Testimony of

Chandra Rosenthal, Rocky Mountain PEER Director

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Members of the committee, thank you for your work and thank you for the opportunity.

My name is Chandra Rosenthal and I am the Rocky Mountain Director of Public Employees for Environmental Responsibility- PEER.

PEER is a nonprofit organization based in Washington DC. We work with public servants like you—federal and state public employees –people who work to protect the environment and advocate for strong environmental laws. We work with employees who are working in agencies and trying to make a difference. We have members throughout Colorado.

I was not expecting to be here today. The committee requested experts from inside the agency , the whistleblowers who put their careers on the line, who came forward to publicly reveal the ongoing violations of the CAA in the APCD. They chose not to be here. After reviewing their planned presentation with CDPHE, one whistleblower was told that there was information that could not be shared with the committee.

Testimony -where it will be linked, Troutman fact sheet, some PSD info, response to the report CDPHE prepared for the legislature on cumulative impacts in response to Gov. Polis 7/22/23 request, 11/7/23 complaint to EPA requesting action on CDPHEs response to the OIG complaint

RECOMMENDATIONS FOR LEGISLATION
These recommendations are from the experts within the agency including the whistleblower who could not be here today.

1. Going forward, for future minor source permits, CDPHE can be required to prioritize enforcement of the 1hr NO2 NAAQS in certain areas. The state says that it has addressed the issues raised by the whistleblowers because it is using a new permitting process. But it is flawed. In fact the three whistleblowers who were all of the modelers on staff at CDPHE at the time, were prevented from being part of the creation of the new permitting modeling process

   CDPHE has to consider the existence of nearby sources <u>when deciding</u> if modeling is needed—regardless of how small the emission increase is, and this is not yet part of the new permitting process. We recommend that the legislature require modeling as a mandatory part of the process in at least the ozone NAA and DI communities.

2. For existing permitted sources, CDPHE can be required to report all modeled 1 hr NO2 NAAQS detected during minor source permitting to the public and EPA.
   If there are modeled violations, CDPHE should place EPA certified NO2 monitors there. CDPHE can, as some other states do, create source-specific SIPs with large facilities to address existing 1 hr NO2 NAAQS violations. (Suncor)

3. Fund a PSD increment study (Prevention of Significant Deterioration (PSD) increment study for the ozone NAA by an outside independent group. There is evidence that the allowable PSD Increments prescribed by the CAA have already been exceeded. These standards were set in place to prevent significant deterioration of air quality. CDPHE has failed to evaluate these standards in the last 20 years. This would include evaluating PSD Increments for NO2, SO2, PM 10 and PM 2.5.

We recommend that the analysis to be performed inside the ozone NAA because that area is very crowded with thousands of permits issued over the last 10-12 years without any NAAQS assessment. Based on the results CDPHE can be required to come up with a plan that includes deadlines, to fix all the permits of the sources identified as causing modeled NAAQS violations, and also with a plan to address PSD Increment violations.

4. Funding: the state can hire more air scientists, enforce more permits, and it also needs to change the funding mechanism for permitting. Right now, the polluters pay for the time that the state spends

assessing the permit after the permit is granted. To ensure that CDPHE doesn't feel pressured to issue every single permit at the expense of air quality, in order to keep the permitting fees revenue stream flowing, the fees must be paid whether or not the permit is granted. The current system creates a negative incentive to reject a permit.

CULTURE WITHIN THE APCD

Colorado has a long history of air scientists and policy makers who believe that the air permitting program fails to comply with the Clean Air Act. Many of the experts have been frustrated by the fact that their expertise was ignored and have left the agency. This has led to a high amount of turnover at CDPHE. The state has been unable to keep experts in the modeling unit. Every time the state loses an experienced expert, it is like jenga—we lose a piece of the foundation and are left with a teetering tower. The air division should be a place where people are proud to work.

CHRONOLOGY

In 2010, EPA tightened the health-base standard for NO2 as part of the Clean Air Act. At that time Colorado was prioritizing growth, so the state supporting the oil and gas industry, set up an illegal process rubberstamping permits. At PEER we began to hear from the state Air Pollution Control Division employees.

The air scientists were concerned about the state's air permitting program failing to comply with the federal requirements to predetermine whether a project will comply with the NAAQS. See our recent amicus brief filed in support of the Center for BD lawsuit that challeges the state's general permit program. The amicus chronicles PEER's work with air Division employees through the years.

The experts within the agency spoke up, they were ignored by management and they left. They were followed by another set of experts who had the same experience, and another set of experts and another set of experts. One employee told me that situation in Colorado is comparable to the Flint Water Crisis in Michigan. They were concerned that they could be held criminally liable in their part in permitting pollution.

