July 27, 2022
Regional Air Quality Council
1445 Market Street, Suite 260
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Via Electronic Mail: SIPComments@raqc.org, cdphe.commentsapcd@state.co.us, cdphe.aqcc-comments@state.co.us

Re: Public Comments on the Ozone SIP draft

To the Regional Air Quality Council:

350 Colorado respectfully submits these comments to the Regional Air Quality Council (RAQC), the Air Pollution Control Division (APCD), and the Air Quality Control Commission (AQCC) regarding the July 12 draft of the Ozone State Implementation Plan.

Introduction:

350 Colorado (350CO) is a 501(c)3 nonprofit organization with a mission to work locally toward building a global grassroots movement to solve the climate crisis and accelerate the transition to a sustainable future. We have over 20,000 members statewide working to address the root causes of the climate crisis and to promote equitable and lasting solutions.

Our organization has several interests in the SIP. Ozone precursors are largely emitted by the same sources that emit greenhouse gases. In addition, ozone is a greenhouse gas itself, and worsens climate change. In a vicious cycle, global heating leads to increases in ozone levels. Ozone presents a high health risk to all in the ozone nonattainment area, compounding the pollution-related health impacts which are suffered disproportionately by environmental justice areas. Thousands of our members live in the ozone nonattainment area, experiencing the health impacts of Colorado's dangerously high ozone levels.

Chapter 1 of the SIP includes a summary of the health risks of ozone:

> *Breathing ozone can trigger a variety of health problems including chest pain, coughing, throat irritation, and congestion. People with chronic lung and heart diseases, children, older adults, and even healthy people who are active outdoors can be affected when ozone levels are unhealthy. Ozone can worsen symptoms for those who have pre–existing conditions such as bronchitis, emphysema, asthma,*

chronic obstructive pulmonary disease, and heart disease. Ozone can also reduce lung function and inflame the linings of the lungs, and repeated exposure may permanently scar lung tissue. Ozone exposure can also increase the mortality risk for susceptible individuals, including the elderly and those with pre–existing conditions.

Ozone pollution: Oil and Gas

Oil and Gas operations in Colorado represent the largest source of ozone precursor emissions, at 37% of total VOCs emitted and 26% of NOx. (SIP § 3.2, p. 56, Appendix 3-A). Oil and Gas emit more VOCs than on-road sources, off-road sources, and non-oil and gas point sources combined, and 1.33 times more than all non-oil and gas area sources.

As the primary source of ozone precursors in Colorado (SIP data, p.), Oil and Gas operations bear the largest responsibility for the health impacts of ozone. Fann et al. look at effects on mortality from ozone, specific to oil and gas. They predict with 95% confidence that by 2025, the US will see an annual average of 970 ozone-related excess deaths, 1000 heart- and lung-related hospital admissions, 3600 emergency room visits, 100,000 lost work days, and more than a million cases of exacerbated respiratory issues.[1] They find that Colorado is one of the states that will suffer the largest share of these and predict that, in Colorado in 2025, 18-49 (or an average of 34) premature deaths will be caused by ozone directly attributable to the oil and natural gas sector.[2]

Oil and Gas in the SIP

Despite the outsized responsibility of oil and gas operations for ozone pollution in the nonattainment area, the SIP does not include any reductions in emissions of VOCs from oil and gas, and in fact the NOx emissions will increase by 2026. In the SIP 2020 (baseline) inventory, oil and gas in the 2008 nonattainment area contributes 109.4 tons per day (TPD) of VOC and 36.7 TPD of NOx. (SIP § 3.2, p. 56, Appendix 3-A). In the 2026 inventory, it is expected to emit 109.5 tpd of VOCs and 53.2 tpd of NOx (SIP Table 28). In their plan to *reduce* ozone precursor emissions in Colorado by 15%, the SIP allows oil and gas to *increase* their combined emissions of VOCs and NOx by 11%.

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[1] N. Fann et al. 2018. "Assessing Human Health PM2.5 and Ozone Impacts from U.S. Oil and Natural Gas Sector Emissions in 2025," *Environmental Science & Technology*, 52 no. 15: 8095–8103, https://doi.org/10.1021/acs.est.8b02050

[2] Same as above, see p. 8100.

