rulemaking is the first substantial revision of venting and flaring regulations in forty-eight (48) years.

49. Mr. Powell then turned to the amendments to 19.15.7 (forms and reports), 19.15.18 (production operating practices) and 19.15.19 (natural gas production operating practices) NMAC. Mr. Powell explained that the amendments to these rules largely focus on non-substantive changes. Specifically, part 7 now identifies the Division properly, includes a reorganization of the regulation, and adds in information such as specific forms to be used that were not previously in the regulation.

50. Mr. Powell detailed that part 18 is amended to identify the correct agency in the first part, corrects the formal citation in the third part and conforms language to the State Records Center's rules in the eighth Part F and K. In the 11th and 12th parts, sections replaced by Parts 27 and 28 were removed and the 19 sections are reserved to avoid the need to renumber regulations in the future. In the 14th part, the section title now conforms to current usage and 16-B conforms language to current use.

51. Mr. Powell explained that part 18 properly identifies the Division, corrects the formal citation to the rule and removed sections replaced by part 27.

52. Mr. Powell concluded his direct testimony by averring that the proposed amendments and rules, about which he testified, are consistent with the Oil and Gas Act, the New Mexico Governor's executive orders, both of which seek to prevent waste, protect life and reduce methane emissions based on the best science available, the creativity of industry engineers and stakeholder involvement.

53. Climate Advocates' Testimony Climate Advocates presented eleven (11) witnesses during the rulemaking hearing: Brenda Ekwuzel; Alexandra Teitz; David McCabe; Don Schreiber; Lesley Fleishman; Thomas Singer; Charles Saillan; Nathalie Eddy; Mario Atencio; Kendra Pino; and Adella Begaye. These witnesses were subject to cross-examination by the other parties and by the Commissioners and Commission Counsel.

54. Ms. Begaye introduced herself to the Commission as a member of the Navajo Nation raised in her ancestral lands near Chuska Mountain. Ms. Begaye testified that she obtained a bachelor's degree in science and nursing who worked as a health educator, registered nurse, and public health administrator. Ms. Begaye stated that she retired in 2016 as an Indian Health Service director of public nursing. Ms. Begaye is the founder of Dine C.A.R.E. and serves as its president.

55. Ms. Begaye detailed that Dine C.A.R.E. advocates for traditional Navajo teachings to protect and provide a voice for all life.

56. Ms. Begaye explained that some Dine C.A.R.E. members live in eastern Navajo communities that are negatively impacted by oil and gas development. Ms. Begaye averred that the Navajo Nation has not prospered due to oil and gas development, despite resource extraction from tribal lands, leaving the Nation polluted in terms of air, water and desecrated land.

57. Ms. Begaye testified that Navajo members suffer a variety of illnesses due to oil and gas pollution.

58. Ms. Begaye stated she supports the Division's proposed rules, but sought additional amendments that require immediate public notice when human health and safety are at risk. Ms. Begaye also proposed denial of new drilling permits when an operator is out of compliance.

59. Ms. Begaye detailed the various toxic emissions that exist over the Four Corners region, identified *via* satellite and other methods, including benzene, formaldehyde, tagaline and other volatile organic compounds. Ms. Begaye then listed potential effects of exposure to any or all of the described toxic substances.

60. Ms. Begaye described how the referenced effects harm an already marginalized people, including the significant overrepresentation of respiratory, neurological and pulmonary illnesses in the eastern Navajo population. Ms. Begaye also stated that the Navajo Nation government is ill-equipped to handle environmental protection. Therefore, per Ms. Begaye, the regulation of methane emissions is critical to the health of the Navajo Nation.

61. Dr. Ekwurzel introduced herself by describing her background, training and experience. Dr. Ekwurzel explained that she earned her Ph.D. in climate science from Columbia University and subsequently taught at the University of Arizona and is now the Director of climate science at the Union of Concerned Scientists.

62. Dr. Ekwurzel, through her prepared presentation, testified that New Mexico's methane emissions are outsized compared to the rest of the nation and that half of these methane emissions ties directly to the oil and gas sector. Dr. Ekwurzel explained that methane retains 80% more heat per molecule than carbon dioxide over a 20-year window, which makes methane a significant contributor to global warming. Because of this, temperature increases in New Mexico proceed at a greater rate than the global average. Dr. Ekwurzel further testified that producing states, such as North Dakota, also suffer higher amounts of airborne methane.

63. Dr. Ekwurzel testified that the New Mexico temperature increases are leading to a scenario in which the number of days over 90 degrees Fahrenheit will continue to increase, perhaps not consecutively, but cumulatively over time. Such temperature increases lead to increases in heat-related illnesses. Dr. Ekwurzel then explained that 100-degree days and 105-degree days lead to additional heat-related illnesses.

64. Dr. Ekwurzel outlined that, by mid-century, the State will endure two months' worth of 90 degree or greater days, which in turn will generate increased wildfire risks. Wildfires generate their own risks, per Dr. Ekwurzel, including damaging water treatment facilities,

destroying crop habitable zones, reducing flow from the Colorado Basin upon which Northern New Mexico depends, and increasing water evaporation from the soil.

65. Dr. Ekwurzel testified that the above-noted conditions ultimately lead to fiscal losses to New Mexico totaling into tens of millions of dollars.

66. Alexandra Tietz introduced herself by detailing her significant background in climate policy development, regulatory law and legislation, which included constructing regulations and supervising teams for BLM methane emission regulations during the Obama Administration. Ms. Tietz outlined her background, which includes a Masters of Science degree from the Yale University School of forestry environmental studies and a Juris Doctorate from Boalt Hall, UC Berkeley. Ms. Tietz testified that she also has experience in the economic aspects of environmental regulation, including technical components of such regulations. Ms. Tietz further stated that she advised the EPA through its office of general counsel

67. Ms. Tietz proceeded, stating that she thinks the proposed regulations are critical to the conservation of New Mexico resources, but also to securing revenues that belong to the people of New Mexico, as well as to combat climate change and bringing better overall health to the State. However, Ms. Tietz also intended to propose recommendations to strengthen the proposed amendments and rules.

68. Ms. Tietz detailed her understanding of routine flaring, which is ‘flaring that occurs during the normal production of the oil and in the absence of sufficient facilities to utilize gas on site, dispatch it to market, or reinject it.’ Ms. Tietz stated that this practice is unnecessary and is a form of waste; Ms. Tietz further commented that routine flaring should not be tolerated at all.

69. Ms. Tietz relayed that the amount of natural gas flared in New Mexico in 2019 constituted enough natural gas to fuel 80% of New Mexican homes, but due to the Division’s incomplete data, the amount of flared natural gas may be far greater.

70. Ms. Tietz testified that some producers limit or no longer flare based on takeaway capacity.

71. Ms. Tietz explained that operators and producers have total control over flaring.

72. Ms. Tietz testified that, while some producers are no longer flaring, additional regulatory pressure is needed to conform the industry to reduce or eliminate flaring practices. Major international producers recognized the flaring issue as a problem and signed on to initiatives committing themselves to reducing or eliminating flaring. Even producer shareholders, who pressure the producers to resolve the flaring matter, have not had the desired effect, even when investors with assets under management in excess of hundreds of billions of dollars take a stand. However, no amount of voluntary action to date by producers proved sufficient to address the flaring issue.

73. Ms. Tietz explained that producers are taking action regarding flaring because it is in their long-term interests to do so; the social license for production is at risk and is appearing on producer bottom-lines.

74. Ms. Tietz testified that, while venting harms the environment on a volumetric basis, flaring creates its own problems, such as the release of carbon dioxide and methane. Flaring also goes on for long periods, per Ms. Tietz, displaying the wasteful nature of the practice. A further effect of the damage done by flaring is local government action barring construction that incorporates natural gas lines. The EU, among others, is addressing methane issues.

75. Ms. Tietz then turned to the economic impacts of natural gas waste for New Mexico. Ms. Tietz pointed out that lost revenues to producers become lost tax revenues for the State. Continuing to allow such waste runs contrary to the best interests of New Mexicans and, in particular, because such waste shifts the burden of waste disposal onto the public. Ms. Tietz testified that the health impacts of natural gas waste disproportionately affect Native, Hispanic, and other communities.

76. Ms. Tietz stated that she broadly supports the Division's proposed rules. However, Ms. Tietz proposed some enhancements to the proposed rules and amendments, including: prohibiting venting during completions and recompletions; strengthening flare stack specifications; requiring faster and comprehensive replacement or retrofitting of flare stacks without auto-igniters; rerouting of gas or flaring of gas during maintenance of pipeline blowdowns; and requiring volumes of flared gas from controlled storage tanks to be included under the reporting provisions.

77. Ms. Tietz testified that flaring is generally preferred over venting. Ms. Tietz shared her experiences with this issue during her BLM tenure, which included her concern about perverse incentives for producers to vent rather than flare due to restrictions on flaring. Venting is harder to detect than flaring and thus restrictions to control this incentive are needed.

78. Ms. Tietz recognized that the Division's proposed rules and amendments properly deal with routine flaring, but enforcement is needed to reduce waste and pollution.

79. Ms. Tietz shifted to the gas management plan found in part 27, which will allow the Division to identify non-compliance with venting and flaring restrictions, including enforcement. Ms. Tietz explained that regulations that set compliance as a baseline are ideal and the proposed rules and amendments do not quite reach that goal. An example of this failure occurs when it permits a producer to evaluate potential, alternative uses for natural gas, rather than mandating that a producer select and implement a potential, alternative use. Further, Ms. Tietz advocated for language imposing mandatory denial of an APD if a producer fails to provide a compliant gas management plan. Ms. Tietz then explained that, upon application for an APD, the operator-supplied gas management plan should state whether the operator has existing capacity to gather the anticipated production and what future capacity the operator has to handle anticipated production.

80. Ms. Tietz testified that proposed requirements for maintenance communications between upstream and midstream operators are inadequate given the waste that has and will result from failures to communicate. Thus, Ms. Tietz proposed that operators certify information sharing between each other, including date, time and volumes at issue.

81. Ms. Tietz supported the 98% gas capture rule, but wishes to see denials for APD's for failure to demonstrate an operator's plans to capture wasted gas. Further, Ms. Tietz believes that the 98% capture rule does not go far enough. Operators will still waste large volumes of gas, potentially enough volume of burned gas to serve 450,000 New Mexican homes.

Ms. Tietz then addressed the waste stemming from well completions and recompletions. Ms. Tietz stated that the EPA's efforts to address waste during completions and recompletions has not worked as intended and the Division's proposed rules do not effectively address proper use of a separator and do not contend with operator difficulties with flowback. To resolve these issues, Ms. Tietz proposed that capturing or flaring, but never venting, throughout the flowback process, including initial flowback, and particularly by specifying technical aspects of separator design, is consistent with recent EPA regulatory revisions.

82. Don Schreiber introduced himself as a rancher in Northwest New Mexico in the San Juan Basin, Rio Arriba County, which is subject to oil and gas development.