I am going to share with you specifics:

In 2011 an air scientist from the Air Division came to PEER because they saw the illegal permitting and were frustrated. We worked with the

employee for over a year. This employee left the agency and is now an air scientist for the federal government.

In 2012 another Division employee came to PEER. We filed a complaint with the EPA. This employee left and now works for the federal government.

In 2012 three air scientists, Doris Jung, Chuck Machovec, and another employee were ignored by management when they repeatedly stated that an air permit was issued illegally. Two of them left CPDHE.

From 2016-2018 another air scientist who worked at the modeling division told PEER that the state was failing to comply with the CAA and left the agency.
In 2018 another state employee came to PEER. They attributed the increasing ozone pollution to the failures in the permitting division. The employee left.
This long history of CDPHE ignoring its employees is why we need the legislature to step in.

On Monday on March 15, 2021, CDPHE banned the air quality modeling staff from conducting any review of NAAQS compliance whatsoever for 1 hour NO_2 and Sulfur Dioxide (SO_2), 3-hour standards for SO_2, and daily standards for PM2.5. The entire air modeling staff, DeVondria Reynolds, Bradley Rink and Rosendo Majano, publicly requested federal oversight.

These three brave whistleblowers-- air scientists –at great professional risk, publicly filed a complaint with the EPA Office of Inspector General. One thing that I would encourage every one to do is to see the slide show that the whistleblowers prepared for a meeting with EPA Region 8 staff during the complaint investigation. Linked here. https://peer.org/colorado-permitting-presentation-pdf/

SUMMARY OF COMPLAINT
The scientists raised three main issues:

1. The state is failing to verify for NAAQS compliance when issuing permits.

The state issues thousands of air permits a year --See Colorado's tracker. Of the 12,000 air permits that were issued between June 2016 through June 2021, only 42 had modeling to demonstrate compliance. The rest

were issued without any assessment of their impacts on air quality. What is the result? Unfettered permitting has led to severe ozone nonattainment.

There are areas in Colorado that are saturated with emissions. It is probable that these areas cannot absorb more emissions without the air quality suffering significant deterioration. We have to accept that inside the ozone NAA, when considering a permit, the state will have to look at the surrounding sources, and their impacts, and permits have to be denied.

2. Industry emitting large sources of pollution break down their applications into smaller units to avoid modeling.

The whistleblowers revealed that it is common for oil and gas facilities to file for multiple permits for the same facility on the same day. By breaking the facility down into smaller pieces, the oil company will avoid any sort of cumulative impact analysis. This is true for the one of the largest open pit gold mines in the world- the Cripple Creek and Victor Newmont Mine. This is true for the Suncor facility. See slide 12 & 13 for examples. We need to ensure that this is no longer an option and require the state to truthful analysis of facilities.

3. Colorado has to address NOX pollution and PM.

NO2 is a precursor to ozone and the state is not focused on controlling it. There is only 1 official NO2 monitor in Weld County but based on modeling results over the years, there are signs that multiple areas in Weld County may be in non-attainment for the 1-hr NO2 NAAQS. The situation is contributing to the ozone situation.
There are also modeling results pointing to areas in Weld Country that could be in non-attainment with the 24 hr PM 2.5 NAAQS.

The air scientists submitted 11 permits to EPA as examples of how the state's implementation of the air program is failing.

EPA RESPONSE

Six months later, in July 2022, EPA agreed with the whistleblowers. EPA found that the state air permitting program does not have a modeling component that complies with the requirements of the Clean Air Act.

WHERE ARE WE NOW?

In its' report EPA made very specific recommendations to the state.[1] But in the past year and half the state has not complied. Most recently in September—more than two years after the whistleblowers filed the complaint--CDPHE gave EPA an update- an Interim Report explaining what they had done. Yesterday we requested that EPA step in again and request that CDPHE comply. There are 5 issues that we point out.