Oil and Gas Regulations for the SIP are itemized in section 4.3.5. Many of these measures were implemented in 2017, with already a chance to prove their effectiveness. The fact that 2020 and 2021 show large increases in ozone indicates that these measures are insufficient. The increase in total emissions from oil and gas referenced above indicate that all of the measures for oil and gas included in the SIP do nothing to curtail oil and gas emissions, although oil and gas operations are the largest source of ozone precursors, by far.

Many of the inventory figures for oil and gas are based on assumptions provided by oil and gas operators.

- Future production figures are based on predictions provided by the 9 largest operators in the nonattainment area. Production is assumed to increase 27% per year until 2023 and then stay the same after that (SIP §4.4.3). This does not correlate to the assumptions about production which the 2021 Greenhouse Gas Inventory Report is based on, in which production increases each year through and beyond 2026. (https://drive.google.com/file/d/1Q0C3aRnuxXX2UHghM7F2E0NDy0bZZNhp/view, see "oil and gas" tab.)
- "All future growth in oil and gas development is assumed to incorporate horizontal wells in combination with either tankless facilities or 2- and 3-stages of separation." This assumption is based on information from the operators, and underlies the SIP prediction that emissions from condensate tanks will decrease while production increases, despite the fact that the rise in horizontal drilling after 2012 led to a "large increase in the number of condensate storage tanks." (SIP § 2.1.2).
- "…the number of active wells is expected to stay about constant due to a higher production capacity of horizontal wells and a decline of older low production vertical wells." Even if this assumption is correct, it does not take into account the fact that inactive yet unplugged wells will also emit.

The SIP inventory and SIP regulations should be based on more complete and verified data.

At a time when scientific bodies of the UN and the International Energy Agency are calling for an immediate halt to new oil and gas development in order to keep global warming under 1.5 degrees Celsius,[3] Colorado is allowing an increase of production of oil and gas. When we have had ozone levels above EPA NAAQS standards since 2008, Colorado is allowing the largest source of ozone precursor emissions to continue to increase emissions under the SIP. This SIP does not hold oil and gas development accountable for its contribution to our ozone pollution, and the lack of reduction in oil and gas emissions of ozone precursors essentially amounts to a subsidy.

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[3] See IEA (2022), *Net Zero by 2050: a Roadmap for the Global Energy Sector, a summary for policy makers*, p. 11. https://iea.blob.core.windows.net/assets/7ebafc81-74ed-412b-9c60-5cc32c8396e4/NetZeroby2050-ARoadmapfortheGlobalEnergySector-SummaryforPolicyMakers_CORR.pdf, and UNEP. 2021. *Production Gap Report*. https://productiongap.org/2021report/

Recommendations

350 Colorado recommends that the SIP create strengthened regulations for oil and gas. Oil and gas should achieve at least the 15% of reductions that the SIP is required to achieve overall. Our recommendation is that the RAQC develop more robust requirements for oil and gas, including but not limited to the following:

- The APCD should be directed to include summer VOCs in its minor stationary source modeling, and should be directed to consider the aggregate effect of multiple wells in an area.
- The SIP should require the APCD to make rules which will mandate tankless facilities for new wells, and lower the threshold for individual condensate tanks.
- Rules should be required to prohibit high-emitting oil and gas pre-production and production activities in nonattainment areas during the summer months.
- A halt in permitting of new oil and gas facilities should be instigated.

In addition we recommend more stringent measures for other sectors:

- The light duty vehicle Inspection and Maintenance Program: The model year exception was changed from 4 to 7 years in 2012. The 4 year threshold should be reinstated, and the testing frequency should be 1 year for all light-duty vehicles.
- Regulation 7, Part B, Section VII requires Stage I vapor controls on terminals, bulk stations and gasoline dispensing facilities (service stations) that exceed the permit threshold of two tons per year of uncontrolled actual VOC emissions in the DM/NF. 350 CO recommends eliminating a threshold and mandating these Stage I vapor controls on all terminals, bulk stations and service stations.

Conclusion

Thank you for the opportunity to comment on this draft of the SIP. We urge you to develop it further, and increase the recommendations for reductions from the oil and gas sector. Please do not hesitate to contact us for any clarifications or to discuss our recommendations further.

Submitted this 27th day of July, 2022.

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