

BEFORE THE COLORADO AIR QUALITY CONTROL COMMISSION

REGARDING PROPOSED REVISIONS TO)
REGULATION NUMBER 7, 5 CCR 1001-9)

**PREHEARING STATEMENT OF CONSERVATION GROUPS (SIERRA CLUB,
EARTHWORKS, AND THE CENTER FOR BIOLOGICAL DIVERSITY)**

EXECUTIVE SUMMARY

Sierra Club, Earthworks, and the Center for Biological Diversity (collectively, the Conservation Groups) support the Air Pollution Control Division’s (Division) intent to strengthen the pneumatic controller provisions in Regulation No. 7. Revisions are necessary to make progress toward meeting Senate Bill 181’s mandate to “minimize” oil and gas emissions, House Bill 19-1261’s greenhouse gas emission reduction mandate, and attaining the 2008 8-hour ozone National Ambient Air Quality Standards (NAAQS) within the Denver Metro/North Front Range Non-Attainment Area (NAA).

However, the Air Quality Control Commission (Commission) must go further to satisfy these legal mandates. The Colorado legislature required that the Commission “minimize” oil and gas emissions, including by considering pneumatics that do not vent natural gas to the atmosphere (“non-emitting controllers”), and this Commission has directed the Division to consider additional pneumatic controller requirements numerous times. Additionally, Governor Polis’ roadmap shows that to meet the legislature’s greenhouse gas emission reductions requirements, this Commission needs to achieve substantial emission reductions from the oil and gas industry. Moreover, we are not meeting either the 2008 or 2015 federal ozone standards in nonattainment area (NAA). To put Colorado on the path to meeting all of these goals, the Commission must take additional steps to control emissions from pneumatic devices—the second largest source of oil and gas volatile organic compound (VOC) emissions in the NAA behind tanks.

The Division’s proposal requires that all new controllers be non-emitting at all new and modified facilities beginning May 1, 2021, subject to a safety exemption. Conservation Groups developed compromise regulatory language jointly with the Environmental Defense Fund (EDF), the Joint Industry Working Group (JIWG), the Local Government Coalition, and the Local Community Organizations, and other industry participants. This compromise language forms the basis of Conservation Group’s alternate proposal. The alternate proposal goes further than the Division’s proposal by requiring operators with existing well production facilities or natural gas compressor stations to develop plans on a company-wide basis to begin phasing in retrofits of emitting pneumatic controllers at their existing facilities. In addition, the alternate proposal requires well production facilities where a well is newly drilled, refractured, or recompleted to retrofit existing intermittent or continuous bleed controllers with non-emitting controllers. These requirements are subject to limited exceptions. The alternate proposal is outlined in more detail below.

By adopting Conservation Group’s alternate proposal, Colorado could once again lead the nation in oil and gas methane regulation by becoming the first state in the country to require retrofits with non-emitting controllers at existing facilities. The proposal would achieve significant emission reductions, and represents a critical step toward achieving the 2008 and

2015 ozone NAAQS and meeting Colorado’s greenhouse gas emissions goals. We urge the Commission to adopt the alternate proposal, laying the groundwork for further emissions reductions to be considered during upcoming rulemakings in 2021 and in the coming years.

FACTUAL AND LEGAL ISSUES

I. REDUCING PNEUMATIC CONTROLLER EMISSIONS IS NECESSARY TO ADDRESS CLIMATE AND OZONE POLLUTION.

The Division proposal to require expanded use of new non-emitting controllers for new and modified facilities is a step in the right direction. But more is needed to address the climate emergency, to “minimize” oil and gas emissions, and to address Denver’s ongoing ozone pollution problem.

A. The Commission Must Do More to Address Climate Change and Ozone Pollution.

Recognizing the climate emergency, House Bill 19-1261 set specific targets for reducing greenhouse gas emissions throughout the state. To achieve these targets, Colorado’s draft Greenhouse Gas Pollution Reduction Roadmap outlines the steps that the oil and gas sector must take. In particular, the Roadmap calls for at least a 33% reduction in methane emissions from the oil and gas sector by 2025, and at least a 50% reduction by 2030.¹ As the Roadmap highlights, methane reductions from the oil and gas industry present a large opportunity because these emissions are the largest source of non-combustion emissions in the state, and because controls on oil and gas emissions are relatively low cost.² Given the state’s mandate to substantially reduce methane emissions from the oil and gas sector, the Commission must go beyond the Division’s proposal in order to put Colorado on track to meet its goals.

Indeed, the importance of reducing methane emissions has never been clearer in Colorado. This year has seen three of the top four largest fires in the state’s history, collectively burning nearly 700,000 acres—shattering record after record.³ This unprecedented wildfire season has forced thousands of Coloradans to evacuate their homes.⁴ Homes have been destroyed and residents are suffering respiratory harms caused by smoke. Governor Polis has

¹ Colorado Energy Office et al., *Colorado Greenhouse Gas Pollution Reduction Roadmap: Public Review Draft* x, 60, 80 (Sept. 30, 2020) (CG_PHS_EX-001) [hereinafter Roadmap].

² *Id.* at 53–54.