1. 11 permits

EPA required CDPHE to redo the 11 permits but it has not completed the task. EPA stated in the July 2002 report, "For the 11 permit records identified in the complaint, amend permit actions as appropriate by conducting refined modeling, incorporating additional/revised permit

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[1] EPA Report July 2022 Recommendations:

To address these concerns, we recommend that CDPHE consider these measures:

1. Ensure that all future Minor NSR permit records are complete and include sufficient documentation to support permit conditions and contain analyses that demonstrate that the permit conditions will not cause NAAQS violations. As needed, undertake additional qualitative or quantitative air quality analyses to demonstrate that the permit conditions comply with the NAAQS and include these analyses in the permit record.
2. For the 11 permit records identified in the complaint, amend permit actions as appropriate by conducting refined modeling, incorporating additional/revised permit conditions, and/or potentially including post construction ambient air monitoring. For the Cripple Creek and Victor Gold Mine, this would also include providing an explanation demonstrating that the various projects were not under aggregated when determining the projects qualified for Minor NSR permits. In light of the high level of public interest on these issues, the EPA notes that any revisions to these permits, including the permit record, would benefit from public notice and comment, even if state rules would not so require.
3. Maintain complete public records for all NSR permits. Records should be retained for 10 years after the permit expires, is terminated, or withdrawn, or longer if required under state law.
4. Improve communication and coordination among the APCD groups that work on NSR permits.
5. Ensure that complex and multi-year projects are covered under the proper major or minor source program permit requirements based on appropriate aggregation considerations and have adequate air quality impact analyses (AQIAs), and that any decisions to permit individual units are justified and adequately documented in the permit records.
6. During quarterly meetings between APCD and EPA Region 8 permitting managers, provide status reports on newly issued Minor NSR permits that describe the AQIAs and permit condition determinations.

conditions, and/or potentially including post construction ambient air monitoring."

Despite being aware of these issues since the 2021 OIG report, CDPHE has failed to provide a definitive timeline for resolving these permits. In our conversation in the EPA/CDPHE/PEER meeting of September 25, 2023, CDPHE stated that they do not have a timeline to resolve these permits.

2. Transparency

What information is CDPHE hiding from you? The whistleblower is not testifying today because he was told that his presentation had non-public information in it that he was not allowed to make public.

In direct contradiction to EPA, for the 11 permits CDPHE is reopening, CDPHE did not make their new modeling documents available to the public or put them out for notice and comment. In a September meeting with EPA/CDPHE/PEER when PEER requested copies of the new modeling, we were told that wasn't possible.

3. Ignoring the 1-hr NO2 standard

There is evidence that CDPHE continues to circumvent the I hr NO2 NAAQS when issuing permits. This is done by ignoring the existence of nearby facilities and their cumulative impact when deciding if a modeling analysis is warranted.

CDPHE only looks at the NOX emissions increase of the permitted facility in isolation and compares it to a modeling emissions rate. In a complex, multi-source scenario like Weld County, the only way to verify if a small increase in emissions adds to the cumulative impact, is through modeling. By determining that modeling is not needed based on the emissions increase alone, CDPHE is able to circumvent the NAAQS. This continues and the ozone problem is worsening.

4. Ignoring PM

In the analysis of the 11 permits, CDPHE failed to address the Particulate Matter NAAQS, even though all of the NAAQS (including PM) were explicitly the subject of the OIG complaint. The majority of the 11 examples are asphalt plants and/or mining operations, all of which have a significant amount of fugitive PM emissions. That is something that would be clear to any CDPHE Air Division expert simply because of the nature of the industrial processes that take place at those types of facilities.

5. Many, many more illegal permits

The 11 permits that the air scientists brought forward were intended to be examples of the problem, highlighting systemic flaws in the agency's approach to minor source permitting and compliance with NAAQS. There were thousands of permits issued with the same process.

CDPHE continues to say that it has no intention of revisiting those permits.

RECAP OF RECOMMENDATIONS FOR LEGISLATIVE ACTION

1. For future minor source permits, require that CDPHE prioritize enforcement of the 1hr NO2 NAAQS in certain areas. We recommend that the legislature require modeling as a mandatory part of the process in at least the ozone NAA and DI communities.

2. Public notice of all modeled 1 hr NO2 NAAQS violations, NO2 monitors, source-specific SIPs to bring large facilities into compliance.

3. Fund a PSD increment study (Prevention of Significant Deterioration (PSD) increment study for the ozone NAA. Then CDPHE can be required to come up with a plan that includes deadlines to address PSD Increment violations.

4. Funding: fix the funding mechanism for state employee time.

Thank you to this committee for your work. I am hopeful that Colorado will address the decade-long concerns of our state experts and protect the environment and public health.

Please feel free to reach out with any questions and I am happy to provide any further documentation.

