BEFORE THE AIR QUALITY CONTROL COMMISSION
STATE OF COLORADO

IN THE MATTER OF PROPOSED REVISIONS TO THE OZONE STATE IMPLEMENTATION PLANS;
REGULATION NUMBER 3; REGULATION NUMBER 7; REGULATION NUMBER 21; COMMON
PROVISIONS; AIR QUALITY STANDARDS, DESIGNATIONS AND EMISSION BUDGETS
DECEMBER 13-16, 2022, HEARING.

NOTICE OF TEMPORARY WITHDRAWAL OF LIMITED PARTS OF THE
SEVERE STATE IMPLEMENTATION PLAN

The Colorado Department of Public Health and Environment ("CDPHE"), Air
Pollution Control Division ("Division") submits this Notice of Temporary Withdrawal of
Limited Parts of the Severe State Implementation Plan in this matter to the Air Quality
Control Commission ("AQCC" or the "Commission"). Specifically, the Division is
temporarily withdrawing the following parts of the Severe State Implementation Plan
("SIP"): Chapters 3, 4, 5 and 11 and the corresponding proposed changes to the Air Quality
Standards, Designations and Emissions Budgets as they relate to the 2026 budgets. The
remaining parts of the Severe SIP and corresponding revisions to the regulations will go
forward, as well as the entirety of the Moderate SIP. This includes all proposed changes
to Regulation Numbers 3, 7, 21, the Common Provisions, and the Air Quality Standards,
Designations and Emission Budgets as they relate to the 2023 budgets.

I. BACKGROUND

A. The Reason for the Change

As described in more detail below, the Division recently discovered a calculation
error regarding emissions associated with oil and gas pre-production activities. The
corrected calculation leads to a significant increase in NOx emissions from pre-production
activities, which will require updates to certain emissions inventories.

B. SIP Emissions Inventories

The Division developed two SIP revisions in accordance with the requirements of
the federal Clean Air Act ("CAA") and guidance from the Environmental Protection Agency
(“EPA”). One SIP was developed in response to the Denver Metro/North Front Range’s
(“DM/NFR”) redesignation to Moderate under 2015 8-hour ozone National Ambient Air
Quality Standard (“NAAQS”) (“2015 Ozone NAAQS”) and the other was SIP was developed
in response to the DM/NFR’s redesignation to Severe under the 2008 8-hour ozone NAAQS
(“2008 Ozone NAAQS”). These SIPs are part of an ongoing rulemaking action before the
Commission that is scheduled for hearing in December 2022.
Included in these SIPs are emissions inventories that account for emissions of two ozone precursors - volatile organic compounds ("VOCs") and nitrogen oxides ("NOx"). These emissions inventories are primarily used in two demonstrations included in the SIP:

1. **Rate of Progress (ROP)/Reasonable Further Progress (RFP) Demonstrations**: Nonattainment areas are required to show they are making progress towards attaining the ozone NAAQS by showing they are continuously reducing emissions of ozone precursors by a certain amount over set periods of time as stipulated by the CAA.

2. **Attainment Demonstrations**: Nonattainment areas are required to conduct photochemical modeling that shows that the area will be in compliance with the applicable ozone NAAQS by the attainment date.

**C. Calculation of Pre-Production Emissions in the Emissions Inventories**

The SIP emissions inventories calculate emissions from oil and gas pre-production operations, which include emissions associated with drilling, fracking, well venting, and mud degassing activities. These emissions are calculated utilizing emission factors derived from reported industry data from 2017. An emission factor was calculated for each activity by separately aggregating reported emissions for VOC and NOx. The total emissions for each pollutant and activity were then divided by the number of wells to develop the VOC and NOx specific emission factors associated with each activity on a ton/well basis. This factor was then used to calculate total pre-production emissions for the applicable emissions inventory years.

When the emission factors were initially calculated, however, they were erroneously divided by the total number of new wells drilled in 2017 rather than being divided by the total number of wells associated with the reported emissions. This generated artificially low emission factors.