³ See Hillary Rosner, *Boulder, Colorado wakes up to the threat of worsening wildfires*, NAT’L GEOGRAPHIC (Oct. 26, 2020), <https://www.nationalgeographic.com/environment/2020/10/boulder-isnt-ready-to-evacuate-for-wildfires/>; Alexandra Kelley, *Colorado wildfires are breaking records*, THE HILL (Oct. 23, 2020), <https://thehill.com/changing-america/resilience/natural-disasters/522427-colorado-wildfires-are-breaking-records>; John Ingold, *Five charts that show where 2020 ranks in Colorado wildfire history*, COLORADO SUN (Oct. 20, 2020), <https://coloradosun.com/2020/10/20/colorado-largest-wildfire-history/>.

⁴ See Elizabeth Hernandez, *Emergency Alerts: How to stay informed about Colorado wildfire evacuations in your area*, DENVER POST (Oct. 23, 2020), <https://www.denverpost.com/2020/10/23/colorado-wildfire-evacuations-emergency-alerts/>; Dom Calicchio, *Elderly Colorado wildfire victims died ‘in each other’s arms,’ family members say*, FOX NEWS (Oct. 24, 2020), <https://www.foxnews.com/us/elderly-colorado-wildfire-victims-died-in-each-others-arms-family-members-say>.

recognized that the size of these destructive fires is due to a “hotter, drier climate.”⁵ As the director of the Colorado Energy Office has noted, these severe impacts of climate change are “happening much earlier than expected.”⁶ This new reality only heightens the urgency of the Commission’s mandate to address methane emissions.

In addition to the greenhouse gas reduction mandates, in Senate Bill 19-181 the legislature directed the Commission to “*minimize* emissions of methane and other hydrocarbons, volatile organic compounds, and oxides of nitrogen” from the entire “natural gas supply chain.”⁷ Recognizing the need to further address emissions from pneumatic controllers, the law directs the Commission to “review its rules for oil and natural gas well production facilities and compressor stations and specifically consider adopting more stringent provisions, including . . . [a] requirement to reduce emissions from pneumatic devices. The [Commission] shall consider requiring oil and gas operators, under appropriate circumstances, to use pneumatic devices that do not vent natural gas.”⁸

More aggressive measures are also necessary to further reduce ozone pollution. The Denver Metro/North Front Range area has been in nonattainment with federal ozone standards for over a decade. It is currently designated as being in “serious” nonattainment with the 2008 75 parts per billion (ppb) ozone standard, but designation as “severe” is imminent as a result of violations picked up by air monitors last year.⁹ Unable to attain the 75 ppb standard, the state shows no signs of complying with the 2015 70 ppb ozone standard. As a result of the unhealthy air in the NAA, Coloradans are faced with unnecessary asthma attacks, missed days of school and work, and even premature death.¹⁰ In the face of a global pandemic involving a virus that attacks respiratory systems, the NAA’s failure to meet federal ozone standards constitutes an unacceptable harm to its residents.

Furthermore, hazardous air pollutants (HAPs) emitted by oil and gas development, such as benzene and formaldehyde, are a serious danger to public health. Many of the scientific studies documenting the harms posed by oil and gas sector hazardous air pollution emissions have been conducted in Colorado.¹¹ With these serious health risks affecting Coloradans across

⁵ John Fialka, *Colorado Contends with Record-Setting Wildfires*, SCIENTIFIC AMERICAN (Oct. 26, 2020), <https://www.scientificamerican.com/article/colorado-contends-with-record-setting-wildfires/>.

⁶ Bruce Finley, *As Colorado wildfires burn, fears that climate change is causing “multi-level emergency” mount*, DENVER POST (Oct. 25, 2020), <https://www.denverpost.com/2020/10/25/colorado-wildfires-climate-change/>.

⁷ Colo. Rev. Stat. § 25-7-109(10)(a) (emphasis added).

⁸ *Id.* § 25-7-109(10)(b)(I)(D).

⁹ Governor Polis acknowledged in December 2020 that the NAA is expected to be downgraded to Severe in early 2022 for the 2008 Ozone NAAQS. *See* Andrew Baker, *Colorado Officials to Ramp Up Ozone Controls on Natural Gas, Oil Industry*, NATURAL GAS INTEL (Dec. 28, 2020), <https://www.naturalgasintel.com/colorado-officials-to-ramp-up-ozone-controls-on-natural-gas-oil-industry/>.

¹⁰ *See generally* Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources, 81 Fed. Reg. 35,824, 35,837 (June 3, 2016) (describing ozone’s health impacts in the preamble to EPA’s New Source Performance Standards (NSPS), 40 C.F.R. pt. 60 subpt. OOOOa, which address emissions from new and modified sources in the oil and gas sector).

¹¹ *See, e.g.,* Lisa M. McKenzie et al., *Birth Outcomes and Maternal Residential Proximity to Natural Gas Development in Rural Colorado*, 122 *Envtl. Health Persp.* 412, 414 (2014) (CG_PHS_EX-002); Lisa M. McKenzie et al., *Human Health Risk Assessment of Air Emissions*

the state, the Commission should adopt a robust pneumatics provision that protects Colorado’s health and welfare.