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Troutman Report Fact Sheet

Background

On September 24, 2021, Troutman Pepper Hamilton Sanders LLP, acting as Special Assistant Attorneys General for the State of Colorado issued a

public report[2] of its investigation into Colorado Department of Public Health & Environment (CDPHE)'s Air Pollution Control Division (APCD) Modeling and Emissions Inventory Unit (MEIU). That report looked into charges leveled on March 30th by CDPHE's entire air modeling staff to the EPA Office of Inspector General that the agency had directed them to issue illegal permits, ignore violations, and refrain from verifying pollution emissions in violation of the Clean Air Act. The air modelers allege that APCD and CDPHE had a decade-long policy of not predicting the impacts of new industrial facilities on air quality through modeling short term emissions of Nitrogen Dioxide (NO_2), Sulfur Dioxide (SO_2) and particulate matter ($PM_{2.5}$ or PM_{10}).

While those charges were directed to the EPA Office of Inspector General, the Colorado Attorney General nonetheless opened the Troutman probe.

Summary

The Troutman Report found the state's environmental agency improperly issued air pollution permits that exacerbated air quality violations. The Report stated that CDPHE lacks a "well supported policy for ensuring minor source permits would not exceed" national air quality standards, and that CDPHE issued permits with unaddressed [air pollution] exceedances…" The report concluded that "erroneous" actions by CDPHE managers were based upon "lack of understanding" rather than bad intent.

Though the APCD has been working on new modeling guidelines for years, the agency appears to have renewed this effort by convening a panel of stakeholders to produce recommendations. It is notable that despite their requests, none of the state air modelers were included on the panel.

I. Findings

A. While the Troutman report found that deficiencies identified by the air modelers were not "intentional" the report nonetheless confirmed a number of problems, including:

1. The APCD is obligated to prevent NAAQS exceedances.

[2] Available at: https://coag.gov/app/uploads/2021/09/CDOL-Report-210922.pdf

On six occasions the Troutman Report repeats that the disclosure, "[i]n short, CDPHE is required to verify through air quality modeling that a new major or minor stationary source, or a modification to an existing source, will not cause or contribute to a NAAQS exceedance."[3]

The Troutman Report states definitively:

> APCD has a duty to prevent NAAQS exceedances by any source, whether major or minor, even though it has discretion in deciding how best to satisfy that duty for minor sources.
> Modeling is not required in all cases; but, in the absence of modeling, APCD must still satisfy its duty to ensure compliance with the NAAQS in some other way.[4]

2. There is value in accurate modeling prior to issuing air permits.

Modeling allows CDPHE to determine whether a project's design might violate the NAAQS and compel sources to modify their proposed project before construction to avoid those violations. Modeling can be the primary means of controlling what is allowed to be built and operated in Colorado.

The Troutman report states that "Modeling is the only means of quantitatively predicting the potential impact of a new source or project prior to construction, since measuring the impact of a source or project not yet constructed is impossible."[5]

3. Monitoring is not a substitute for modeling.

First, monitoring is not a legally acceptable method to verify a NAAQS exceedance from an individual source. EPA Guidance, Appendix W states, *"...air quality monitoring data alone will normally not be acceptable as the sole basis for demonstrating compliance with the NAAQS..."*[6]

Second, Colorado Regulation 3 requires:

> *"The Division shall grant the permit if it finds that: [. . .] (c) The proposed source or activity will not cause an exceedance of any National Ambient Air Quality Standards; (d) The source or activity will*

[3] Troutman Report at 4, 21, 23, 24 (two instances), 25
[4] Id. at 26.
[5] Id. at 8; *see also* id., at 12, 25-27.
[6] 40 CFR 511, Appendix W, Section 9.2.4

meet any applicable ambient air quality standards and all applicable regulations."[7]

This language indicates that CDPHE must make a determination of NAAQS compliance prior to issuing the permit, and that is simply not possible with monitoring. Issuing the permit and then placing a monitor is illegal.

Third, any monitoring conducted with instruments and quality assurance protocols that are not codified in federal regulations and reported to EPA are ineffective controls in the event of a NAAQS exceedance. The facility will already have their permit and CDPHE may at that point claim that it does not have the authority to revoke it or modify it to force the company to address the exceedance.[8]

Fourth, in a very crowded area with multiple sources it is impossible to determine which facility is culpable for a monitored NAAQS violation. And if the source cannot be determined, CDPHE is simply unable to address the NAAQS violation.

B. Currently there is EPA Guidance and Colorado Guidance on how to model and it sets a standard that protects the NAAQS

1. Appendix W

The Troutman report states, "To provide consistent guidance on the use of air quality models, EPA developed a “Guideline on Air Quality Models,” which EPA codified in 1993 as Appendix W to 40 C.F.R. Part 51.- Appendix W." [9] Further the Report says very clearly that "In codifying Appendix W, EPA made clear that its modeling guidelines are relevant to both major sources subject to NSR and minor sources subject to permitting programs established in a SIP."[10]

Thus, Appendix W provides ample guidance on air quality modeling applicable for both major and minor sources.