83. Mr. Schreiber explained that 22 natural gas wells were drilled on around his property related to a project between BLM and ConocoPhillips ("Conoco"). Mr. Schreiber testified that Conoco led him to believe it was involved in various "green" projects for multiple phases of production, including supervision under EPA programs and partnerships. Mr. Schreiber participated in observation of Conoco's practices in the field, including emergency events such as rig fires and blowouts that resulted in significant property damage and personal injuries. Mr. Schreiber averred that these events are tied to failures to control methane emissions. Mr. Schreiber acquired an elementary drilling certificate from the University of Texas, Permian Basin and served as a member of the Society of Certified Insurance Counselors teaching oil and gas risk management.

84. Mr. Schreiber, prior to the above events, bought his ranch to create a salable model of sustainable agriculture using nontraditional practices with the goal of reinvigorating the range. Over time, the involvement of oil and gas production on his land resulted in thefts, property damage, increased traffic, pollution and other issues that, as far as Mr. Schreiber could determine had gone on for 50 years.

85. Venting and flaring of gasses were common and noticeable, per Mr. Schreiber, and especially in the form of black smoke waves that descended on his property.

86. Mr. Schreiber stated that, as the wells subject to the agreement with Conoco began operation, "green completion equipment" was in use with no issues. Subsequently, Hilcorp Energy ("Hilcorp") purchased Conoco's acreage in the San Juan Basin. When Mr. Schreiber and his wife met with Hilcorp, Hilcorp explained that it may not elect to use green completion or reduced emission equipment. Hilcorp had no trained crews and no green equipment on hand to use, per

Mr. Schreiber. Despite efforts to prevent Hilcorp from using standard technology, Mr. Schreiber was unsuccessful and Hilcorp did not honor the prior agreement with Conoco and proceeded accordingly.

87. Mr. Schreiber testified about the waste resulting from Hilcorp and other producers' wells in the San Juan Basin, which Mr. Schreiber contends is significant amount of salable gas.

88. Mr. Schreiber contends that industry excuses for not capturing more emissions are not based on reality and that significant gas capture is feasible.

89. Mr. Schreiber testified that, if the proposed rules and amendments are not adopted, the harm to New Mexicans would continue. Thus, Mr. Schreiber stated he supports the proposed rules and amendments.

90. Thomas Singer, Ph.D. introduced himself as the senior policy adviser at the Western Environmental Law Center. Dr. Singer holds an MBA from Stanford Graduate School of Business and a Ph.D. in international business from George Washington University. Dr. Singer shared that he has 15 years of experience in policy development related to oil and gas methane waste and emissions, as well as experience working with state and federal regulations.

91. Dr. Singer testified that he prepared his statement for this rulemaking based on reviewing NMOGA reports, C-129 forms, a GaffneyCline report, and economic data concerning the oil and gas industry's response to oil price declines in 2020.

92. Dr. Singer explained that NMOGA's 2020 report ignores long-term routine flaring. Dr. Singer further testified that NMOGA's claims about temporary or short-term flaring fail to address the pollution stemming from each claim made, data that Dr. Singer believes is missing and would be critical to know. Dr. Singer focused specifically on the issue of production exceeding capacity, leading to venting or flaring.

93. Dr. Singer maintains that the proposed amendments and rules directly address NMOGA's failure to contemplate long-term effects of venting or flaring.

94. Dr. Singer outlined that the proposed rules and amendments are needed to address the increasing number of wells drilled in New Mexico.

95. Dr. Singer then shifted to the effects of long-term flaring based on analysis of APD's and C-129 forms, which permitted him to estimate potential losses due to flaring over the long term. Dr. Singer then testified that, for example with XTO, flaring occurred due to midstream compressor issues and third-party pipeline constraints. Dr. Singer shared similar examples for other producers.

96. Dr. Singer testified, using the GaffneyCline report, which contends that operators waste gas while chasing oil. Dr. Singer further explained the report's findings, such as the lack of front-end planning by producers to avoid issues such as capacity shortages, failure to connect gas lines to new wells, and a general lack of suitable infrastructure to capture emissions. Dr. Singer

also discussed the findings that emissions are expected and can be resolved with proper planning, communication and coordination.

97. Dr. Singer then turned to the issue of communication between upstream and midstream operators, which the GaffneyCline report claims reduces capture issues. Further, the report details technical solutions to prevent or eliminate venting and flaring.

98. Dr. Singer transitioned to the oil price drop of 2020. Dr. Singer testified that producers responded to this drop by shutting in production, per EMNRD regulations. Dr. Singer's findings, per his testimony, indicated that producers do not consider shutting-in or reopening wells to be a significant cost to the company. Dr. Singer suggested that this data demonstrates that shutting-in wells to reduce flaring and venting is a viable option for producers.

99. Dr. Singer supported the proposed rules and amendments, but would like to see additions such as APD denials for non-compliance, mandatory well shut-ins and otherwise strict enforcement of regulations. Dr. Singer also proposed verbiage alterations to the proposed rules and amendments, particularly seeking more production data in operator submitted forms (including GIS maps), specified corrective actions for regulatory violations, and continuous analysis by the Division of incoming data.

100. Dr. Singer proposed additional amendments to identify why insufficient availability or capacity occurs, which results in flaring or venting. Dr. Singer also seeks a public notification structure for when emergency malfunctions pose a risk to human life and third party monitoring of producers.

101. Dr. Singer testified that he supports the State Land Office's proposed alterations.

102. Charles de Saillan introduced himself as a staff attorney for the New Mexico Environmental Law Center. Mr. de Saillan acquired his Juris Doctorate from Boston University School of Law as well as an LLM in environmental and energy law from Catholique University in Louvain, Belgium. Mr. de Saillan worked with the Massachusetts Office of Environmental Affairs, the EPA enforcement division, specifically working with RCRA and CERCLA enforcement. Mr. de Saillan also worked in the U.S. Department of Justice in the environmental enforcement section. Mr. de Saillan then moved to New Mexico to work for the Office of the Attorney General's Environmental Department handling groundwater-permitting issues, followed by the New Mexico Environmental Department.

103. Mr. de Saillan opined that enforcement of environmental regulations is very important to secure compliance from regulated entities. Mr. de Saillan detailed common enforcement tools generally available under environmental regulation. One is specific deterrence through the threat of penalty assessments against an individual actor. Another is general deterrence, which focuses on an industry as a whole. Another are criminal fines and fees against individual actors. Enforcement bodies may also seek judicial relief in the form of injunctions to force compliance. Finally, an enforcement body may seek clean up from an individual actor. Mr. de Saillan also noted that administrative action is another enforcement option.

104. Mr. de Saillan testified that clarity of regulations to be enforced is important. The threat behind enforcement must also be credible; if an agency does not enforce a law, the agency loses the deterrent effect.

105. Mr. de Saillan explained that ambitious environmental regulations could be enforced, even with limited enforcement resources, through self-certification by regulated entities. Conditional permits upon demonstration of compliance is another approach agencies may use, per Mr. de Saillan. Entity failure to comply with regulations results in reduced or denied permitting. Mr. de Saillan cited to the Clean Air Act's non-attainment provisions and similar provisions of RCRA as an example of the above. The same applied per the New Mexico Water Quality Act, per Mr. de Saillan.

106. Mr. de Saillan explained that the 98% capture rule is important because it reflects the primary goal of the proposed rule and regulations: the reduction of methane emissions in New Mexico.

107. Mr. de Saillan averred that the proposed rules and amendments do not provide effective enforcement of the 98% capture rule. Mr. de Saillan stated that a proposed compliance plan stemming from non-compliance does not substitute for actual compliance. Mr. de Saillan proposed that denying permits for non-compliant entities would be a useful enforcement tool. Denials, per Mr. de Saillan, avoid the back-and-forth between regulators and regulated when compliance plans are at issue.

108. Mr. de Saillan asserted that an operator should never fall out of compliance, but if an operator does, the operator should suffer meaningful consequences. Mr. de Saillan believes the currently proposed amendments and rules do not provide for meaningful consequences.

109. Mr. de Saillan proposed changes to the pending rules and amendments, specifically that the rules should present clear and automatic consequences for non-compliance, a key factor being the automatic nature of consequences, which Mr. de Saillan believes is a minor change to the pending amendments and rules.

110. Mr. de Saillan testified that Climate Advocates' proposed enforcement changes do not infringe on Division discretion in enforcing its regulations, just that it provide stricter consequences.

111. Nathalie Eddy introduced herself as an Earthworks field advocate in New Mexico, currently an interim manager of the field team. Ms. Eddy is a lawyer by training, having worked in the Colorado Attorney General's Office. Ms. Eddy is a certified thermographer.

112. Ms. Eddy testified that her current job duties include working with concerned or impacted communities by surveying oil and gas sites using optical glass imaging cameras to identify and document pollution such as methane and volatile organic compounds. Ms. Eddy stated she completed 27 field tours or trips of New Mexico over the last three years, inclusive of the San Juan and Permian basin. Ms. Eddy further stated she covers up to 20 wells per day during these trips.

113. Ms. Eddy explained that, during her trips around New Mexico, she visits midstream sites and compressor stations. She shared that she selects sites for survey based on community complaints or concerns, in some cases visiting a site multiple times.

114. Ms. Eddy outlined her field process in surveying sites. Wind direction is tested, safe vantage sites selected and potentially she trespasses for access.

115. Ms. Eddy testified that, during her surveys, she is able to use her camera for optical gas imaging of sites. SLR cameras are her primary work tool and allow her to see emissions invisible to the naked eye. These cameras allow Ms. Eddy to differentiate between warm air and pollution when coupled with her training.

116. Ms. Eddy outlined the various types of pollution she find and documents during her surveys. The first of these are malfunctioning or non-operating flares that serve as vents. Ms. Eddy opined that malfunction or non-operating flares are due to lack of attention, mechanical problems and wind. In one instance, Ms. Eddy identified a flare that was non-operative for five consecutive days.

117. Ms. Eddy surveyed a stripper well near Artesia, NM where she witnessed emissions coming directly from the wellhead.

118. Ms. Eddy testified that, when she discovers and documents pollution problems, she routinely files complaints with the appropriate regulatory agency. Ms. Eddy stated that these complaints focus on the biggest events for sites closest to impacted communities that she says suffer negative health impacts stemming from the pollution sites. Ms. Eddy testified that she filed 150 complaints with the New Mexico Environmental Department over the last few years, but only nine of those complaints resulted in emission reduction. Some of the 150 complaints ended up with the Division, per Ms. Eddy, and only one of those complaints resulted in agency action.

119. Ms. Eddy provided a presentation that showed how her camera works, what kind of data it collects and how she manages the data through an iPad. She also presented examples of pollution she found near Carlsbad, Artesia and Lovington. Ms. Eddy provided specific examples of unlit flares she encountered during surveys.

120. Mario Atencio introduced himself as a member of the Torreon Chapter of the Navajo Nation and the vice president of the chapter. Mr. Atencio also testified that he is a member of the board of directors for Dine C.A.R.E.