B. The Commission Must Address Pneumatic Controller Emissions.

The 2008 Ozone SIP identifies pneumatic controllers as the second largest source of oil and gas emissions behind tanks in the NAA.¹² EPA’s U.S. Greenhouse Gas Reporting Data shows that tens of thousands of pneumatic controllers are operating statewide in Colorado.¹³ These controllers include both intermittent bleed controllers and continuous bleed controllers, although the bulk are intermittent bleed.¹⁴ Intermittent and continuous low-bleed pneumatic controllers emit VOCs, methane, and HAPs both from both normal operations and due to malfunctions.¹⁵ These emissions can be significant.

For example, even when operating properly, intermittent-bleed devices may actuate very frequently, emitting large volumes of pollutants.¹⁶ As set forth in Dr. McCabe’s testimony, there are numerous studies showing that intermittent controllers often emit more than they are designed to emit due to malfunctions, and such malfunctions can result in continuous emissions.¹⁷ These include the Pneumatic Controller Task Force field study, which as discussed in greater detail below, was a 2018 operator-led study in the Denver-Julesburg (DJ) Basin, and the Stovern et al. study which was also conducted in 2018 in DJ Basin.¹⁸ Dr. McCabe also identifies additional studies showing that low-bleed continuous bleed controllers often emit more than they are designed to emit (no more than 6 scfh).¹⁹ Given the large number of pneumatic devices statewide, these emissions are cumulatively significant.

The Commission has long been aware of the need to control pneumatic controller emissions. In 2014, the Commission required all existing high-bleed controllers to be replaced with low-bleed controllers, but did not address emissions from existing intermittent bleed controllers, even though they constitute the majority of controllers in the state.²⁰ The Commission also required all new pneumatic controllers to be no-bleed (or non-emitting) where on-site electrical grid power was available and use of a no-bleed controller was technically and

from Development of Unconventional Natural Gas Resources, 424 Sci. Total Env’t 79, 80 (2012) (CG_PHS_EX-003).

¹² Colorado Air Quality Control Commission & Regional Air Quality Council, *Serious State Implementation Plan for the Denver Metro and North Front Range Ozone Nonattainment Area* 3-6, 4-24 (last revised Dec. 18, 2020) (CG_PHS_EX-004) [hereinafter “Proposed SIP”].

¹³ CG_ALT_EIA, Appendix.

¹⁴ Regulation Number 7 defines the various types of pneumatic controllers. A “high-bleed pneumatic controller” is one “that is designed to have a continuous bleed rate that emits in excess of 6 standard cubic feet per hour (scfh) of natural gas to the atmosphere. 5 Colo. Code Regs. § 1001-9:D.III.B.5. A “low-bleed pneumatic controller” is one “that is designed to have a continuous bleed rate that emits less than or equal to 6 scfh of natural gas to the atmosphere.” *Id.* § 1001-9:D.III.B.7. An “intermittent pneumatic controller” is one that “vents non-continuously.” *Id.* § 1001-9:D.III.B.6. A “no-bleed pneumatic controller” is one that “is not using hydrocarbon gas as the valve’s actuating gas.” *Id.* § 1001-9:D.III.B.9. No-bleed pneumatic controllers are also known as “zero bleed” or “non-emitting” pneumatic controllers.

¹⁵ Written Testimony of Dr. David McCabe at 2 (CG_PHS_EX-005).

¹⁶ *Id.*

¹⁷ *Id.* at 2–4.

¹⁸ *Id.*

¹⁹ *Id.* at 4.

²⁰ 5 Colo. Code Regs. § 1001-9:D.III.C.3.b.

economically feasible.²¹ During the rulemaking, Conservation Groups argued the Commission should do more to address emissions from continuous bleed and intermittent bleed controllers due to the fact that they can malfunction, and intermittent bleed pneumatics can actuate frequently. Although the Commission did not adopt Conservation Groups’ proposals, it ordered the Division to “work with industry and other stakeholders to evaluate emissions from and potential control strategies for . . . intermittent pneumatic controllers.”²²

In a December 2017 rulemaking, the Commission attempted to address this problem by establishing a pneumatic controller “find and fix” program within the nonattainment area. The regulation requires owners or operators of well production facilities and compressors to inspect pneumatic controllers using an approved instrument monitoring method on a fixed schedule.²³ If the owner or operator finds “detectable emissions,” it must “determine whether the pneumatic controller is operating properly within five (5) working days after detecting emissions.”²⁴ If the operator determines the pneumatic controller is not operating properly, it “must conduct enhanced response or follow manufacturer specifications to return the pneumatic controller to proper operation.”²⁵

Although the find and fix program was an improvement, this type of inspection regime will still leave substantial emissions from pneumatic controllers. First, even properly operating controllers will have some emissions, which often will be significant. For example, intermittent controllers that actuate frequently (for example, the level controllers on separators on wells with high liquids production) often have high emissions just due to this reason.²⁶ Second, emissions from any malfunction will occur from the time that the malfunction arises until it is repaired. Since many well production facilities in Colorado can go many months between inspections, these malfunctions can lead to ongoing emissions for some time.

The best control strategy is one that eliminates emissions altogether.²⁷ Accordingly, during the December 2017 rulemaking, Conservation Groups offered an alternate proposal requiring owners or operators of compressor stations and well production facilities with 4 or more wells to utilize non-emitting (or no-bleed) controllers. The Conservation Groups supported their alternate proposal with an extensive economic impact analysis (EIA) demonstrating the economic feasibility of this proposal. The Commission did not adopt the proposal, and instead adopted the find and fix program.