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[7] Colorado Regulation 3 Part B § III.D.1

[8] The EPA OIG complaint lays out examples of this situation. There is a facility with monitored exceedances of PM10 and 1- hr NO2 NAAQS of more than three times the standard and yet CDPHE hasn't taken any action to address the issue.

[9] Troutman at 8.

[10] Id. at 12.

2. Colorado Modeling Guideline

The Colorado Modeling Guideline for Air Quality Permits provides extensive modeling guidance for both major and minor sources.[11] As explained by the Troutman report the Guideline is very comprehensive document developed over a long period of time, through a formal deliberative and public process, presented and considered by the AQCC, and it was based on a rigorous scientific analysis of dozens of hypothetical modeling runs with varying assumptions that differentiated between the different NAAQS as they were adopted over time.[12]

The Guideline, in effect from the time of Memo 10-01's issuance, states that sources with a potential to emit greater than 0.46 pounds per hour of NO_2 or SO_2 could cause or contribute to a violation of the NAAQS. **The Troutman Report states that these thresholds "were well-justified" despite their implication that any source emitting more than 2 tpy of NO_2 or SO_2 may require modeling**.[13]

In fact, the Troutman Report states that Memo 10-01 was in "direct conflict" with the analysis because it found that sources emitting fewer than 40 tpy of the relevant pollutants could and did cause or contribute to violations of the NAAQS.[14]

C. For 10 years the APCD erroneously relied upon Memo 10-01 to avoid modeling.

The Troutman report concludes that Memo 10-01 had no basis in law, its factual assumption that sources emitting fewer than 40 tpy of a NAAQS criteria pollutant was unfounded,[15] and its justifications "do not withstand scrutiny."[16]

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[11] First issued in 2002 and updated through 2018 until their withdrawal in 2021. *See* Troutman Report 16-20.
[12] Id. at 26.
[13] Id. at 28. The 2 tpy threshold is derived by multiplying 0.46 pounds per hour by the number of hours in a year, 8,760, resulting in a threshold of 4,029 pounds per year, or just above 2 tpy.
[14] Id. at 31.
[15] "PS Memo 10-01 also fails to acknowledge and address the fact that the MEIU had already conducted extensive hypothetical modeling and concluded that a 40 tpy modeling threshold could violate the 1-hour NAAQS in many cases." SAAG Report 30.
[16] Troutman Report at 30.

The Report states, "EPA guidance for major sources cited in PS Memo 10-01 . . . does not support a 40 tpy threshold for modeling minor sources."[17] The Report's "close review of the EPA guidance for major sources cited in PS Memo 10-01 confirm[ed] that it does not support a 40 tpy threshold for modeling minor sources."[18] Furthermore, the 40 tpy threshold used by Memo 10-01 had been tested and under extensive hypothetical modeling by MEIU a 40 tpy modeling threshold was found to violate the 1-hour NAAQS in many cases.[19]

The Report states that APCD "lacked understanding of the minor NSR permitting requirements and the EPA guidance underlying PS Memo 10-01."[20]

Colorado's Regulation 3 requires a verification that a new or modified source will not cause or contribute to a violation of the NAAQS, and the state failed to live up to its own standard.

D. The Troutman Report fails to respond to the fact that CDPHE is not enforcing the 24 hr PM 2.5 NAAQS

The Troutman Report speculates about the reason for $PM_{2.5}$'s exclusion from modeling thresholds used by CDPHE, saying they were excluded because the 2002 modeling thresholds were released the year after EPA's adoption of a $PM_{2.5}$ standard. At that time EPA enforced the $PM_{2.5}$ NAAQS through what was called the PM_{10} surrogate policy, by which $PM_{2.5}$ NAAQS compliance was verified through modeling PM_{10}. Therefore, the PM10 thresholds were used.

The PM_{10} surrogate policy ended in 2010 and at that time, actual modeling of PM2.5 started being required not just in Colorado, but across the country, and so PM2.5 thresholds were added to the CO Modeling Guideline. The Troutman Report does not respond to this. Although it may have investigated the claim, it did not respond to the fact that CDPHE was not enforcing the 24-hr PM2.5 NAAQS *at all* and did not have any justification for this.

Conclusion

[17] Id. at 28.
[18] Id. at 28.
[19] Id. at 30.
[20] Id. at 34.

From March 30, 2021, when the air modelers filed their complaint with the EPA Office of Inspector General not a single new air permit application was referred to the MEIU for modeling.[21] This did not meaningfully slow the issuance of new permits by permit engineers, which means all those permits were issued without any verification of the NAAQS.

