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Department of Public  
Health & Environment

KC Becker  
Regional Administrator  
United States Environmental Protection Agency  
Region 8  
1595 Wynkoop Street  
Denver, CO 80202

Re: EPA Region 8 Final Report Responding to Hotline Complaint No. 2021-0188,  
Referred by the EPA Office of Inspector General

October 21, 2022

Dear Regional Administrator Becker:

The Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (Division) appreciates the Environmental Protection Agency's (EPA's) review and assessment of the Public Employees for Environmental Responsibility (PEER) complaint, filed with the EPA Office of Inspector General (OIG) in March 2021. The Division values its partnership with EPA and our combined mission to protect the air quality in Colorado. The Division also values all of its employees and takes very seriously any concerns raised by them. Therefore, as EPA notes in its review, in response to the concerns raised in the PEER complaint, the Division has already made substantial changes to our permitting and modeling programs to ensure National Ambient Air Quality Standards (NAAQS) demonstrations are clearly described for permitting actions when required by federal or state law. These changes, and additional planned changes, are noted in our response to EPA's recommendations below.

#### Brief Background on the Division's Guidance for Minor Source Modeling

The Division would like to provide some background about the circumstances that led to our previous approach to minor source modeling.

The Division first developed a comprehensive "Modeling Guideline" in 2002, after a four-year effort involving opportunities for peer and public review, including a presentation to the Colorado Air Quality Control Commission. At the time Colorado's 2002 version of the Modeling Guideline (Modeling Guideline) was prepared, EPA had not yet adopted the current 1-hour nitrogen dioxide (NO<sub>2</sub>) and sulfur dioxide (SO<sub>2</sub>) NAAQS. Therefore, the Modeling Guideline focused on the annual NAAQS and most of the thresholds established in 2002 were set at the same emission rate as the significant emission rates (SER) in EPA's New Source Review (NSR) rule (e.g., 40 tons per year [tpy] for NO<sub>2</sub>).

In 2010, the Modeling Guideline was revised to include new modeling thresholds developed for the PM<sub>2.5</sub> and the 1-hour NO<sub>2</sub> and SO<sub>2</sub> NAAQS. The Division's Modeling and Emissions Inventory Unit conducted hypothetical modeling to determine an emission rate at which violations of the NAAQS would be unlikely under most circumstances. However, because the new short-term NAAQS were more stringent than the annual NAAQS, and in the absence of clear guidance from EPA, the hypothetical modeling exercise resulted in





**COLORADO**

Department of Public  
Health & Environment

some scenarios identifying potential NAAQS impacts at lower emissions thresholds. As EPA itself has recognized, the Division's hypothetical modeling was very conservative. The hypothetical modeling assumed a highly conservative (Tier 1) full conversion of nitrogen oxides (NO<sub>x</sub>) to NO<sub>2</sub>. There have been several revisions to the Modeling Guideline since 2010, however the conservative short-term thresholds developed by the Division's Modeling and Emissions Inventory Unit have not changed. In the absence of EPA direction, the Division at all times believed it retained the authority to exercise its independent judgment on a case-by-case basis as to whether modeling would be required in processing a given minor source permit application.

We further appreciate EPA's acknowledgement that many of the concerns raised in the PEER complaint stem from EPA's lack of clear guidance around modeling requirements for minor sources, particularly following the adoption of new 1-hour NAAQS for NO<sub>2</sub> and SO<sub>2</sub>. Furthermore, EPA has indicated that Colorado has broad discretion on whether and how to model minor sources. Therefore, in the absence of updated guidance from EPA, Colorado relied—as did many other states—on EPA's existing emission thresholds for determining when the state would require modeling as part of a NAAQS evaluation on a particular permit application. After EPA's promulgation of the 1-hour NAAQS for NO<sub>2</sub> and SO<sub>2</sub>, the Division's permitting program developed new guidance (in the form of permitting section or "PS" Memo 10-01) to assist permitting staff in identifying when to require modeling of minor sources in a manner consistent with EPA's guidance for Prevention of Significant Deterioration (PSD) sources. The memo relied on EPA guidance stating that an "ambient air quality impact analysis" is not necessary for PSD major sources with a potential to emit less than the significant emission rate of 40 tpy of NO<sub>2</sub> and SO<sub>2</sub>. Based on the principle that minor sources should not be regulated more stringently than major sources, the memo indicated modeling should only be required for minor sources that exceed the 40 tpy emission rate. This led to the unfortunate situation of two different Division programs having conflicting guidance on the same topic, and the Division has taken and will continue to take steps to address this situation.