In the Statement of Basis and Purpose for the rulemaking, the Commission directed the Division to “reassess” the find and fix program following a Division-led study of pneumatic controller emission reduction options.²⁸ The Commission also directed the creation of a Pneumatic Controller Task Force that included representatives from the Division, operators and industry trade groups, local governments, and conservation groups.²⁹ Additionally, the Commission directed the creation of a task force to look at opportunities for statewide hydrocarbon emissions reductions from the oil and gas sector, including wider adoption of non-

²¹ 5 Colo. Code Regs. § 1001-9:D.III.C.3.a.(i).

²² *Id.* § 1001-9:F(N) (statement of basis and purpose for § XVII.F).

²³ *Id.* §§ 1001-9:D.III.F.2.a, F.2.d.

²⁴ *Id.* § 1001-9:D.III.F.2.g.

²⁵ *Id.* § 1001-9:D.III.F.2.h.

²⁶ McCabe Testimony at 2-3.

²⁷ *Id.* at 6.

²⁸ 5 Colo. Code Regs. § 1001-9:F.P (statement of basis and purpose for § XVIII).

²⁹ *Id.*

emitting controllers.³⁰ This group, which contained representatives from the Division, operators and industry trade groups, local governments, and conservation groups, became known as the Statewide Hydrocarbon Emission Reduction (SHER) team. Conservation Groups were members of both the Pneumatic Controller Task Force and the SHER team.

Throughout 2018 and 2019, both the Pneumatic Controller Task Force and the SHER Team met regularly. In 2018, the Pneumatic Controller Task Force focused on an operator-led study in the Denver-Julesburg (DJ) Basin that collected data on pneumatic controller malfunction rates and causes.³¹ As discussed above, this study found that 5.6% of inspected intermittent controllers were operating improperly. However, during the same time period, another study (Stovern et al.) found a malfunction rate of 11.3%, which it deemed an underestimate. As described in Dr. McCabe’s testimony, Stovern et al., as well as other evidence pointing to the difficulty of detecting improper operations with optical gas imaging (OGI), suggest that the inspection approach used in the Pneumatic Controller Task Force Study, which is the same approach used in the “find and fix” program, is missing some malfunctioning controllers.³²

During this time, the SHER team also met regularly to develop recommendations for hydrocarbon reduction opportunities. Conservation Groups again proposed their zero-bleed proposal for consideration. On June 11, 2019, the Pneumatic Controller Task Force and the SHER team held a joint meeting to hear presentations about Canadian regulation of pneumatic controllers, which is discussed in more detail below. Although the SHER team did not come to agreement on any proposal to expand the use of non-emitting controllers, it did reach consensus on a proposal to extend the “find and fix” program statewide.

Apparently dissatisfied with the pace of progress, in April 2019, the legislature adopted Senate Bill 19-181, which as discussed above directs the Commission to “minimize” oil and gas emissions throughout the supply chain and to specifically consider expanded use of non-emitting controllers.³³

In a December 2019 rulemaking, the Commission adopted the SHER team’s proposal to expand the find and fix program statewide.³⁴ The Commission also directed the Pneumatic Controller Task Force and the SHER team to continue their work and make recommendations to the Commission on the use of zero-bleed pneumatic devices.³⁵ The Pneumatic Controller Task Force Report to the Air Quality Control Commission was completed on June 1, 2020, and presented to the Commission on August 20, 2020.³⁶ The parties did not reach agreement with respect to options for expanding the use of no-bleed pneumatic devices.³⁷

In a December 2020 rulemaking, Conservation Groups again submitted their zero-bleed proposal for consideration. Industry groups remained opposed to a retrofit requirement predicated on the number of wells on a wellpad, but entered into discussion with Conservation Groups to identify alternative frameworks for retrofits. The Commission agreed in December

³⁰ *Id.* §1001-9:F.S.

³¹ Colo. Air Pollution Control Div., *Pneumatic Controller Task Force Report to the Air Quality Control Commission* (June 1, 2020) (CG_PHS_EX-005.004) [hereinafter PCTF Report].

³² McCabe Testimony, *supra* n.15, at 5–6.

³³ Colo. Rev. Stat. §§ 25-7-109(10)(a), 25-7-109(10)(b)(I)(D).

³⁴ 5 Colo. Code Regs. §§ 1001-9:D.III.F.2.b., F.2.e.

³⁵ 5 Colo. Code Regs. § 1001-9:F.S (statement of basis and purpose for December 2019 rulemaking).

³⁶ *See* PCTF Report, *supra* n.31.

³⁷ *Id.* at 36–40.

2020 to bifurcate the hearing and consider controls on pneumatic devices in this hearing, to allow parties additional time to come to agreement. The alternate proposal is the culmination of those efforts.

Due to the ubiquitous nature of pneumatic controllers and their propensity to malfunction, the Commission should consider expanding the use of non-emitting controllers. As discussed below, Conservation Groups' EIA demonstrates that expanded use of non-emitting controllers is both technically and economically feasible and would substantially reduce emissions from pneumatic controllers in Colorado.