121. Mr. Atencio disclosed that a lot of oil and gas development exists around his community. Mr. Atencio explained that he joined Dine C.A.R.E. to help with environmental justice issues affecting his community. Mr. Atencio also shared that he was a member of the EMNRD and NMED methane advisory panel and assisted the Navajo Nation in developing authority under the Clean Air Act to regulate pollution.

122. Mr. Atencio explained that his family possesses ownership interests in various Navajo communities. He assists them in dealing with oil and gas issues they encounter. Most of

Mr. Atencio's family lives near or around oil and gas development and he detailed his grandmother's exposure to toxic waste spills in February 2019, as well as other negative health impacts experienced by family members. Mr. Atencio worked with various state and local officials in reviewing the site of the spill.

123. Mr. Atencio detailed his involvement with the Health Impact Assessment of the Councilor Chapter, which resulted in the finding that oil and gas facility emission should be trapped at the source to protect public health, findings Mr. Atencio subsequently provided to the methane advisory panel.

124. Mr. Atencio called on the Commission to close loopholes in the law and reduce methane venting and flaring. Mr. Atencio also testified that it would help his family if he had access to better data from producers.

125. Kendra Pino introduced herself as a member of the Twin Pines community of the Navajo Nation. Ms. Pino received her Bachelors of Science in Environmental Studies from Fort Lewis College.

126. Ms. Pino explained that her community is very rural.

127. Ms. Pino testified that she became involved with oil and gas issues through the Councilor Chapter House community service coordinator, which lead to her working with Earthworks, which teaches community members how to spot and report any violations at oil and gas well sites.

128. Ms. Pino also works with Dine C.A.R.E. on contract to organize communities within the San Juan Basin to protect cultural sites, natural resources and public health.

129. Ms. Pino detailed the impacts on her community from local oil and gas sites. She lives one mile from one such site and can hear the compressor running. She also can smell the site, weather depending. The same applies to her parents and grandmother, per Ms. Pino.

130. Ms. Pino stated that in 2016, a well about five miles from her house exploded resulting in a fire that burned for five days. She says the explosion caused panic and there was no community protocol as to what the community should do in reaction to the explosion. Ms. Pino testified that she drove down to the site, discovering the fire. To date, Ms. Pino says her family has not been told what happened.

131. Ms. Pino believes she and her community deserved notice and information about the explosion.

132. Ms. Pino, in her role with Earthworks, conducted filming of methane emissions using thermographers. Ms. Pino detailed how she selects sites, usually a dozen, and then how she documents evidence of emissions. Sometimes, Ms. Pino files complaints depending on the severity of the emissions.

133. Ms. Pino request the Commission take certain steps to curb methane emissions. Ms. Pino testified about the health issues her community faces, including cultural site preservation.

134. Ms. Pino supports the proposed amendments and rules.

135. David McCabe, Ph.D. introduced himself as a Ph.D. in physical chemistry from the University of Colorado who currently works as a senior scientist at the Clean Air Task Force tasked with understanding emissions from the oil and gas industries, as well as the technologies and practices that reduce emissions. Dr. McCabe's employment background includes the EPA as a science and technology fellow.

136. Dr. McCabe testified that he worked on various rulemakings related to methane emissions, such as Colorado's "900 series" regulations covering venting and flaring of methane. Dr. McCabe also represented that he appeared before the Colorado Air Quality Control Commission as an expert witness and before the Colorado Oil and Gas Conservation Commission.

137. Dr. McCabe provided a definition of "routine flaring," which occurs when operators flare associated gas in non-emergency situations for extend periods of time, rather than utilizing the gas on-site, dispatching it to market, or reinjecting it. Dr. McCabe asserted that routine flaring occurs when there is not enough capacity in the natural gas capturing system or lack of compression in the system, both of which are under operator control.

138. Dr. McCabe explained the routine flaring is common in New Mexico because well creation outpaces pipeline development and other infrastructure needs.

139. Dr. McCabe considers routine flaring a form of waste because it is not necessary from an operational perspective and believes the Commission should adopt the ban on routine flaring.

140. Dr. McCabe detailed alternatives to flaring or putting natural gas to market, including liquid recovery, compressed natural gas trucking, and generating electricity with the gas for use on-site. Each are mature and scalable technologies. A final alternative is to shut-in wells to reduce the risk of exceeding capacity.

141. Dr. McCabe testified the flares in New Mexico routinely malfunction based on data indicating that one in ten flares remains unlit or malfunctions, resulting in operators sending no gas to the flare or no gas burning at all. Dr. McCabe proposed the use of automatic igniter technology, continuous pilots, or enclosed flares. Enclosed flares, per Dr. McCabe, keep combustion conditions stable and avoid blown-out pilots. Dr. McCabe's proposed alternatives also apply to stripper wells.

142. Dr. McCabe explained that gas capture plans should delineate between individual wells, for the sake of collecting better data, but such a distinction should not affect creation and submission of a gas capture plan.

143. Dr. McCabe detailed that low-pressure gas scenarios should not be exempted from the ban on routine flaring because low-pressure gas scenarios occur due to outdated equipment, such as pneumatic controllers, and improperly managed thief hatches. Dr. McCabe noted that the proposed rules and amendments regulate pneumatic controllers.

144. Dr. McCabe testified that there is no reason why controlled combustion tanks should not be regulated insofar as venting and flaring, especially given the amount of waste generated by those tanks, which is significant, and the relative ease in capturing such waste.

145. Dr. McCabe emphasized the need for measurement standards when operators estimate the volume of flared gas. Dr. McCabe explained that giving operators an open-ended approach to estimation leads to non-comparable data and likely poor quality data. Dr. McCabe referred to the EPA's greenhouse gas methodologies as a non-arbitrary working model, despite its flaws. A lack of perfect data is no reason to abandon the 98% capture rule, per Dr. McCabe.

146. Dr. McCabe testified that there are effective ways to capture emissions during blowdowns, through isolation valves, plugs and pressure reduction inside pipelines. Pipe diameter makes no difference, per Dr. McCabe. Dr. McCabe clarified that any emissions released during blowdowns are waste.

147. Dr. McCabe explained that, with large producers, blowdowns, thief hatches, pneumatics and other emission events occur often enough that the total volume of emissions is significant.

148. Lesley Fleishman introduced herself as a senior analyst at the senior task force where she performs qualitative analysis of methane emissions and flaring in the oil and gas industry. Ms. Fleishman earned her Master's degree in public policy at the Kennedy School focusing on environmental policy and included coursework on econometrics and quantitative analysis and analytical frameworks. Ms. Fleishman provided various regulatory bodies with technical commentary during rulemaking processes.

149. Ms. Fleishman testified that she analyzed various publicly accessible data and reports from the Division website in preparation for her testimony. The purpose behind Ms. Fleishman's analysis is to understand aggregate trends and patterns in venting and flaring in New Mexico and to assess individual company performance regarding venting and flaring allowing her to compare companies.

150. Ms. Fleishman explained that the data and reports upon which she relied are all found on the Division website and include C-115 reports, statewide production summaries, and reports pulled from the Division's operator database.

151. Ms. Fleishman detailed her methodology in analyzing her collected data.

152. Ms. Fleishman presented her two findings from her analysis. One, overall levels of venting and flaring in New Mexico are high and, two, there are many operators flaring large percentages of produced gas, amounts well above the two percent threshold.

153. Ms. Fleishman provided a table reflecting the total reporting of vented and flared emission from 2017 through 2019. Ms. Fleishman testified that she relied upon C-115's to generate the table. Ms. Fleishman stated that, in analyzing this data, she found that vented or flared gas in 2018 to 2019 totaled enough gas to fuel 84% of New Mexican households every year. Ms. Fleishman pointed out that venting decreased by half from 2017 to 2018 but rebounded slightly in 2019.

154. Ms. Fleishman presented a second table, 2017 to 2019 flaring by top 25 oil producers. Ms. Fleishman stated she relied upon C-115 reports, annual production reports and aggregated oil production by operator data to develop the table. The 25 operators found in the table accounted for 95% of reported flaring in New Mexico, per Ms. Fleishman. Ms. Fleishman further testified that the oil producers flare significant amounts of gas whereas gas producers flare relatively little gas.

155. Ms. Fleishman presented a third table showing the top 25 operators with the highest amounts of venting and flaring in 2019. Again, Ms. Fleishman represented that she relied upon C-115's and annual production of aggregated gas reports. Ms. Fleishman found that considerable variation exists between the listed companies as to flared amounts.

156. Ms. Fleishman presented a fourth table showing the 2019 flaring by top 20 operators that report flaring as a percentage of total state flaring. Ms. Fleishman stated she relied on C-115's and total statewide data to generate the table. Ms. Fleishman determined that Exxon, Devon and Ameredev are responsible for over one-third of all reported flaring and the top ten flaring companies account for 78% of flaring, indicating flaring is concentrated in just a handful of producers in New Mexico.

157. Ms. Fleishman presented a fifth table in two parts that update data for 2020. Table 5 confirms Ms. Fleishman's findings from the fourth table.

158. Ms. Fleishman testified that reporting for venting and flaring is very important because it allows for not just Division analysis, but also independent analysis.

159. NMOGA's Testimony: NMOGA proffered eleven (11) witnesses at the rulemaking hearing: John Smitherman; Paul Thompson; Morgan Iannuzzi; Paul Reinermann; Joseph Leonard; Jeffrey "Ryan" Davis; David Greaves; Zachary Craft; John Maxey (did not testify); Yolanda Perez and Mike Smith. These witnesses were subject to cross-examination by the other parties and by the Commissioners and Commission Counsel.

160. Mr. Smitherman introduced himself as the senior advisor to NMOGA. Mr. Smitherman testified about his background, training and experience that centered exclusively on oil and gas operations throughout the Permian basin and the Gulf Coast. Mr. Smitherman further explained his role as vice president of operations for an energy company, which included supervision of a variety of oil and gas extraction methods. Mr. Smitherman noted he is a member of the Society of Petroleum engineers.

161. Mr. Smitherman confirmed that he was familiar with the proposed rules and amendments, including those alternate proposals offered by NMOGA.

162. Mr. Smitherman addressed the 98% capture requirement at the heart of the proposed rules and amendments, stating that NMOGA supports the capture requirement and acknowledged that the requirement is unprecedented in the United States.

163. Mr. Smitherman then turned to the issue of NMOGA's proposed alterations to the Division's proposed rules and amendments. Mr. Smitherman explained that NMOGA appreciates the gravity of the proposed amendments and rules, but also suggested that the proposals should be viewed with an eye toward the fact that some events and circumstances are beyond the control of operators. Mr. Smitherman also commented that incentives that lead to unintended consequences or safety issues should be considered in the rulemaking process. To that end, Mr. Smitherman turned to NMOGA's alternative proposals.

164. Mr. Smitherman stated that some of the proposed amendments and rules contain reporting requirements that are duplicative, excessive or that are unhelpful due to likely unreliable data. In lieu of the Division's proposals, Mr. Smitherman proposed amendments that NMOGA believed to improve reporting of venting or flaring events, more consolidated monthly reporting and elimination of reporting for data that cannot be measured or estimated reliably. All of these proposals, Mr. Smitherman testified, will enhance the data reported to the Division.