Ensuring a project's compliance with the NAAQS prior to issuing an air permit is required by federal and Colorado law and for more than 10 years CDPHE has failed to meet this legal requirement, keeping in place a policy that has allowed facilities to circumvent the NAAQS. The CDPHE has seen air quality at the Denver Metropolitan Area degrade during the last 11 years from "marginal nonattainment" for ozone to "serious nonattainment" and soon to "severe nonattainment," and allowed unfettered growth of NO_2 emissions, one of the main ozone precursors. All of the administrative deficiencies identified in the report that led to this situation can be addressed by the convened APCD Modeling Guideline Panel.

PREVENTION OF SIGNFICANT DETERIORATION (PSD) INCREMENTS

Background

PSD Increment is the maximum amount of air pollution increase allowed to occur above an existing baseline concentration.

Baseline Concentrations are established per pollutant and applicable averaging period for specific areas (**baseline area**), and it is defined as the ambient air concentration existing in a baseline area at the time of the first complete PSD permit application submitted for a project affecting such area.

The concept and purpose of PSD Increment is not related to the National Ambient Air Quality Standard (NAAQS). The NAAQS are health-based standards established to protect human health (primary NAAQS) and public welfare (secondary NAAQS) and are defined as the maximum concentrations that will not cause harm to public health or welfare. PSD Increments on the other hand, are standards based on the existing baseline air quality in a particular area and were established to prevent significant deterioration of such air quality levels. Thus, a significant

[21] As of December 7, 2021.

deterioration of air quality is said to occur when the increase of air pollution translates into ambient air concentrations that exceed the corresponding PSD Increment.

So the NAAQS are absolute limits on the total ambient air concentrations of criteria pollutants and the PSD Increments are relative limits on the increase in ambient air concentrations with respect to a baseline concentration. Compliance with both limits is mandatory and in that sense air quality cannot deteriorate beyond the NAAQS even if not all the available PSD Increment has been consumed.

Another important concept is that a Baseline Concentration is associated not only to a Baseline Area, but also to a **Baseline Date**, defined as the date after which actual emissions from a source will affect the available PSD Increment. There are two types of baseline dates and a Trigger Date.

The **Major Source Baseline Date** is the date after which actual emissions changes associated with construction (i.e. physical changes or in method of operation) at a major stationary source will affect the available PSD Increment. Emissions changes at minor sources will not affect PSD Increment after this date and will only contribute to the Baseline Concentration.

The **Trigger Date** is the date after which the Minor Source Baseline Date can be triggered. Emissions changes from minor sources will not affect PSD Increment after this date and only contribute to the Baseline Concentration.

The **Minor Source Baseline Date** is the earliest date after the Trigger Date on which a complete PSD permit application is received by the corresponding regulatory agency. The Minor Source Baseline Date is established for the Baseline Area affected by this first PSD permit application. Actual emissions changes at all sources, major and minor, will affect PSD Increment after this date on the corresponding Baseline Area.

It is important to note that the Major Source Baseline Dates and the Trigger Dates are fixed dates set in regulations for the entire country, whereas the Minor Source Baseline Dates will vary from one Baseline Area to another depending on when the first complete PSD permit application affecting that area is received.

Considerations

For major source permits, the state reviews to make sure that it complies with the increment. However, because there have been no major source permits in the last ten years the state has not been keeping track of the consumption of the increments by the thousands of minor sources.

According to the Attorney General's office, rule-making would be necessary before the APCD could *require* a compliance demonstration with PSD increments during the permit review process for minor sources or minor modifications. Therefore, increment consumption from minor source growth is determined during the impact analysis process for major sources subject to PSD review or during periodic increment studies. Nevertheless, since minor source growth can consume PSD increment, minor sources seeking construction permits are encouraged to voluntarily demonstrate compliance with applicable increments.

Since is discretionary for the state to consider increments for minor sources, they haven't done it. And since oil and gas facilities continue to be able to break apart their permits, there will likely not be any more major source applications in the near future. Doing the increment study now is better than waiting until a major source applies for an application because increments haven't been calculated, so it's going to take a while to count up all of the increments from the minor source permits, so getting started will be helpful. In addition, we suspect that the increments thresholds have been met on the front range for NO2 and PM 2.5.