C. Other Jurisdictions Require Non-Emitting Controllers, and They Are in Widespread Use.

Regulations currently in force in Alberta and British Columbia will significantly limit the use of venting gas-driven pneumatic controllers moving forward and provide support for expanding the use of non-emitting controllers in Colorado.³⁸

In Alberta, no new gas-driven venting pneumatic controllers can be installed after January 1, 2022 (this regulation was tightened in 2020—previously operators were to be allowed to use gas-driven venting controllers for up to 10% of new controllers after January 1, 2022).³⁹ Unlike the Division's proposal, which requires non-emitting controllers only at new or modified facilities, the Alberta regulations apply to all new controllers. Accordingly, replacement controllers at existing facilities are required to be non-emitting.

In British Columbia, as of January 1, 2021, new facilities cannot use venting gas-driven pneumatic controllers. Large compressor stations must retrofit all venting gas-driven pneumatic controllers by January 1, 2022.⁴⁰ Both provinces also subject existing pneumatic controllers, including intermittent pneumatic controllers, to various emission limits.

Non-emitting controllers—using both solar-powered and grid-powered electronic controllers and instrument air technology—are in widespread use in both the United States and Canada and readily available in the market.⁴¹ As the Carbon Limits study (discussed in detail below) found, multiple vendors provide these systems.⁴² Additionally, since the Carbon Limits study was completed, new products have been developed. For example, two companies produce units that use a combination of solar power and small gas-fired engines to generate power and compressed air to drive pneumatic controllers and eliminate natural gas venting from those controllers. These units are capable of providing air to dozens of pneumatic controllers.⁴³

³⁸ See McCabe Testimony, *supra* n.15, at 5, 10.

³⁹ Alberta Energy Regulator, *Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting* § 8.6.1, available at <https://static.aer.ca/prd/2020-10/Directive060.pdf>.

⁴⁰ Drilling and Production Regulation, B.C. Reg. 282/2010 §§ 52.05–52.07, available at <https://www.canlii.org/en/bc/laws/regu/bc-reg-282-2010/latest/bc-reg-282-2010.html>.

⁴¹ McCabe Testimony, *supra* n.15, at 9–10.

⁴² *Id.* at 7–9.

⁴³ *Id.* at 8.

II. THE COMMISSION SHOULD ADOPT CONSERVATION GROUPS' ALTERNATE PROPOSAL REQUIRING GREATER USE OF NON-EMITTING PNEUMATIC CONTROLLERS.

The best control strategies for pneumatic controllers are strategies which eliminate, rather than simply reduce, emissions. The Division's proposal recognizes the necessity of eliminating emissions from pneumatic controllers, but it only applies to new or modified facilities. As a result, existing pneumatic devices throughout Colorado will continue to emit methane, contribute to ozone formation, and expose communities to HAPs. In contrast, Conservation Groups' alternate proposal eliminates emissions from new sources as well as a portion of existing sources, and will achieve significant reductions without reliance on the efficacy of operator inspections.

A. Description of the Alternate Proposal

Conservation Group's alternate proposal requires that beginning May 1, 2021, new well production facilities and natural gas compressor stations would have to utilize only non-emitting controllers. This requirement would also apply to (1) existing well production facilities where a new well is drilled or where a well is refractured or recompleted on or after May 1, 2021, and (2) existing natural gas compressor stations that increase compression horsepower on or after May 1, 2021. Any such facilities would have to retrofit any existing venting gas-driven controllers.

The alternate proposal also requires additional retrofits at existing facilities. Operators with well production facilities or natural gas compressor stations that commence construction prior to May 1, 2021, would be required to develop companywide plans to convert some of their existing facilities to use non-emitting controllers. The operators would be required to phase in retrofits by May 1, 2023, with an interim deadline of May 1, 2022, as outlined in Tables 1 and 2 of the proposed regulatory text. Operators will have flexibility to choose where to implement those emission reduction measures. Operators who are further behind—for instance, those without any existing facilities using non-emitting controllers—would be required to do more than operators who are already utilizing some non-emitting controllers.

For well production facilities, the targets are based on total liquids production. Operators would be required to retrofit a portion of their production facilities to eliminate venting pneumatics from those sites. The additional percentage of liquids production that is required each year using non-emitting devices is based on an operator's 2019 total liquids volume that was produced using non-emitting devices. For the purposes of this program, total liquids includes produced water, oil, and condensate.

Although the standard is novel, it is grounded in our understanding of the factors that drive emissions from pneumatic controllers. Pneumatic controllers emit natural gas by design, but many pneumatic controllers also emit excessively due to maintenance issues and malfunctions. We believe that the AQCC's "find and fix" program, while not eliminating emissions from maintenance issues and malfunctions, does reduce these excessive emissions by a meaningful amount. In that context, the approach taken in the joint proposal focuses on reducing the emissions that result from "normal operations" of controllers.

EPA's Greenhouse Gas Reporting (GHGRP) data indicates that roughly 80–90% of controllers at Colorado production sites are intermittent controllers, and the great majority of normal operation emissions from intermittent controllers occur during actuation. For various reasons, we believe that actuations at production sites are somewhat correlated with liquids production, including both oil/condensate production and water production. The most intuitive

example of this is a liquid level controller on a separator, which opens the dump valve which directs liquids to storage vessels. As liquids production increases, this valve must actuate more frequently.