165. Mr. Smitherman added that another proposed NMOGA amendment recommends reduction in prescriptive measures in favor of goal setting coupled with operator flexibility.

166. Turning to the proposed new rules, Mr. Smitherman addressed part 27 first. Mr. Smitherman testified that the proposed language concerning pipelines "constructed and placed in service" is vague enough to exclude, potentially, pipelines installed after the effective date of part 27.

167. Mr. Smitherman addressed several other definitions during his testimony, including "malfunction," in which case he suggested removal of "substantially" from the definition because it is a vague term and it remains unclear who decides what constitutes "substantial" for purposes of the definition.

168. Mr. Smitherman testified about the definition of an "emergency," again objecting to the use of "substantially" within that definition, for the same bases as previously noted. Mr. Smitherman buttressed his objection through a discussion about his experiences in the industry, especially as to the 4 hour deadline for notice of an emergency, for which Mr. Smitherman recommended an 8 to 12 hour deadline.

169. Mr. Smitherman further addressed the issue of recurring equipment failure as described in the definition of "emergency." Mr. Smitherman detailed his understanding of the legal concept of negligence while explaining why even recurring equipment failure is not necessarily evidence of operator negligence or error.

170. Mr. Smitherman testified that proposed language governing the number of emergencies permitted within 60 days should be narrowed to the individual site, rather than the operator. Mr. Smitherman outlined how individual sites endure their own specific challenges, such as weather, such that an operator-wide application of the definition is unfair. Mr. Smitherman also seeks to remove Division discretion in determining whether an operator could not have reasonably anticipated a particular emergency.

171. Mr. Smitherman testified on the desire to see the proposed rules use language more consistent with that used in the field for the purpose of clarity. Mr. Smitherman provided examples, such as descriptions of phases within the timeline of a well's life, again based on his industry experience. Mr. Smitherman illustrated his position through exhibits that show the variances in terms used between the industry and the proposed rules and amendments.

172. Mr. Smitherman turned to the definitions of venting and flaring, about which he claimed the definitions conflate the concepts and do not properly identify waste, including testimony about routine venting or flaring and the matter of leaks from various types of equipment, such as pipeline specifications.

173. Mr. Smitherman testified concerning reporting requirements as found in the proposed amendments and rules. Mr. Smitherman opposed several aspects of the reporting requirements, such as the requirement that the presence of contaminants in gas be held against producers under the capture rule. Mr. Smitherman explained how contaminants get into a producer's system and how that is not necessarily under the control of the producer by providing detailed real-world examples. This testimony also included a discussion on recoverable gas, when recovery is possible or not, and why that is the case.

174. Mr. Smitherman shared his concern that some of the Division's proposed rules and amendments are inconsistent with those of the NMED.

175. Mr. Smitherman then testified about manual liquids unloading as defined in the proposed rules and amendment, specifically challenging the broad scope of the duties imposed on producers.

176. In general, Mr. Smitherman did not attack the substance of the proposed rules and amendments, but challenged the proposed rules and amendments on the grounds that they are overbroad in scope, provide too much Division discretion in assessing certain events, and lead to either vagueness or exclusion of concepts and terms, all of which result in potential regulations that will not help producers and the Division reach the 98% gas capture rate by 2026. Mr. Smitherman presented his views through his background, training and experience while providing specific technical information about oil and gas operations and how the regulations would impact them.

177. Mr. Smitherman testified about auto-igniters, retrofitting of flares and compliance deadlines for those tasks, which he believes limits producers from using emerging technologies.

178. Mr. Smitherman discussed AVO inspections, to which he has no objection aside from potential conflict between NMED regulations and the proposed rules and amendments. Mr. Smitherman did object, however, to inspection frequencies because they are not as simple as other parties maintained.

179. Mr. Smitherman returned to the issue of measurement and reporting requirements found in the proposed rules and amendments, particularly volumetric measurements. Mr. Smitherman was critical of the proposed rules and amendments due to what he testified was the complexity involved in a producer's ability to measure as well as the need for producers to challenge Division discretion on whether a producer was compliant with measurement requirements.

180. Mr. Smitherman, again, addressed scope issues in the proposed amendments and rules, targeting measurement language and data analysis concepts. Mr. Smitherman maintained that, for example, the difference between compositional analyses and representative analyses, with the former preferred by the Division.

181. Mr. Smitherman returned to reporting requirements, outlining why the proposed rules and amendments needlessly complicate reporting. Concerning reporting categories, Mr. Smitherman testified that more specificity from the Division is needed to ensure regulatory certainty for producers.

182. Mr. Smitherman testified at length about what the various plans required of operators by the proposed rules and amendments, such as gas management plans and operational plans, and questioned how the details, measurements and other relevant data should be collected to ensure compliance. This discussion included GIS mapping requirements, how calculations of data should be conducted, and other methodological concerns.

183. Mr. Smitherman's testimony was detailed and specific on various changes sought by NMOGA, all of which were based on industry experience and knowledge.

184. Mr. Smitherman endured a lengthy cross-examination from opposing parties and the Commission, during which his positions were challenged.

185. Paul Thompson introduced himself as the president of Epic Energy. Mr. Thompson, aside from his work for Epic Energy, still engages in consulting engineering work. Mr. Thompson holds a degree in chemical engineering and is a registered professional engineer in petroleum engineering. Mr. Thompson's entire career centered on the oil and gas industry, including management of field operations, inspections and maintenance.

186. Mr. Thompson testified that he is familiar with prudent operating practices of oil and gas producers, including AVO inspections.

187. Mr. Thompson stated he familiarized himself with the Division's proposed rules and amendments, as well as those of NMOGA.

188. Mr. Thompson explained that AVO inspections are expected of lease operators, what Mr. Thompson's production superintendent referred to as "preferred 101." Mr. Thompson compared AVO inspections to what people do when leaving the house: look around, listen, do I smell gas? Mr. Thompson further elaborated that, if an issue is found during an AVO inspection, the issue should be addressed as soon as possible.

189. Mr. Thompson turned to the proposed OCD language requiring AVO inspections and agreed that the listed inspection items are the same as those routinely inspected by lease operators. However, Mr. Thompson testified that the frequency required by the proposed rules and amendments is too restrictive and proposed alternatives for stripper and non-stripper wells: monthly AVO inspections for non-stripper wells and quarterly AVO inspections for stripper wells. Mr. Thompson based these alternatives on prudent operating practices in the industry. Mr. Thompson asserted that the Division's proposed AVO inspection requirements impose an administrative burden on operators, which he detailed through the example of time per inspection per well and came to the conclusion that the Division's AVO inspection standards require 2,756 man hours per year for around 34 non-stripper wells and 434 stripper wells.

190. Mr. Thompson testified that stripper wells are lower production wells, so administrative costs negatively affect the value of such wells.

191. Mr. Thompson opined that the administrative costs of the Division's AVO inspection regulations outweigh the benefits.

192. Mr. Thompson explained that, even if inspection reports are filled out on a laptop or other digital tools are used, the administrative burden remains the same.

193. Morgan Iannuzzi introduced herself as the mid-continent business unit air team lead for Chevron. Ms. Iannuzzi worked for Chevron for the last ten years in various health, environmental and safety positions, five of which concerned air issues.

194. Ms. Iannuzzi oversees venting and flaring reporting for her region, which includes New Mexico, and Ms. Iannuzzi shared that she develops guidance for flares and flare design.

195. Ms. Iannuzzi turned to the Division's proposed definition of "emergency." Ms. Iannuzzi explained that NMOGA proposes an eight, rather than four, hour emergency window. Ms. Iannuzzi based her recommendation on multiple complicating factors, such as communication relays between midstream and upstream producers, travel time, analysis of the issue to determine next steps, inclement weather, road conditions and other issues. Ms. Iannuzzi suggested that all response timeframes for emergencies or other issues should be consistent throughout the regulations.

196. Ms. Iannuzzi testified about enclosed flares, flaring efficiency and retrofitting ignition systems. Ms. Iannuzzi agrees with the Division's proposed capture rule and preference for flaring over venting. Ms. Iannuzzi disagrees with the proposed requirement for enclosed flares because enclosed flares have capacity restraints that open flares do not. The volume of gas sent to

a flare remains the same, whether or not the flare is open or enclosed, so there is no benefit in requiring enclosed flares.

197. Ms. Iannuzzi addressed the Division's proposed language requiring use of properly sized, designed and operated flares. Ms. Iannuzzi focused, in particular, on the continuous combustion component of the proposed rule, which requires 100% combustion, something Ms. Iannuzzi contends is not possible. Ms. Iannuzzi also testified that design efficiency is not the same as operational efficiency, with operational efficiency routinely falling below design efficiency. Thus, per Ms. Iannuzzi, the design efficiency requirement of the proposed rules is not realistic.

198. Ms. Iannuzzi testified that NMOGA's proposed regulations concerning flare efficiency provide for proper combustion of gases from an operational perspective.

199. Ms. Iannuzzi discussed the topic of flare retrofitting. Ms. Iannuzzi stated that the proposed rules for retrofitting are strict and NMOGA proposed a 24-month window for retrofitting, along with operator ability to secure additional time from the Division, if needed. Ms. Iannuzzi testified that retrofitting requires capital allocation, engineering systems, installation and then training based on her experience in the industry. Ms. Iannuzzi did not provide economic data for this continuum.

200. Regarding engineer certification of retrofitted flares meeting design efficiency, Ms. Iannuzzi testified that such certification does not match reality.

201. Paul Reinermann introduced himself as a field environmental manager for Enterprise Products Partners. Mr. Reinermann testified that, in this role, he became familiar with the field operation of natural gas gathering lines and related equipment. Mr. Reinermann holds a degree in chemical engineering. Mr. Reinermann also worked for the EPA and engineering firms. Mr. Reinermann stated that he is experienced in interpreting, commenting on and ensuring compliance with state and federal regulations.

202. Mr. Reinermann addressed the proposed definition for "emergency." Speaking to "recurring equipment failure," Mr. Reinermann considers this language to mean "equipment that fails more than once," a pattern of failure, which is too strict for the field. Mr. Reinermann cited examples to support his position. Mr. Reinermann expressed concern that, ultimately, patterns of equipment failure could be deemed operator negligence.

203. Mr. Reinermann testified that the three emergency verbiage proposed by the Division, particularly that a third emergency in 60 days would not permit flaring or venting, is too strict and that NMOGA's proposed well and site-specific alternative, including language focused on similar emergency causes, is realistic. Again, Mr. Reinermann provided examples in support of NMOGA's changes.

204. Mr. Reinermann addressed the issue of routine repair or maintenance, unscheduled or otherwise. Mr. Reinermann detailed that, for any repair or maintenance, blowdowns for safety are mandatory and that counting any vented or flared gas against an operator for conducting safety blowdowns are improper.