- Although increment studies are done regularly in other states, Colorado has had a study in 20 years it will take a lot of resources. Does CDPHE has the staff that are needed available? We don't know. Unless EPA oversees CDPHE work, the public should not request this.
- One rule that is unique to Colorado: Colorado AQCC Regulation 3, Part D.X.A.5.a. prescribes that no new major source or major modification can individually consume more than 75% of an applicable PSD Increment thus imposing an additional layer of stringency to the original federal limits.
- Is there another avenue for review of PM2.5 increments? Yes. Section X.A.4 states that "the division shall, on a periodic basis, review the adequacy of this Regulation No. 3 for preventing significant deterioration of air quality. Within thirty days after any

information becomes available and there is cause to believe that an applicable increment is being violated, the division shall present the cause for such belief to the commission. If the commission concurs that there is cause to believe that an increment is being violated, it or the commission, shall hold a hearing to determine whether an increment violation exists....Should the commission determine that an increment violation exists, the division shall review all sources affecting the area of increment violation and ensure that all sources are in compliance with all applicable permit conditions and state and local regulations. Within thirty days after completing such a review, the division shall recommend revisions, if necessary, to the commission to correct the violation...."

References

The applicable Colorado regulation; Air Quality Control Commission, REGULATION NUMBER 3, STATIONARY SOURCE PERMITTING AND AIR POLLUTANT EMISSION NOTICE REQUIREMENTS, 5 CCR 1001-5: https://drive.google.com/file/d/1Fqu8iSJztiXh5YJt8Tbmfv7KbKUhnBgs/view

See this CDPHE document that is from 2005 more information. At the time it was drafted, the State was looking at federal regulations and predicting that they would have a robust major source permitting program and be tracking increments. It references a tracker that I have not found on line and must be very outdated by now. It is important for public transparency to have an increment tracker available.
https://www.colorado.gov/airquality/permits/psdtrac.pdf

More recently, the 2021 draft Colorado modeling guidelines consider increments at pages 39 through 43.
https://apcd.state.co.us/permits/InterimColoradoModelingGuidelines_10.25.21_Updated.5.25.22.pdf

EPA: https://www.epa.gov/nsr/prevention-significant-deterioration-basic-information

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PEER Review of CDPHE Undated Report. Review of quality permit modeling and cumulative impacts in response to July 12, 2022 Policy Memo request from Governor Polis to CDPHE, DNR, COGCC

On July 12, 2022, Governor Polis directed the Colorado Department of Public Health and
Environment (CDPHE), the Department of Natural Resources (DNR), and the Colorado Oil and Gas Conservation Commission (COGCC) to undertake further interagency coordination and collaboration in service of the State's mission to improve air quality, reduce pollution, create a more efficient regulatory process, and protect the State's most at-risk communities. The first step in implementing these directives is for CDPHE to provide the Administration and General Assembly with "an evaluation of cumulative impacts and air quality permit modeling."

The Governor's 2022 letter states:

The Report should include how the Air Pollution Control Division ([Air Division])
considers, models or doesn't model, and evaluates the air quality impacts of a proposed
major or minor source or activity, and the cumulative air quality impacts of the proposed
source and other sources. The Report should also articulate the scientifically based and
capacity-based criteria used to prioritize when to model sources for permitting purposes
with limited resources.

We recommend that the legislature request Environmental Protection Agency (EPA) audit CDPHE minor source permits issued since it issued its' July 2022 EPA OIG report to determine if CDPHE has actually followed EPA's recommendations and also to determine if CDPHE is evaluating the cumulative impacts of the sources in the area when issuing permits. This audit should look into the existence and adequacy of the analysis supporting a NAAQS compliance determination.

CDPHE has been stating for years - and continues to do so in this document - that modeling is not the only mechanism to determine if a proposed source or activity will cause an exceedance of the National Ambient Air Quality Standards (NAAQS). However, it has never been able to explain what are the other mechanisms that exist nor has it been able to

implement any technically or legally viable alternative mechanism to replace modeling.

For a full decade CDPHE relied on an erroneous policy, PS Memo 10-01, as an alternative to modeling to determine NAAQS compliance. However, the investigation conducted by the Office of the Colorado Attorney General, the “Troutman Report” and the EPA Region 8, “July 2022 Report”, Office of the Inspector General response clearly state otherwise. They concluded that the arguments provided in the memo do not withstand scrutiny and lacked a justified means of satisfying the requirement in the Colorado SIP, Regulation 3, Part B for ensuring all permits do not allow an exceedance of the NAAQS. It also concludes that CDPHE's decision to rely solely on PS Memo 10-01 failed to ensure minor source permits would not exceed a NAAQS (See Troutman Report at pp. 28 - 32).

Furthermore, EPA has clearly established that "The impacts of new sources that do not yet exist, and modifications to existing sources that have yet to be implemented, can **only** be determined through modeling." (40 CFR 51 Appendix W §1.0.b 2017, emphasis added).