Therefore, in the context of Colorado's find-and-fix program, we believe that liquids production is a reasonable proxy for emissions from pneumatic controllers at well production facilities.

At compressor stations, the targets are based on the total number of controllers that each operator utilizes across its fleet of compressor stations. For these facilities, we do not believe that there is an appropriate throughput metric, analogous to the liquids production metric we propose for well production facilities. Therefore, the proposal uses controller count as the metric. We note that the approach taken provides additional flexibility for operators, since it allows them to perform partial retrofits of compressor stations if they find that it is more costly to replace a subset of controllers at a station that is otherwise a good candidate for retrofit.

The alternate proposal outlines a limited number of situations where operators may continue to use a non-emitting controller at new and existing facilities. Those situations are accompanied by robust requirements for recordkeeping, tagging, signage, and in some cases, advance Division approval.

Under the proposed rule, operators with total statewide oil and natural gas production averages of 15 barrels of oil equivalent (BOE) or less per day per well would not be subject to the companywide plan requirements. However, the Statement of Basis and Purpose expressly directs the Division to consider additional requirements to reduce emissions at sites not subject to retrofit pursuant to this provision. And these operators would still be subject to the requirements for new wellpads and wellpads with newly drilled, refractured, or recompleted wells.

B. Outstanding Issues

The parties have made substantial progress in crafting the alternate proposal and coming to consensus on the vast majority of issues. Nonetheless, the parties have been unable to reach agreement on several issues but intend to continue to work to come to consensus prior to the hearing.

1. Temporary and portable equipment

Conservation Groups propose including a very limited exemption for temporary and portable equipment. We are concerned that a broad exemption for temporary and portable equipment could create a loophole, whereby an operator could circumvent non-emitting controller requirements by bringing on “temporary” equipment that utilizes venting pneumatic controllers. Without limitations for the exception, such equipment could be used for months or even years at a time, polluting all the while.

However, Conservation Groups recognize the occasional need to use temporary equipment for maintenance and well abandonment activities. We have therefore proposed a narrow exemption that would allow operators to use temporary and portable equipment for maintenance and well abandonment activities for one month. Operators can request Division approval to extend the timeframe, if necessary, but must explain the need for any such extension. Requiring Division approval ensures that operators are not unnecessarily extending the use of portable equipment without adequate justification.

Absent a compromise on this issue, Conservation groups intend to propose language similar to the following:

III.C.4.e.(i)(B) Upon notice to the Division, pneumatic controllers located on temporary or portable equipment that is used for maintenance or well abandonment activities that is onsite for one month or less. An owner or operator may request written approval from the Division for an extension for continued use of pneumatic controllers associated with a piece of temporary or portable equipment. To request such an exemption, the owner or operator must submit a plan for Division approval which (1) identifies the temporary or portable equipment and how long the owner or operator plans to keep the equipment on site, and (2) explains the need for an extension (3) other information as reasonably required by the Division. In addition, for portable and temporary equipment that is used onsite for longer than one month, the operator must use an approved instrument monitoring method during the second month to identify leaks, and then complete approved instrument monitoring method and AVO at the same frequency as the associated well production facility or compressor station.

SBAP language: The rule provides a limited exemption for temporary or portable equipment which is used for maintenance or well abandonment activities that is onsite for one month or less. An owner or operator must provide notice to the Division that it will have temporary or portable equipment onsite pursuant to this exemption. Operators may request an extension beyond one month by submitting a plan to the Division for approval which describes the equipment, the length of time it plans to have the equipment onsite, the justification for the extension, and other information the Division reasonably requires. If the Division approves the extension, the operator must use AIMM and AVO to detect leaks from the temporary or portable equipment for the duration of the exemption. The Commission recognizes that most maintenance activities do not require temporary or portable equipment to be onsite for more than one month. In circumstances where this equipment is onsite for a longer period of time, the operator may request Division permission for continued use of emitting pneumatic controllers.

2. Approval of Safety and Process Exemptions by the Division

Industry is continuing to evaluate Conservation Group's proposal requiring Division approval before utilizing the safety and process exemption for both new facilities and retrofits. Conservation Groups believe Division approval for safety and process exemptions is necessary to ensure that the exception is used only in narrow circumstances and to facilitate compliance. Indeed, the Division's own proposal would require Division approval for the safety and process exemption, not merely recordkeeping.

3. Wellhead exemption limitations

Conservation Groups recognize that retrofitting wellhead sites that are separated from production facilities may be more difficult in some circumstances. However, it is important to ensure that the exemption for these sites be as narrow as possible. For that reason, the joint regulatory language includes an exception for certain pneumatic controllers located at wellhead, with a number of limitations.

One such limitation is that, for operators to utilize that exemption, the pneumatic controllers must be regularly inspected for leaks using AIMM and AVO. Conservation Groups recognize that seasonal impacts, such as adverse weather, may increase the difficulty of

conducting inspections at remote wellheads but expect that such difficulties can be overcome in almost all cases. The parties continue to discuss the appropriate regulatory language to accommodate these truly rare occurrences while ensuring regular inspections.