205. Mr. Reinermann testified that some equipment, such as flanges and thief hatches, are designed to intentionally release some gases, gases that are often permitted for release by the New Mexico Environmental Department. Mr. Reinermann averred that such release are not capable of capture. Mr. Reinermann contends that the process of moving gas from a wellhead to a sales point always involves unavoidable losses.

206. Mr. Reinermann turned to gas management plans required under the proposed rules and amendments. Mr. Reinermann does not believe that the Division will be able to review all submitted gas management plans. Mr. Reinermann also contends that gas management plans require broad-scale data collection from various parts of an operator's company, such that collecting them in one source is not achievable. Mr. Reinermann proposed that each internal company division maintain its own plans and work from those in addressing issues and that operators submit a mitigation plan outlining actionable steps to achieve compliance should the operator not reach the 98% capture requirement; these proposals provide operator flexibility.

207. Mr. Reinermann then testified about AVO inspection frequency. Mr. Reinermann explained that EPA requires inspections monthly, as proposed by NMOGA, rather than weekly per the proposed rules and amendments. Mr. Reinermann believes that monthly inspections are appropriate to reduce waste. Mr. Reinermann further proposed NMOGA's changes to the Division's AVO inspection language, specifically that adding language excluding AVO requirements at the state level if addressed by the listed agencies, such as the EPA, allowing operators to focus on one regulation versus two.

208. Mr. Reinermann testified that the proposed GIS mapping data filing is already done in-house by his company, but noted that the C-141 form already collects some of this data and the Division already collects data through the methane tracking dashboard.

209. Zachary Craft introduced himself as legal counsel for Enterprise Products Company. Mr. Craft previously worked for Baker Botts in the environmental department with a focus on energy industry client issues that, in some form, related to environmental issues.

210. Mr. Craft advises his clients in complying with various regulations, specifically reporting requirements. Mr. Craft also assists his client with corporate structure and operation.

211. Mr. Craft presented his client's SEC filings, revealing its corporate structure. Mr. Craft also provided the same filings for companies similar to his client. Mr. Craft testified that his presented documents show how corporations function as numerous, nominally separate legal entities. Mr. Craft then detailed why corporations structure themselves as they do, reasons such as cost and profit sharing, joint venture purposes, and ease of management of fiscal matters and operations. Mr. Craft also testified that mergers and acquisitions generate the presented corporate structure.

212. Mr. Craft explained how the 98% gas capture rule is currently structured in terms of how it would apply to operators and why that poses a problem for operators. Mr. Craft said the better method of regulation is to apply the gas capture requirement to individual operators, not the parent companies. Mr. Craft additionally noted that acquisitions of non-complaint operators by a

corporation would undermine the corporation's efforts to achieve the 98% gas capture rule. A newly created entity, per Mr. Craft, would not suffer the same fate. Mr. Craft stated NMOGA's proposed alterations would result in a neutral rule as to the form of acquisition, creating a regulatory category for newly built systems. Mr. Craft detailed multiple hypothetical examples to illustrate his points.

213. Mr. Craft testified that mandatory consolidation of subsidiaries under the proposed rules and amendments has some benefits, but there are also risks such as administrative paperwork creating a regulatory violation absent a substantive violation, thereby defeating the intent of the proposed rules and amendments. Mr. Craft also pointed to ambiguities as to whether operators are properly affiliated, resulting in scenarios where affiliates are improperly consolidated for purposes of the capture rule. Further, Mr. Craft explained that mandatory consolidation of affiliates would impose an economic burden, complicating cost sharing and joint venture efforts. Mr. Craft then opined that the Division's proposed rules and amendments do not comport with how corporations operate.

214. Joe Leonard introduced himself as a facilities engineer for Devon Energy responsible for designing production and upstream facilities, making him knowledgeable about production equipment for oil and gas, including maintenance. Mr. Leonard possesses a degree in chemical engineering and he is a licensed professional engineer in the state of Oklahoma.

215. Mr. Leonard addressed the proposed definition for "recurring equipment failure" and recommended its removal because such failures are a useful diagnostic tool and often occur when an engineer attempts to innovate. Additionally, per Mr. Leonard, troubleshooting a recurrent issue is necessary to resolve it in many cases. Mr. Leonard stated that a recurring equipment failure is not proof of operator negligence.

216. Mr. Leonard addressed NMOGA's proposal that recurring equipment failure reporting requirements should be site-specific, rather than operator-specific, through examples of commercial equipment containing design flaws and varying conditions for individual well sites. Mr. Leonard gave the example of multiple air compressors going down over three sites, which would not be an emergency under the proposed rules, despite the impact on the operator.

217. Mr. Leonard opposes Division proposals that deny emergency status to operators when an operator suffers a third emergency in 60 days. Mr. Leonard referred to his comments about recurring equipment failure not being evidence of operator negligence.

218. Mr. Leonard then turned to retrofitting of flares, testifying that the proposed timeframes are not realistic based on his training and experiences and do not contemplate the economic costs incurred due to retrofitting.

219. Mr. Leonard addressed the issue of uncontrolled storage tanks. Mr. Leonard testified that operators collect all gas able to be captured by the time the gas arrives in an uncontrolled storage tank. Additionally, adding capture technology to uncontrolled tanks risks oxygen ingress, a negative effect on the stored gas. Thus, Mr. Leonard opposes reporting requirements for uncontrolled storage tanks.

220. Mr. Leonard also opposes reporting requirements for pneumatic controllers and pumps because emissions stemming from them are very difficult to capture and capture efforts would complicate operation of various valves and controllers used. Mr. Leonard provided similar testimony regarding thief hatches.

221. Concerning the above-mentioned capture categories, Mr. Leonard stated that operators simply would not be able to report with any accuracy emissions stemming categories of equipment.

222. Jeffrey Davis introduced himself as an operations manager for Merrion Oil and Gas. Mr. Davis obtained a Bachelor's of Science degree in mechanical engineering from New Mexico Tech. Mr. Davis is also the current board president of the Independent Petroleum Association of New Mexico, which worked with NMOGA to provide alternative language to the Division's proposals.

223. Mr. Davis testified about manual liquids unloading processes and equipment, suggesting the manual liquids unloading be removed from the proposed rules and amendments.

224. Mr. Davis explained how manual liquids unloading works, specifically that it occurs when gas wells accumulate liquids in the well bore and that it only occurs in gas wells.

225. Mr. Davis testified to causes for manual liquids unloading, such as pressure differentials, liquids in the reservoir and additional backpressure on the well.

226. Mr. Davis detailed equipment used during manual liquids unloading, such as artificial lifts, as well as how those lift function. Mr. Davis also explained that circumstances outside the control of the operator, such as increased sales line pressure, variability in line pressure and weather, would negatively affect lifts.

227. Mr. Davis testified that manual liquids unloading is, sometimes, necessary, particularly when a well ceases to produce, usually due to pressure issues. Mr. Davis explained that volumes released during the unloading process are miniscule and are very difficult to capture. Mr. Davis also explained that attempts to capture gas during liquids unloading would potentially create additional backpressure that complicates the process further.

228. Mr. Davis objects to the Division's proposed requirement that an operator remain present on-site during manual liquids unloading, preferring to add "or in close [*sic*] proximity," which Mr. Davis explained through real-world examples of the complexity faced by lease operators, which in many cases requires an in-person inspection to determine the need for manual liquids unloading.

229. Mr. Davis supports NMOGA's proposed changes to the Division's proposed rules and amendments because they will prevent waste.

230. David Greaves introduced himself as a facilities engineering manager for XTO Energy, a subsidiary of ExxonMobil. Mr. Greaves detailed his background as an engineer in the

oil and gas industry, specifically in flow assurance engineering, project-level work, facilities management, and operational matters. Currently Mr. Greaves supervises teams of 20-25 facility engineers. Mr. Greaves obtained a Master's of Science Degree in chemical engineering from the Colorado School of Mines.

231. Mr. Greaves testified about installation of metering equipment for oil and gas operations, particularly concerning flare monitoring. Mr. Greaves also stated he provided technical information to BLM during its 2016 rulemaking. Mr. Greaves is also familiar with the technical difficulty in measuring or estimating losses of flow and low-pressure system and current technologies used to collect emissions.

232. Mr. Greaves served as a technical expert for the New Mexico Methane Advisory Panel on the topic of flaring and flaring technologies.

233. Mr. Greaves detailed his concern that the Division's proposed rules and amendments concerning flare meter placement impinge on an engineer's obligation to follow placement documentation. Mr. Greaves also expressed concern about the proposed rules and amendment's usage of "flowline," which Mr. Greaves thinks has a very different meaning than that of the Division. Mr. Greaves averred that NMOGA's proposed language regarding flare meter placement provides necessary flexibility for producers. Mr. Greaves then explained how flare meters are placed and how engineering obstacles are encountered when placing flare meters, to illustrate his point.

234. Mr. Greaves then turned to retrofitting of flare meters, a requirement found in the Division's proposed rules and amendments. Mr. Greaves testified that retrofitting a flare is, in a sense, best done during construction. For pre-existing sites, an operator would undertake significant changes, such as safety, ensuring the flare is installed downstream from the final vent system liquid removal equipment and finding a location and space for a straight run of pipe. Mr. Greaves recommends avoiding retrofitting flare meters. Mr. Greaves explained that GOR calculations would provide suitably accurate data, obviating the need to retrofit flare meters. Mr. Greaves also detailed the costs of retrofitting flare meters, which he contends is substantial; Mr. Greaves provided estimates ranging from \$20,000.00 to \$90,000.00

235. Mr. Greaves turned to the compositional analysis component of the flare meter provision proposed by the Division. Mr. Greaves proposed the alternative of using gas compositional analysis from the sales meter in lieu of the Division requirement for flared gas compositional analysis. Mr. Greaves asserted that, through basic calculations from the gas compositional analysis from the sales meter, a reliable estimate of flared gas results.

236. Mr. Greaves testified that he supports the Division's decision not to limit producers to a finite list of technology for the purpose of flare metering, consistent with the API 1410 standards. Mr. Greaves provided an exhibit analyzing the Division's proposals and API 1410.

237. Mr. Greaves then addressed the Division's proposed venting and flaring reporting categories. Mr. Greaves supports eliminating these categories because they are difficult, impractical or impossible to measure with any certainty. Because of this, Mr. Greaves alluded that

the proposed reporting categories introduce more uncertainty into the proposed rule amendments and rules. Mr. Greaves specifically cited to uncontrolled storage tanks, pneumatic controllers and pumps, and improperly closed thief hatches as examples that would generate more uncertainty if regulated and provided analysis underpinning his opinion. Mr. Greaves further stated that there is no credible method of estimating releases from the examples above.

238. Mr. Greaves believes it is unfair to penalize operators for flaring caused by failure of the gas stream to meet pipeline status. Mr. Greaves explained that he has run into this problem, particular with oxygen levels, and has no control over them, making the proposed rules and amendments unfair to operators and especially so for penalties incurred due to the presence of oxygen.

239. Mr. Greaves testified that NMOGA's proposed definition of "venting" is consistent with Colorado's definition for venting, which does not include the venting reporting categories found in the Division's proposed rules and amendments. Mr. Greaves contends that the BLM venting definition also does not include the Division's venting reporting categories.