Having established that modeling is the only means to verify NAAQS compliance for new sources and modifications that have yet to be physically implemented (note that an air permit is legally needed prior to start operation of a new source or modification), any other mechanism used in lieu of modeling will either be a qualitative estimate based on professional judgement or will be simply inadequate –just as PS Memo 10-01.

By law, CDPHE must determine whether the construction or modification of minor sources will interfere with attainment of the NAAQS and prevent exceedances of the NAAQS, and while the regulations don't explicitly require modeling, in the absence of modeling, CDPHE must still satisfy its duty to ensure compliance with the NAAQS in some other way. (See Troutman Report at pp. 25 - 26).

To reduce the burden of modeling every single permit application while at the same time satisfying its legal duty of ensuring compliance with the NAAQS, CDPHE has historically relied on emissions thresholds that, in conjunction with other key factors, would help a subject matter expert make a qualitative determination on whether the project would comply with the

applicable NAAQS. If such a determination could not be made, modeling would be required.

One of the key factors that would be assessed along with the emissions threshold was the existence of other emission sources at the project site or in the surrounding area, and that in combination with the permitted project could cause a NAAQS exceedance. Other relevant factors also included the existing air quality in the area (i.e. background concentrations), the dispersion conditions at the permitted source, the terrain in the area, and the meteorological conditions.

All these factors were included in the previous versions of the CO Modeling Guidelines, but the existence of nearby sources is not explicitly mentioned in the new 2023 version of this document. This indicates that CDPHE may be evaluating only the permitted source in isolation when making a determination of whether modeling is necessary and when making a qualitative assessment to support a conclusion that the source will not cause a NAAQS exceedance. There is no indication that CDPHE is taking into consideration the potential cumulative impacts of the nearby sources when making these decisions and reaching NAAQS compliance conclusions without modeling.

In the past, CDPHE management prevented the assessment of cumulative impacts by allowing PS Memo 10-01 to supersede the recommendations of the CO Modeling Guidance and the requirements of the regulations. Now that PS Memo 10-01 has been retired, the new 2023 CO Modeling Guidance seems to be avoiding the assessment of cumulative impacts by ignoring the potential effect of nearby sources when doing qualitative analyses and deciding that modeling is not warranted.

Of all the permit applications received, only a small fraction are required to submit air quality modeling, for the rest, a qualitative analysis at best is relied upon to determine NAAQS compliance. Considering that there are many portions of the state where hundreds of existing facilities crowd small areas with no more than a 10 to 25 mile radius, it is a valid question of how CDPHE determines NAAQS compliance for new sources or modifications within those areas without conducting air quality modeling. One clear example of this situation is Weld County, where most of the oil and gas activity has been and continues to be concentrated and where the majority of the new sources and modifications to existing sources are permitted.

In its July 2022 report, the EPA OIG recommended that CDPHE:

"Ensure that all future Minor NSR permit records are complete and include sufficient documentation to support permit conditions and contain analyses that demonstrate that the permit conditions will not cause NAAQS violations." (See p. 28).

Based on this recommendation, every single air permit issued by CDPHE must include some type of technical analysis to support a NAAQS compliance determination. In a multisource situation where the cumulative impact of the emissions from all sources in the area have the potential to cause a NAAQS exceedance, the permit should include a modeling analysis simply because it becomes extremely difficult to make a defensible qualitative analysis that will support a conclusion of NAAQS compliance. And even such qualitative analysis would involve a great deal of complexity as it would have to assess multiple factors other than the mere emission rate. The 2023 modeling guidance doesn't seem to indicate that that is the case.

We recommend that the legislature request EPA audit CDPHE minor source permits issued since the July 2022 EPA OIG report to determine if CDPHE has actually followed EPA's recommendation referenced above, and also to determine if CDPHE is evaluating the cumulative impacts of the sources in the area when issuing permits. This audit should look into the existence and adequacy of the analysis supporting a NAAQS compliance determination.

Links:

https://peer.org/epa-validates-colorado-air-whistleblowers-charge/

https://peer.org/colorado-ag-probe-confirms-air-pollution-failures/

Troutman Report: Independent Investigation of Alleged Non-Enforcement of NAAQS by CDPHE, https://coag.gov/app/uploads/2021/09/CDOL-Report-210922.pdf

EPA July 2022 Report, EPA Report on Public Employees for Environmental Responsibility Hotline Complaint No. 2021-0188: https://www.epa.gov/caa-permitting/epa-report-public-employees-environmental-responsibility-hotline-complaint-no-2021