Conservation Groups recognize the potential value of allowing operators to inspect exempt wellhead sites using drones equipped with OGI cameras. However, to ensure that such inspections be effective, it is important that any such use is certified by the state or other external authority. The parties continue to discuss the appropriate criteria for such certification.

Another limitation on the exemption for wellhead retrofits related to the availability of grid electricity. When grid electricity is available at these wellhead-only sites, operators should utilize that electricity to replace controllers with electric controllers. If this is not safely feasible, for example for an emergency shutoff device, the exemption may be appropriate. However, other controllers at these sites, such as those used for artificial lift at wellheads, can and should be replaced with electric controllers.⁴⁴ The parties continue to discuss the appropriate limitations.

C. Conservation Groups' Alternate Proposal is Technically and Economically Feasible and Will Reduce VOC, Methane, and HAPs Emissions.

Conservation Groups' alternate proposal is technically and economically feasible and will help to achieve the required greenhouse gas reductions, "minimize" oil and gas emissions, and address ozone nonattainment. The alternate proposal is supported by the written expert testimony of Dr. David McCabe, attached to this prehearing statement, and is accompanied by a statement of basis and purpose, and an economic impact analysis.

In 2015, the Clean Air Task Force worked with Carbon Limits to design a study on the cost-effectiveness of non-emitting alternatives to pneumatic equipment.⁴⁵ Carbon Limits performed a comprehensive literature review and conducted 17 in-depth interviews with technology providers and small and large oil and gas companies, and examined the economics of utilizing non-emitting controllers instead of venting natural gas-driven pneumatic controllers at upstream oil and gas sites, including smaller sites and sites without available electrical power. The study found that reliable, low-cost technologies are available for almost any configuration of oil and gas facilities to replace venting pneumatic equipment with non-emitting options: "[o]verall . . . zero-emission solutions are available today and are cost-effective to implement in nearly every situation."⁴⁶

The Carbon Limits study includes a detailed analysis of the economics of (1) using "instrument air" instead of natural gas to drive pneumatic controllers, and (2) using electronic control systems and electric valve actuators using both grid power and solar-powered systems. The study considers all of the costs of these systems. For example, for electric controllers at sites without electricity available, the study includes installation costs and other outlays as well as the costs of solar panels, batteries, and control panels. Carbon Limits calculated the net cost of both instrument air and electric systems per metric ton of avoided methane pollution, using a net present value formulation.⁴⁷ Carbon Limits found that these technologies "are mature, proven,

⁴⁴ This summary in sections II.A and II.B constitutes a list of issues to be resolved by the Commission pursuant to 5 Colo. Code Regs. § 1001-1:V.E.6.c(iii).

⁴⁵ McCabe Testimony, *supra* n.15, at 7–8.

⁴⁶ *Id.* at 8 (quoting Carbon Limits, *Zero Emission Technologies for Pneumatic Controllers in the USA: Applicability and Cost Effectiveness* (Aug. 1, 2016) (CG_PHS_EX-005.010) [hereinafter "Carbon Limits"]).

⁴⁷ *Id.* at 8–9.

and in relatively wide use, and [they] provide a cost-effective way to eliminate emissions of methane and other pollutants from pneumatic controllers.”⁴⁸

Carbon Limits created a spreadsheet where users can input specific parameters—such as the number of controllers, whether the site is new or existing, and costs of various types of equipment—to calculate the costs at a site.⁴⁹ An operator using either electronic controllers or instrument air to replace traditional gas-driven pneumatic controllers will generally replace all controllers at a site because they will all use certain common equipment, such as solar panels and batteries for off-grid electronic controllers, or air compressors and tanks for instrument air-driven controllers. Accordingly, the cost of the common equipment is a large portion of total system cost, and the overall cost-effectiveness of the system will vary with the number of controllers at a site, in addition to other parameters.⁵⁰

Using the Carbon Limits tool, Dr. David McCabe and Lesley Fleishman from the Clean Air Task Force prepared an EIA for Conservation Groups’ alternate proposal. The EIA also relies on conservative emissions factors for intermittent-bleed controllers (3.5 scfh) and low-bleed controllers (5.1 scfh), together with parameters such as the value of conserved gas and VOC and methane content of gas that are consistent with the Division’s cost analyses.⁵¹ Dr. McCabe’s testimony and the EIA demonstrate that the alternate proposal is technologically and economically feasible and will reduce emissions.

With the flexibility offered by the companywide plan, each operator would be able to take the most cost-effective route to retrofits. Because larger, newer facilities account for a greater percentage of total liquids production, and retrofits are more cost-effective at larger facilities, operators will likely meet the requirements by converting larger facilities. The EIA thus analyzes the costs and emissions reductions of retrofitting all wellpads with six or more wells. The EIA estimates that retrofitting wellpads with six or more wells would eliminate over 3,000 tons of VOC emissions and over 9,500 tons of methane-ethane emissions per year from well production facilities in the NAA, at a cost of \$1,626 per ton of VOC.⁵² In the remainder of the state, retrofitting wells pads with six or more wells would eliminate over 4,200 tons of VOC emissions and over 16,500 tons of methane-ethane emissions per year from well production facilities, at a cost of just \$2,098 per ton of VOC.⁵³ The EIA further includes estimates relating to wellpads with 2–5 wells, because some companies may choose to retrofit smaller wellpads. While we did not include the costs of retrofit at these smaller wellpads in our estimate of the overall cost-effectiveness of the rule, these estimates do show that retrofits of these smaller facilities will also be cost-effective. Additionally, by allowing operators flexibility, the alternate proposal ensures that retrofits will be particularly cost-effective.⁵⁴