240. Michael Smith introduced himself as an environmental professional with Devon Energy in which he advises the company on environmental policy and regulatory matters. Mr. Smith previously worked for the Oklahoma Department of Environmental Quality assessing oil and gas facilities compliance with air permits and regulations.

241. Mr. Smith is familiar with oil and gas operations, including gathering processes and how air emissions are tracked, measured and estimated for reporting purposes.

242. Mr. Smith expressed familiarity with EPA rules concerning air quality, particularly that EPA regulations present a clear understanding of when the completion phase ends and production phase begins. Mr. Smith believes consistency between regulations as to the meaning of terms is helpful, something found in NMOGA's proposed changes.

243. Mr. Smith addressed the two remaining categories of venting and flaring reporting not addressed by Mr. Greaves: high-pressure venting and flaring, and routine and non-routine flaring. Mr. Smith testified that these two concepts have both industry and EPA meaning. Mr. Smith does not oppose tracking of these categories and believes they result in quality data production, as opposed to low-flow pressure or volume events, which cannot provide quality data outside estimation. Additionally, low-flow scenarios are regulated already at the state and federal level, contrary to EMNRD and NMED's pledge to try to avoid redundant regulation.

244. Mr. Smith reiterated prior testimony about tracking and reporting of emissions stemming from equipment such as unmonitored tanks, pneumatic devices, thief hatches, and manual liquids unloading, specifically as to capture difficulties and unreliable data generation through any methodology. Mr. Smith also stated that these categories are regulated already.

245. Yolanda Perez introduced herself as a senior regulatory consultant of regulatory affairs for Occidental Oil and Gas. Ms. Perez worked in the oil and gas industry for 45 years, handling regulatory issues in 11 states and on federal regulatory matters; 22 years of this time

involved working with New Mexico regulations. Ms. Perez also has field experience and familiarity with reporting requirements under environmental regulations. Ms. Perez was a member of the Division's industry advisory panel, a member of the NMSLO advisory committee, participated in the methane advisory panel as to venting and flaring, was an industry representative for the initial gas capture group formed by the Division and worked with BLM on its rulemaking.

246. Ms. Perez testified that NMOGA's proposed rule changes seek to clarify the Division's proposed rules and amendments, but also enhance some provisions.

247. Ms. Perez explained that one of her, and NMOGA's, goals is to amend the proposed rules setting forth the contents of the C-129 form. Ms. Perez contends that NMOGA's proposed changes generate data consistency for the Division. Ms. Perez testified that NMOGA accomplished this by importing categories into the C-129 form.

248. Ms. Perez proposed that the Division would benefit from incorporating data from the C-115 forms into the proposed rules and amendments' reporting structure, per NMOGA's proposals. Ms. Perez provided details on the various codes and information found in the C-115 and how the codes and information contribute to reliable data generation. Ms. Perez further explained how the C-115, C-115B and C-129 forms, together, generate reliable and useful data for the Division.

249. Ms. Perez discussed the timelines for compliance found in the proposed amendments and rules, including NMOGA's position that the Division ought to have greater discretion to determine when a producer should be in compliance. Ms. Perez explained that producers will encounter difficulty implementing necessary changes, especially as to monthly production volume accounting. Ms. Perez utilized a diagram to illustrate the complexity inherent in monthly production volume accounting.

250. Ms. Perez addressed NMOGA's desire to strike "not described above" language that followed the list of mandatory reporting categories. Ms. Perez pointed out such verbiage leads to uncertainty for producers. Ms. Perez outlined that producers understand why the mandatory reporting categories exist and how they fit in the 98% capture rule framework, but encouraged the Commission to consider providing only specific categories for mandatory reporting and not leave any reporting requirement open-ended.

251. Environmental Defense Fund Testimony: the EDF presented three (3) witnesses during the rulemaking hearing: Jon Goldstein, David Lyon and Tom Alexander. These witnesses were subject to cross-examination by the other parties and by the Commissioners and Commission Counsel.

252. Jon Goldstein introduced himself as the director of regulatory and legislative affairs for the EDF, a role he has held since 2012, in which he works in the energy program on oil and gas regulatory efforts at the state and federal level. Mr. Goldstein also worked for EMNRD as secretary, among other roles, under the Richardson Administration. Mr. Goldstein possess a master's degree in public policy and a certificate in science technology and environmental policy from Princeton University.

253. Mr. Goldstein testified that he supports the proposed amendments and rules, but wished to propose some alterations. In particular, Mr. Goldstein strongly supports the Division's prohibition of routine venting and flaring during production, the preference for flaring over venting and the 98% capture rule. Mr. Goldstein stated that such rules make New Mexico the second state in the lower 48 to enact such regulations.

254. Mr. Goldstein then offered his proposed alterations, starting with gas management plans and mandatory denials or conditional approvals of APD's for non-compliant operators.

255. Mr. Goldstein testified that the gas capture rule would save up to \$271 million worth of natural gas, \$75 million from flaring alone, and therefore providing tax revenues to the State, which is currently losing \$43 million per year.

256. David Lyon, Ph.D. introduced himself as a scientist at the EDF, with a Ph.D. in environmental dynamics from the University of Arkansas where he drafted a thesis on oil and gas methane emissions with a focus on quantification and mitigation of super emitting sites. Dr. Lyon previously worked at the Arkansas Department of Environmental Quality as a program manager for state pollution emissions.

257. Dr. Lyon currently is a lead scientist on a large-scale research campaign studying methane emissions in the Permian Basin, which includes New Mexico. This project results in four major findings. First, methane emissions occur across the oil and gas supply chain, but upstream sources produce about 80% of national methane emissions. Second, across all oil and gas sources and sites, the methane emission rate varies significantly, with 5-10% of high emitting sites constituting 50% of the national methane emissions. Third, traditional emission monitoring methods tend to underestimate emissions to a substantial degree. Fourth, based on the 2018 Alvarez paper, 24 co-authors from 16 institutions evaluated 400 sites to come the estimate that total emissions in the United States tally 13 million metric tons, 80% higher than the EPA's current estimates.

258. Dr. Lyon explained how the authors of the 2018 Alvarez paper came to their conclusions, detailing the methods, tools, and analyses used. Dr. Lyon noted that the Permian Basin suffers from capacity issues, which leads to unnecessary venting and flaring, pointing out that infrastructure planning resolves this problem.

259. Dr. Lyon then turned to the proposed amendments and rules, making recommendations for improvements. One would require a shift from open flares to enclosed combustors. Another would be to require operators to submit an engineer's certification that all flares or combustors have sufficient and consistent gas flow and heat content to achieve the manufacturer's design. The third change would be a requirement retrofitting of all flares, combustors and flare stacks with auto-igniters or continuous pilots. The third proposal applies to stripper wells and low-production wells.

260. Dr. Lyon testified that the ALARM provision of the proposed rules and amendments be modified to match the quantification requirements specified in the reporting section of the proposed rules and amendments.

261. Dr. Lyon stated that he understood that the Division incorporated most of the proposed changes into its final proposed rules and amendments.

262. Dr. Lyon addressed his preference for flaring over venting, based on quantities of methane released by venting versus flaring.

263. Dr. Lyon discussed venting from uncontrolled tanks, which is significant because such venting is one of the largest sources of oil and gas methane emissions, something that can be measured by operators, despite claims to the contrary.

264. Dr. Lyon testified that venting and flaring from manual liquids unloading totals 100,000 metric tons of methane a year, a significant amount that can be measured by operators.

265. Dr. Lyon stated that volumes of vented or flared gas from downhole maintenance activities can be measured accurately and comprise around 20,000 tons of methane per year. The data used to determine the amount of methane released by downhole maintenance is currently unreliable based on a lack of quality data, per Dr. Lyon.

266. Dr. Lyon averred that emissions from normal operation of pneumatic controllers and pumps contributes approximately 2 million metric tons of methane a year, another measurable emission.

267. Dr. Lyon explained that emission from improperly closed or maintained thief hatches are another leading source of emissions, although measuring those emissions is tricky.

268. Dr. Lyon testified that he supports the use of AVO inspections to help identify emission issues in an operation. Dr. Lyon opposes any rule language that permits venting or flaring exceptions for fugitive emissions from flanges, connectors and valves, preferring monitoring of that equipment.

269. Thomas Alexander introduced himself as a consultant to the EDF in which he handles regulatory matters, evaluates production process matters, and emergency response planning. Mr. Alexander pursued a Master's of Environmental Management at the Denver University, although he did not complete the coursework. Mr. Alexander also served in the United States Air Force. Mr. Alexander continues coursework in the areas of oil and gas engineering.

270. Mr. Alexander approved the proposed rules and amendments, but wished to offer modifications to those proposals.

271. Mr. Alexander addressed the proposed completion requirement, focusing on the need for greater efficiency in flowback systems, proposing a 95% efficiency rate. Mr. Alexander stated that, insofar as safety, proper directing of flowback allows for management of emissions while preventing injury.

272. Mr. Alexander suggested that regulations require operators to use combustor or vapor recovery units to curb emissions.

273. Mr. Alexander recommended that all forms submitted to the Division be signed by an operator official with accountability over operations subject to the submission, thereby imposing additional accountability for flaring or venting on the operator.

274. Mr. Alexander testified that, during manual liquids unloading, regulations should require use of an automated lift system, which will reduce the need for venting or flaring and therefore waste. Additionally, a human should remain on-site during this process to contend with any issues resulting from automated systems. Mr. Alexander further contends that manual unloading events should be reduced and such reduction should be visible in Division filings.

275. Mr. Alexander discussed the need for regulation of venting or flaring from exploratory wells. For example, requiring an operator to report to the Division technical information demonstrating that why more than 60 days is needed to determine well viability.

276. Mr. Alexander suggested limiting venting and flaring during Bradenhead testing.

277. Mr. Alexander proposed that flaring during completions and production be conducted with an enclosed device designed to effect 98% destruction efficiency.

278. Mr. Alexander testified about reporting requirements and the need for operators to provide information to the Division concerning safety risks necessitating venting or flaring. Mr. Alexander stated this requirement centers on the surrounding environment. Mr. Alexander further commented that the Division should require operators to file their operational best practices with the Division because communication helps reduce waste. Mr. Alexander testified that gas management plans should provide the anticipated volumes of liquids stemming from gas production, as well as describing how separation equipment shall be used to optimize gas capture.

279. Mr. Alexander supported mandatory denial or conditional approval of APD's based on an operator's compliance with gas management plans in order to gain overall compliance with the proposed rules and amendments. Mr. Alexander also supported mandatory AVO inspections because such inspections are useful for identifying production events that generate emissions. Mr. Alexander stated that venting or flaring from flanges, connectors and valves is not appropriate because those devices are not designed to leak, nor are pipelines

280. New Mexico State Land Office's Testimony: the New Mexico State Land Office ("NMSLO") proffered one witness at the rulemaking hearing: Danny Martinez. This witness was subject to cross-examination by the other parties and by the Commissioners and Commission Counsel.