The artificially low nature of the emission factors came to the Division’s attention recently when SIP reported pre-production emissions were revisited in light of information provided in Comprehensive Area Plans ("CAPs") submitted to the Colorado Oil and Gas Conservation Commission ("COGCC"). Industry estimates for pre-production NOx emissions presented in the CAPs were considerably higher than those in the initial SIP calculations. In looking into the discrepancy between the industry projections and SIP projections the artificially low nature of the emission factor was identified. A corrected emission factor was immediately developed, and new emissions were calculated. Table 1 below presents the initial pre-production emissions and the corrected pre-production emissions. The correction resulted in nearly a doubling of NOx emissions from pre-production relative to what is currently in the inventory in the SIP proposal before the Commission.
II. IMPLICATIONS OF THE CHANGE IN PRE-PRODUCTION EMISSIONS ON PROPOSED SIP REVISIONS

Given the substantive nature of the increase associated with the correction to pre-production emission calculations, the Division assessed the implications to the ROP/RFP and Attainment Demonstrations included in both the Moderate and Severe SIP.

A. No Change to Air Quality Planning

1. ROP/RFP Demonstrations

The change in emissions has a negligible impact on the ROP/RFP demonstrations presented included in each SIP revision. The ROP/RFP demonstrations rely solely on reductions achieved in VOC emissions, and the change in VOC emissions associated with the corrected pre-production emissions is minimal when compared to total emissions of VOCs (Table 2). With correction Colorado still meets the ROP/RFP requirements in the CAA.

<table>
<thead>
<tr>
<th>Pre-Production Emissions</th>
<th>2017</th>
<th>2023/2026</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>VOC</td>
<td>NOx</td>
</tr>
<tr>
<td>Presented in SIP (total)</td>
<td>21.31</td>
<td>7.62</td>
</tr>
<tr>
<td>Drilling</td>
<td>9.41</td>
<td>0.89</td>
</tr>
<tr>
<td>Mudding</td>
<td>--</td>
<td>0.97</td>
</tr>
<tr>
<td>Fracking</td>
<td>11.78</td>
<td>2.62</td>
</tr>
<tr>
<td>Venting</td>
<td>0.11</td>
<td>3.13</td>
</tr>
<tr>
<td>Updated PreProduction</td>
<td>41.72</td>
<td>8.64</td>
</tr>
<tr>
<td>Drilling</td>
<td>12.36</td>
<td>1.20</td>
</tr>
<tr>
<td>Mudding</td>
<td>--</td>
<td>0.97</td>
</tr>
<tr>
<td>Fracking</td>
<td>29.16</td>
<td>4.75</td>
</tr>
<tr>
<td>Venting</td>
<td>0.19</td>
<td>1.72</td>
</tr>
<tr>
<td>ΔPreProduction (emissions)</td>
<td>20.41</td>
<td>1.03</td>
</tr>
<tr>
<td>ΔPreProduction (%)</td>
<td>96%</td>
<td>13%</td>
</tr>
</tbody>
</table>

Table 1. Comparison of pre-production emissions presented in the SIPs compared to updated pre-production emissions

<table>
<thead>
<tr>
<th>Total Emissions</th>
<th>2017</th>
<th>2023</th>
<th>2026</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>VOC</td>
<td>NOx</td>
<td>VOC</td>
</tr>
<tr>
<td>Total Presented in SIP</td>
<td>179.58</td>
<td>355.65</td>
<td>143.22</td>
</tr>
<tr>
<td>Total with Updated PreProduction</td>
<td>199.99</td>
<td>356.67</td>
<td>159.20</td>
</tr>
<tr>
<td>Δemissions</td>
<td>20.41</td>
<td>1.03</td>
<td>15.98</td>
</tr>
<tr>
<td>Δ%</td>
<td>11%</td>
<td>0.3%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Table 2. Comparison of total DM/NFR emissions presented in the SIPs compared to total DM/NFR emissions including updated pre-production emissions
2. **Attainment Demonstrations**