The alternate proposal’s requirement to retrofit well production facilities with a newly drilled, refractured, or recompleted well with non-emitting controllers is also cost-effective. The EIA’s analysis of retrofits for well production facilities with two or more wells supports retrofit at the majority of modified sites. However, the EIA also demonstrates that it is cost-effective to require retrofits for modified sites with fewer than 2 wells. When a single-well site is recompleted or refractured, the EIA estimates that the VOC abatement cost for converting the

⁴⁸ *Id.* at 11 (quoting Carbon Limits).

⁴⁹ *Id.* at 9.

⁵⁰ *Id.*

⁵¹ *Id.* at 12.

⁵² CG_ALT_EIA at 4–5, Table 4.

⁵³ *Id.* at 7–8, Table 6.

⁵⁴ McCabe Testimony, *supra* n.15, at 10–11.

site to non-emitting controllers is \$1,168 per ton in the NAA and \$1,716 per ton in the remainder of the state.⁵⁵

Finally, retrofits also make sense for all gathering and boosting compressor stations. At compressor stations, the alternate proposal would eliminate emissions in the NAA at a cost of \$1,904 per ton of VOC and \$615 per ton of methane-ethane.⁵⁶ In the rest of the state, the proposal would eliminate emissions at a cost of \$2,289 per ton of VOC and \$581 per ton of methane-ethane.⁵⁷ Moreover, according to the Pneumatic Controller Task Force field study, as of summer 2018, of the 58 gathering and boosting compressor stations in the NAA, at least 48 had already converted to using instrument air instead of natural gas to drive pneumatic controllers.⁵⁸ This shows that additional conversions are feasible.

All of these costs are within the range of VOC abatement costs for the measures included in the 2014 oil and natural gas hydrocarbon rulemaking.⁵⁹ Accordingly, the Conservation Groups request that the Commission adopt their alternate proposal.

III. List of Witnesses and Written Testimony

Pursuant to 5 Colo. Code Regs. § 1001-1:V(E)(6)(c)(v)–(vi), the Conservation Groups note that they are submitting written testimony from Dr. David McCabe as an attachment to this Prehearing Statement. Dr. McCabe’s testimony addresses the technical and economic feasibility of various technologies that reduce emissions from pneumatic devices.⁶⁰

Several exhibits are listed in and attached to Dr. McCabe’s testimony. Conservation Groups may present this testimony at the hearing.

Conservation Groups may present the following witness at the hearing:

- Dr. David McCabe, who will testify in support of Conservation Groups alternate proposal and address the technical and economic feasibility of expanded use of non-emitting controllers;
- Robin Cooley, who will present facts and legal arguments in support of Conservation Groups’ positions and alternate proposal;
- Alexandra Schluntz, who will present facts and legal arguments in support of Conservation Groups’ positions and alternate proposal;
- Any other witnesses that may be needed for rebuttal or impeachment purposes.

The Conservation Groups request thirty minutes to present testimony on their alternate proposal and cross examine witnesses.

IV. Alternate Proposal and Economic Impact Analysis

Accompanying this Prehearing Statement is the Conservation Groups’ alternate proposal. Pursuant to 5 Colo. Code Regs. § 1001-1:V(E)(6)(c)(vii), the text of the alternate proposal

⁵⁵ CG_ALT_EIA at 8, Table 8.

⁵⁶ CG_ALT_EIA at 2, Table 2.

⁵⁷ *Id.*

⁵⁸ See PCTF Report, *supra* n.31, at 10.

⁵⁹ McCabe Testimony, *supra* n.15, at 11.

⁶⁰ See generally McCabe Testimony, *supra* n.15.

complies with 5 Colo. Code Regs. § 1001-1:V(C)(3)(c). A Statement of Basis and Purpose accompanies the alternate proposal. Pursuant to Colo. Rev. Stat. § 25-7-110.5(5)(b) and 5 Colo. Code Regs. § 1001-1:V(E)(6)(c)(viii), the Statement of Basis and Purpose includes a narrative description of proposed standards that exceed the minimum baseline health protections provided by federal standards. Finally, pursuant to 5 Colo. Code Regs. § 1001-1:V(E)(6)(c)(ix), an Economic Impact Analysis that meets the requirements of Colo. Rev. Stat. §§ 25-7-110.5(4)(a) & (c) accompanies the alternate proposal.

V. List of Exhibits

As required by 5 Colo. Code Regs. § 1001-1:V(E)(6)(c)(iv), Conservation Groups have submitted a Table of Contents of Exhibits accompanying this Prehearing Statement.⁶¹

VI. Conclusion

For the foregoing reasons, the Commission should adopt the Conservation Groups' alternate proposal.

Dated: January 26, 2021

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CERTIFICATE OF SERVICE LIST

I certify that on this 26th day of January, 2020, a copy of the foregoing Prehearing Statement and accompanying documents was filed via electronic mail and served on the parties listed below:

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