281. Danny Martinez introduced himself as Division Director of the Management Division of the New Mexico Land Office ("NMSLO"). Mr. Martinez oversees three business units that are responsible for collection, processing, distribution and auditing of royalty payments from oil, gas and carbon dioxide wells on state trust land.

282. Mr. Martinez testified that NMSLO plays a role with in oil and gas production in New Mexico in land leasing for development and revenue collection from lease bonuses and other

sources. Mr. Martinez provided a detailed explanation of how the NMSLO calculates royalties, from spacing units to wells. Mr. Martinez explained that spacing units are situation-dependent and come in several forms, all based on regulations.

283. Mr. Martinez testified that he was ordered by the State Land Commissioner Stephanie Garcia Richard to review and report back on the proposed rules and amendments, specifically as to impact on the NMSLO.

284. Mr. Martinez testified that the NMSLO is supportive of the proposed rule and amendments.

285. Mr. Martinez expressed reservations about the use of estimates within the proposed rules and amendments, preferring language to require reliable data for use by the NMSLO. Mr. Martinez cited to NMOGA's proposed calculations as an improvement, but specifically referenced calculation elements to achieve a reliable flare estimate, such as GOR testing ratio, sales volumes and beneficial lease use. Mr. Martinez also desires independent verification, which also contributes to reliable data for the NMSLO. Mr. Martinez further explained that the NMSLO relies heavily on C-115 forms, but seeks better data that should come from the proposed vented and flared gas reporting requirements.

286. Mr. Martinez supports the Division's proposed language requiring operators to provide vented and flared volume reports to royalty owners. Mr. Martinez stated that such reports would allow the NMSLO to ensuring it is collecting all owed royalty payments.

287. Mr. Martinez favors the proposed reporting requirements for vented and flared gas to help determine volumes released on state trust land, especially if the reports break down releases on a per-well basis.

288. Mr. Martinez expressed the NMSLO's interest in tightening of enforcement mechanisms for the Division beyond what is currently proposed.

289. Deliberation and Action. The Commission began deliberations regarding the proposed rule changes on February 11-12, 2021. The Commission reached a tentative decision on the proposed rule changes, and requested that Commission Counsel prepare a proposed order for its review and approval. At the meeting on March 25, 2021, the Commission reviewed the proposed rule changes and the proposed order, and adopted the rule changes as provided in attached Exhibit A for the reasons set forth herein.

290. Reasons for Adopting Rule Changes. The Commission finds that the proposed rule amendments and new rules are a reasonable implementation of the New Mexico Governor's Executive Order and are supported by substantial evidence. The proposed rule amendments and new rules appropriately amend Rules 19.15.7, 19.15.18 and 19.15.19 NMAC and add two new rules, 19.15.27 and 19.15.28 NMAC, to ensure that each rule is consistent with the Oil and Gas Act. The Commission finds that the proposed rule changes and additions, as modified, create a necessary and appropriately revised framework for the Division and Commission regulation of vented and flared gas waste. The proposed rule changes and additions, as modified, appropriately

outline the jurisdiction of the Division with respect to the regulation of vented and flared natural gas waste in the oil and gas industry.

291. The Commission finds that the Division's revision of reporting requirements as described in proposed rules 19.15.27 and 19.15.28 NMAC are necessary to ensure that the Division begins collecting data related to the venting or flaring of natural gas in the oil and gas industry to inform Division regulation and, in particular, the 98% capture requirement for all operators by 2026. The Commission rejects most competing revisions or alterations to the Division's version of 19.15.27 and 19.15.28 NMAC with the exception of particular NMOGA-proposed language detailed below. The Commission believes that reporting of reliable data by operators is critical to the prevention of waste, as requested by the Division.

292. The Commission finds that the Division's amendments to 19.15.7, 19.15.18 and 19.15.19 NMAC appropriately update those rules to be consistent with current language usage and organizational needs. The Commission further finds that the Division's amendments to 19.15.7, 19.15.18 and 19.15.19 NMAC are consistent with the Division's proposed rules 19.15.27 and 19.15.28 NMAC. Therefore, the Commission finds that the Division's proposed amendments to 19.15.7, 19.15.18 and 19.15.19 NMAC are accepted.

293. The Commission generally finds that the Division's proposed rules 19.15.27 and 19.15.28 NMAC provide clear requirements to producers to prevent the unnecessary venting and flaring of natural gas while also enhancing the quality of data reported to the Division, as well as reflect the new regulatory charge of the Division and hereby adopts the Division's changes, subject to the following Commission changes and findings:

- a. The Commission hereby removes the phrase "appropriate division district" from parts 27 and 28 and replaces that phrase with "division."
- b. The Commission rejects Climate Advocates' proposed changes to the definition section of 19.15.27.7 NMAC in favor of the Division's proposed definitions with Commission alterations.
- c. The Commission rejects NMOGA's proposed language for 19.15.27.8(D)(2)(b), 19.15.27.8(G)(2)(m), and 19.15.28.8(F)(2)(j). The Commission hereby revises 19.15.28.7(D)(6) to state as follows: recurring equipment failure 4 or more times within a single reporting area pursuant to Subsection A of 19.15.28.10 experienced by the operator within the preceding 30 days; or
- d. The Commission modifies the definition found in 19.15.27.7(H)(7) to read: 4 or more times within a single reporting area pursuant to subsection A of 19.15.27.7 experienced by the operator within the preceding 30 days.
- e. The Commission hereby revises 19.15.27.7(P) to state as follows: means the period that begins on the earlier of 31 days following the commencement of

initial flowback, or following completion of separation flowback, and concludes when the well is plugged and abandoned.

- f. The Commission hereby revises 19.15.27.8(B)(2) to state as follows: A properly sized flare stack shall be located at a minimum of 100 feet from the nearest surface hole location unless otherwise approved by the division.
- g. The Commission hereby revises 19.15.27.8(C)(1) to read: during initial flowback, the operator shall route flowback fluids into a completion or storage tank and, if technically feasible flare rather than vent, and commence operation of a separator as soon as it is technically feasible for a separator to function, to ensure that when feasible, such as during completion or recompletion of a natural gas well, flaring is achieved over venting.
- h. The Commission hereby revises 19.15.27.8(C)(3)(a) to state as follows: the properly sized flare stack is equipped with an automatic igniter or continuous pilot;
- i. The Commission hereby revises 19.15.27.8(D)(4)(e) to state as follows: normal operation of a storage tank or other low-pressure production vessel, but not including venting from a thief hatch that is not properly closed or maintained on an established schedule
- j. The Commission hereby revises 19.15.27.8(D)(4)(h) to state as follows: normal operations of valves, flanges and connectors that is not the result of inadequate equipment design or maintenance;
- k. The Commission hereby revises 19.15.27.8(E)(3) to state as follows: The operator shall combust natural gas in a flare stack that is properly sized and designed to ensure proper combustion efficiency;
- l. The Commission hereby revises 19.15.27.8(E)(5)(a)(i) to state as follows: comprehensive external visual inspection;
- m. The Commission hereby adds a 19.15.27.8(E)(7) to state as follows: for facilities constructed after {EFFECTIVE DATE OF RULE}, facilities shall be designed to minimize waste;
- n. The Commission hereby adds a 19.15.27.8(E)(8) to state as follows: Operators have an obligation to minimize waste and shall resolve emergencies as quickly and safely as is feasible.
- o. The Commission hereby revises 19.15.27.8(F) to state as follows:
Measurement or estimation of vented and flared natural gas.

- p. The Commission hereby revises 19.15.28.8(E) to state as follows: The operator shall install equipment to measure the volume of natural gas flared from a natural gas gathering system.
- q. The Commission hereby revises 19.15.27.8(G)(2) to state as follows: For each well or facility at which venting or flaring occurred, operator shall separately report the volume of vented natural gas and volume of flared natural gas for each month in each category listed below. Beginning October 1, 2021, the operator shall gather data for quarterly reports in a format specified by the division and submit by February 15, 2022 for the fourth quarter and May 15, 2022 for the first quarter. Beginning April 2022, the operator shall submit a form C-115B monthly on or before the 15th day of the second month following the month in which it vented or flared natural gas. The operator shall specify whether it estimated or measured each reported volume. In filing the initial report, the operator shall provide the methodology (measured or estimated using calculations and industry standard factors) used to report the volumes and shall report changes in the methodology on future forms. The operator shall make and keep records of the measurements and estimates, including records showing how it calculated the estimates, for no less than five years and make such records available for inspection by the division upon request. The categories are:
 - r. The Commission hereby revises 19.15.27.8(G)(2)(b) to state as follows: non-scheduled maintenance or malfunction, including the abnormal operation of equipment;
 - s. The Commission hereby revises 19.15.27.8(G)(2)(f) to state as follows: storage tanks;
 - t. The Commission hereby revises 19.15.27.8(G)(h)(ii) to state as follows: O₂ concentrations do not meet gathering pipeline quality specifications except during commissioning of pipelines, equipment, or facilities pursuant to Subparagraph (l) of Paragraph (4) of Subsection D of 19.15.27.8 NMAC, except as otherwise approved by the Division;
 - u. The Commission hereby revises 19.15.27.8(G)(2)(k) to state as follows: venting or flaring in excess of eight hours that is caused by an emergency, unscheduled maintenance or malfunction of a natural gas gathering system as defined in 19.15.28 NMAC;
 - v. The Commission hereby revises 19.15.27.8(H)(3)(a) to state as follows: To calculate the lost natural gas on a volumetric basis, the operator shall deduct the volume of natural gas sold, used for beneficial use, vented or flared during an emergency, and vented or flared because it was not suitable for transportation or processing due to N₂, H₂S, or CO₂ concentrations, vented as a result of

normal operation of pneumatic controllers and pumps if reported pursuant to Subparagraph (i) of Paragraph (2) of Subsection (G) of 19.15.27.8 NMAC, or vented or flared from an exploratory well with division approval, from the natural gas produced;

- w. The Commission hereby revises 19.15.27.8(H)(3)(b) to state as follows: To calculate the lost natural gas captured on a percentage basis, the operator shall deduct the volume of lost gas calculated in Subparagraph (a) of Paragraph (3) of Subsection G of 19.15.27.8 NMAC from the total volume of natural gas produced and divide by the total volume of natural gas produced, add the volume of natural gas sold, used for beneficial use, vented or flared during an emergency and vented or flared because it was not suitable for transportation or processing, due to N₂, H₂S, or CO₂ concentrations, and divide by the total volume of natural gas produced;
- x. The Commission hereby revises 19.15.27.8(H)(4) to state as follows: Beginning June 2022, provide a copy of the C-115B to the New Mexico State Land Office for a well or facility in which the state owns a royalty interest and the operator shall notify all royalty interest owners of their ability to obtain the information from the division's website at the time the initial C-115B is filed.
- y. The Commission hereby revises 19.15.27.9(A) to state as follows: **Statewide natural gas capture requirements.** Commencing April 1, 2022, the operator shall reduce the annual volume of vented and flared natural gas in order to capture no less than ninety-eight percent of the natural gas produced from its wells in each of two reporting areas, one north and one south of the Township 10 North line, by December 31, 2026. The division shall calculate and publish on the Division's website each operator's baseline natural gas capture rate based on the operator's fourth quarter 2021 and second quarter 2022 quarterly reports as per paragraph 2 of subsection G of 19.15.27.8 NMAC. In each calendar year between January 1, 2022 and December 31, 2026, the operator shall increase its annual percentage of natural gas captured in each reporting area in which it operates based on the following formula: (baseline loss rate minus two percent) divided by five. Except that for 2022 only, an operator's percentage of natural gas captured shall not be less than seventy-five percent (75%) of the minimum required annual natural gas capture percent.
- z. The Commission hereby revises 19.15.27.9(A)(1)(3) to state as follows: An operator's acquisition or sale of one or more wells from another operator shall not affect its annual natural gas capture requirements. No later 60 days following the acquisition or sale, the operator may file a written request to the division requesting to modify its gas capture percentage requirements for good cause based on its acquisition or sale. The division may approve, approve with conditions, or deny the request in its sole discretion.