   Based on existing sensitivity analyses and the relative nature of modeling results which are utilized in attainment demonstrations, the Division believes the inclusion of these pre-production emissions in modeling will not change the overall conclusions of the current attainment demonstration modeling. That is, the attainment demonstration completed for the 2015 Ozone NAAQS SIP will continue not to demonstrate attainment in 2023, and the attainment demonstration completed for the 2008 Ozone NAAQS SIP will not change so dramatically as to no longer demonstrate attainment in 2026. Nevertheless, the changes in emissions are substantive enough that the Division believes rerunning the Severe attainment demonstration modeling with the corrected pre-production emissions would be prudent to ensure the modeling continues to demonstrate attainment. Given that the current attainment demonstration completed for the 2015 Ozone NAAQS SIP does not demonstrate attainment and updating the pre-production emissions would not result in the modeling demonstrating attainment, the Division believes the best use of its limited resources is to focus on rerunning the modeling for the Severe SIP and submitting the Moderate attainment demonstration in its current form to EPA. As addressed in the Division’s Prehearing Statement, EPA has made it clear that an attainment demonstration that does not demonstrate attainment is still a required Moderate SIP element.

   **III. STEPS TO BE TAKEN FOR THE DECEMBER 2022 HEARING**

   **A. Revisions to the Emissions Statements for the Marginal SIP under the 2015 Ozone NAAQS**

   EPA has requested that Colorado make updates to its emissions statements for the Marginal SIP under the 2015 Ozone NAAQS. These changes must be made expeditiously to be responsive to the November 30th, 2021 designation of northern Weld County as nonattainment.\(^1\) Therefore, as part of the December 2022 rulemaking, the Division plans to update these emissions statements and move forward with presenting these updates to the Commission. The Division will further discuss and outline these changes in its Rebuttal Statement.

   **B. Revisions to the Moderate SIP Under the 2015 Ozone NAAQS**

   Under the 2015 Ozone NAAQS reclassification, the deadline to submit the Moderate SIP revisions, implement RACT, and implement any controls determined necessary for meeting CAA requirements is January 1, 2023.\(^2\) Because of this deadline and the fact the revised pre-production emissions will not change the results of the Moderate attainment demonstration, the Division plans to move forward with the Moderate SIP as is. However, the Division does plan to update the inventories presented in chapters 3 and 4 of the Moderate SIP, the Motor Vehicle Emission Budgets presented in chapter 11 of the Moderate SIP, as well as the corresponding proposed changes to the Air Quality Standards,

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Designations and Emission Budgets as they relate to the 2023 budgets. The Division will further discuss and outline these changes in its Rebuttal Statement.

C. Revisions to the Severe SIP under the 2008 Ozone NAAQS

Under the 2008 Ozone NAAQS reclassification, Colorado has until approximately May 2024 to submit the Severe SIP revisions, implement RACT, and implement any controls determined necessary for meeting the CAA requirements. Therefore, to remain proactive and to reduce the work that must be done in 2023 (as described below), the Division plans to move forward with the Severe SIP but only temporarily withdraw those limited elements related to the emission inventories that will need to be updated based on the revised pre-production emission numbers. This is limited to the temporary withdrawal of Chapters 3, 4, 5 and 11 of the Severe SIP and the corresponding proposed changes to the Air Quality Standards, Designations and Emission Budgets as they relate to the 2026 budgets. The Division will further discuss and outline these changes in its Rebuttal Statement.

D. Outreach to Parties and Stakeholders

The Division has reached out to all Parties to make them aware of this change. The Division is also open to meeting with any parties and/or stakeholders who have questions or concerns about this change.

IV. THE DIVISION’S PATH FORWARD IN 2023

As discussed above, in 2023 the Division will rerun the modeling for the Severe SIP, with updated emissions information, in order to ensure the modeling continues to demonstrate attainment with the 2008 Ozone NAAQS. Furthermore, the Division will update Chapters 3, 4, 5 and 11 of the Severe SIP and the 2026 motor vehicle emissions budgets based on the updated data. The Division will then again request the Commission conduct a rulemaking in 2023 to consider these revised portions of the Severe SIP and associated regulation.

If adopted by the Commission, the Division plans to submit both the Moderate SIP and Severe SIP elements, excluding those being temporarily withheld, to the legislature in January 2023 for approval. However, in order to avoid a potential finding of incompleteness of its Severe SIP, the Division does not plan to submit its Severe SIP to EPA until 2024 when it contains all of the required elements.

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Respectfully submitted this 11th day of November 2022.

Air Pollution Control Division

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Notice of Temporary Withdrawal of Limited Parts of the Severe State Implementation Plan was served on the Parties listed below on this 11th day of November 2022.

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