- aa. The Commission hereby revises 19.15.27.9(B)(5) to state as follows: The Division shall publish a list of Division-approved ALARM technologies on the Division's website.
- bb. The Commission hereby revises 19.15.27.9(D)(1) to state as follows: After {EFFECTIVE DATE OF RULE} the operator shall file a natural gas management plan with each APD for a new or recompleted well. The operator may file a single natural gas management plan for multiple wells drilled or recompleted from a single well pad or that will be connected to a central delivery point. The natural gas management plan shall describe the actions that the operator will take at each proposed well to meet its statewide natural gas capture requirements and to comply with the requirements of Subsections A through F of 19.15.27.8 NMAC, including for each well:
- cc. The Commission hereby revises 19.15.27.9(D)(2) to state as follows: Beginning April 1, 2022, an operator that, at the time it submits an APD for a new or recompleted well is, cumulatively for the year, not in compliance with its baseline natural gas capture rate for the applicable reporting area if the APD is submitted on or after April 1, 2022 or its natural gas capture requirement for the previous year if the APD is submitted in 2023 or after shall also include the following information in the natural gas management plan:
- dd. The Commission hereby revises 19.15.27.9(D)(5) to state as follows: If the operator determines it will not be able to connect a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced on the date of first production from the well, the operator shall either shut-in the well until the operator submits the certification required by Paragraph (4) of Subsection D of 19.15.27.7 NMAC or submit a venting and flaring plan to the division that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:
- ee. The Commission hereby revises 19.15.27.9(D)(7) to state as follows: The division may deny the APD or conditionally approve the APD if the operator does not:
- ff. The Commission hereby revises 19.15.27.9(D)(7)(b) to state as follows: fails to submit an adequate venting and flaring plan, which includes alternative beneficial uses for the anticipated volume of natural gas produced, or
- gg. The Commission hereby revises 19.15.28.7(D)(6) to state as follows: recurring equipment failure 4 or more times within a single reporting area pursuant to Subsection A of 19.15.28.10 experienced by the operator within the preceding 30 days; or

- hh. The Commission hereby revises 19.15.28.7(D)(7) to state as follows: Four or more emergencies within a single reporting area pursuant to Subsection A of 19.15.28.10 NMAC experienced by the operator within the preceding 30 days, unless the division determines the operator could not have reasonably anticipated the current event and it was beyond the operator's control.
- ii. The Commission hereby revises 19.15.28.8(B)(2)(e) to state as follows: normal operations of valves, flanges and connectors that is not the result of inadequate equipment design or maintenance;
- jj. The Commission hereby revises 19.15.28.8(B)(2)(f) to state as follows: normal operation of a storage tank or other low-pressure production vessel, but not including venting from a thief hatch that is not properly closed or maintained on an established schedule
- kk. The Commission hereby revises 19.15.28.8(C)(4)(i) to state as follows: comprehensive external visual inspection;
- ll. The Commission hereby revises 19.15.28.8(C)(4)(i) to state as follows: The operator shall perform an annual monitoring of the entire length of a gathering pipeline using an AVO technique, ALARM technology, aerial visual inspections, or other valid method to detect leaks and releases. The operator shall record and, upon the division's request, report the date and time of the monitoring, the method and technology used. The operator shall retain records of monitoring for at least five years. Personnel conducting inspections shall be knowledgeable on the methods and technology being used;
- mm. The Commission hereby revises 19.15.28.8(C)(6) to state as follows: For facilities constructed after {EFFECTIVE DATE OF RULE}, facilities shall be designed to minimize waste;
- nn. The Commission hereby revises 19.15.28.8(C)(7) to state as follows: Operators have an obligation to minimize waste and shall resolve emergencies as quickly and as safely as is feasible.
- oo. The Commission hereby revises 19.15.28.8(E) to state as follows: **Measurement or estimation of vented and flared natural gas.**
- pp. The Commission hereby revises 19.15.28.8(E) to state as follows: The operator shall install equipment to measure the volume of natural gas flared from a natural gas gathering system.
- qq. The Commission hereby revises 19.15.28.8(F)(2) to state as follows: **Monthly reporting of vented and flared natural gas.** For each natural gas gathering system at which venting or flaring occurred, the operator shall separately report

the volume of vented natural gas and the volume of flared natural gas for each month in each category listed below. Beginning October 1, 2021, the operator shall gather data for quarterly reports in a format specified by the division and submit by February 15, 2022 for the fourth quarter of 2021 and May 15, 2022 for the first quarter of 2022. Beginning April 2022, the operator shall submit a form C-115B monthly on or before the 15th day of the second month following the month in which it vented or flared natural gas. The operator shall specify whether it estimated or measured each reported volume. In filing the initial report, the operator shall provide the methodology (measured or estimated using calculations and industry standard factors) used to report the volumes on the form, and shall report changes in the methodology on future forms. The operator shall make and keep records of the measurements and estimates, including records showing how it calculated the estimates, for no less than five years and make such records available for inspection by the division upon request. The categories are:

- rr. The Commission hereby revises 19.15.28.8(F)(2)(g) to state as follows: storage tanks;
- ss. The Commission hereby revises 19.15.28.9(A)(2) to state as follows: for an existing gathering pipeline or natural gas gathering system no later than 90 days after the effective date of this rule; and
- tt. The Commission hereby revises 19.15.28.9(C) to state as follows: No later than July 31 of each year, the operator shall file with the division an updated GIS digitally formatted as-built map of its gathering pipeline or natural gas gathering system, which shall include a GIS layer that identifies the date, location and volume of vented or flared natural gas of each emergency, malfunction and release reported to the division since 19.15.28 NMAC became applicable to the pipeline or system.
- uu. The Commission hereby revises 19.15.28.10(A) to state as follows: **Statewide natural gas capture requirements.** Commencing April 1, 2022, the operator of a natural gas gathering system shall reduce the annual volume of vented and flared natural gas in order to capture no less than ninety-eight percent of the natural gas gathered in each of two reporting areas, one north and one south of the Township 10 North line, by December 31, 2026. The division shall calculate and publish on the Division's website each operator's baseline natural gas capture rate based on the operator's fourth quarter of 2021 and first quarter 2022 quarterly reports as per Paragraph (2) of Subsection G of 19.15.28.8 NMAC. In each calendar year between January 1, 2022 and December 31, 2026, the operator shall increase its annual percentage of natural gas captured in each reporting area in which it operates based on the following formula: (baseline loss rate minus two percent) divided by five. Except that for 2022 only, an

operator's percentage of natural gas captured shall not be less than seventy-five percent (75%).

- vv. The Commission hereby revises 19.15.28.10(A)(3) to state as follows: An operator's acquisition or sale of a natural gas gathering system from another operator shall not affect its annual natural gas capture requirements. No later than 60 days following the acquisition or sale, the operator may file a written request to the division requesting to modify its annual gas capture percentage requirements for good cause based on its acquisition or sale. The division may approve, approve with conditions, or deny the request in its sole discretion.
- ww. The Commission hereby revises 19.15.28.10(B) to state as follows: No later than February 28 each year beginning in 2023, the operator shall submit a report certifying compliance with its statewide gas capture requirements. The operator shall determine compliance with its statewide gas capture requirements by deducting any ALARM credits approved pursuant to this subsection from the aggregated volume of lost gas calculated for each month during the preceding year pursuant to Subparagraph (a) of Paragraph (3) of Subsection F of 19.15.27.8 NMAC, deducting that aggregated volume of lost gas from the aggregated volume of natural gas produced for each month during the preceding year, and dividing that volume by the aggregated volume of natural gas produced for each month during the preceding year.
- xx. The Commission hereby revises 19.15.28.10(B)(5) to state as follows: The Division shall publish a list of Division-approved ALARM technologies on the Division's website.

THE COMMISSION CONCLUDES THAT:

1. The Commission has jurisdiction, under the Oil and Gas Act, NMSA 1978, §§ 70-2-1 to -38, over the parties and subject matter of this case.
2. The Commission has legal authority, under the Oil and Gas Act, to enact the proposed rule changes.
3. The Commission provided due public notice and an opportunity for the public to provide comments regarding the proposed rule change. The Commission held a public rulemaking hearing and provided a reasonable opportunity for all persons present or interested in the subject matter of the rulemaking hearing to provide testimony, evidence and exhibits.
4. All Commissioners were present at the public hearing with exception of Commissioner Engler, who was unable to attend two days of the hearing, but reviewed all transcripts and admitted evidence consistent with his duties and obligations. All Commissioners analyzed and considered all the evidence presented during the hearing, including the proposed amendments submitted by the parties. The Commission deliberated at a public hearing on February 11-12, 2021 and adopted the rule changes as stated above.

5. The Commission concludes that there is substantial evidence in the record to support the Division's proposed rule changes and the Commission's revisions to those changes, that these rule changes are within the authority of the Commission under the Oil and Gas Act and that these rule changes are reasonable and further the goals of the Oil and Gas Act.

IT IS THEREFORE ORDERED THAT:

The proposed amendments to Rules 19.15.7, 19.15.18 and 19.15.19 NMAC and addition of proposed new rules 19.15.27 and 19.15.28 NMAC are hereby approved by the Commission. The adoption of the rule changes will be final upon the latter of (a) the action, or deemed action, of the Commission on a rehearing application filed pursuant to NMSA 1978, § 70-2-25, or (b) twenty (20) days from the date of this order if no rehearing application is filed. The rule change shall not be filed with the state records administrator until the rule change is adopted and then must be filed within fifteen (15) days after the adoption. If no rehearing is required by the Commission, this Order shall serve as the "concise explanatory statement" required by NMSA 1978, § 14-4-5.5 (2017).

DONE at Santa Fe, New Mexico, on this 25th Day of March 2021.

**STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION**

 3/25/2021

DR. THOMAS ENGLER, P.E., MEMBER

 3/25/21

GREGORY BLOOM, MEMBER

 3/25/2021

ADRIENNE SANDOVAL, M.E., CHAIR