PS Memo 10-01 has been retired and the Division has made substantial changes to our modeling and permitting programs to ensure that all Division programs are working together. The Division is in the process of updating our 2021 Interim Modeling Guideline (October 2021\_May 2022 Update) to provide clear guidance to sources, engineers, and the public on when modeling or a modeling determination is required for a source to demonstrate NAAQS compliance. As part of the process, we convened a group of scientific and other subject matter experts in air quality modeling and air quality monitoring. From November 2021 to March 2022, this Minor Source Permit Modeling Subject Matter Expert (SME) Panel met to work collaboratively to recommend modeling processes and guidelines that ensure Colorado has a cohesive and justified approach to modeling and permitting of minor sources that meet EPA NAAQS and Colorado air quality targets. In April 2022, the SME Panel completed its work and provided its recommendations to the Division. The Division then solicited public and stakeholder feedback, asking the public to provide comments on the SME Panel's recommendations as well as the Division's Interim Modeling Guideline. Public comments were accepted until July 22, 2022. Additionally, the Division





hosted two public listening sessions on June 13, 2022 and July 7, 2022, providing another opportunity for public participation.

Updating the 2021 Interim Modeling Guideline will take time as all recommendations and feedback received will be considered. Therefore, the Division also developed the Modeling Determination Form ([APCD Form 114](#)) for sources to get a determination from the Division's Permit Modeling Unit (PMU)<sup>1</sup> on whether or not modeling will be required on a case-by-case basis. In addition, a recently published [addendum](#) to the 2021 Interim Modeling Guideline (Permitting Section Addendum to the Modeling Guideline, August 25, 2022, Initial Issuance 09/21/2022), developed with input and collaboration from the PMU and the permitting groups, provides direction to applicants for certain situations when modeling is and when it is not required and, therefore, an APCD Form 114 need not be submitted. For example, the Division has determined that where a proposed permit modification project involves only emissions decreases, an APCD Form 114 is not required. The Division refers EPA to the addendum for more information on these circumstances, and the Division welcomes EPA's feedback. If an APCD Form 114 is required and an applicant receives a "modeling required determination" from the Division, the modeling analysis must be submitted with the permit application for review.

EPA's website<sup>2</sup> states that Region 8 is developing guidance for when modeling will be required for proposed new minor sources, minor modifications at existing minor sources, synthetic minor sources or modifications, or minor modifications at existing major sources in "Indian country." The website advises to "keep visiting this page for updates on available minor source modeling guidance for Indian country. Until guidance is available, consult guidance available from the state CAA [Clean Air Act] permitting jurisdictions near the area of Indian country your proposed project will be located ...." The Division encourages EPA to provide this guidance. EPA guidance is critical for states to reference when developing their own programs. Leaving each state to independently develop their own programs has led to a patchwork of different approaches across the country, according to the strengths, expertise, and resources of individual states.

The Division appreciates EPA's engagement with Colorado on these challenging questions of minor source modeling. Colorado commends EPA for assigning staff to participate in the SME Panel convened by Colorado to study these issues. As a result of EPA's engagement and other feedback the Division has received, Colorado currently has one of the most robust modeling requirements for permitting in the nation. For several months, all new applications, and all existing applications in queue, were sent to the Division's PMU to obtain an individualized determination as to whether modeling would be required as part of the process. However, this process was overly conservative and has proven extremely taxing on already overburdened state resources, without commensurate benefit to protection of public health and the environment. The addendum to the 2021 Interim Modeling Guideline provided guidelines on when sources are currently not required to get a

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<sup>1</sup> As part of its process improvements, the Division reorganized and brought the permit modeling staff (formerly in the Modeling and Emissions Inventory Unit in the Technical Services Program) into the permitting program as the "permit modeling unit."

<sup>2</sup> <https://www.epa.gov/caa-permitting/tribal-nsr-permitting-region-8>.





**COLORADO**

Department of Public  
Health & Environment

modeling determination, however, this still leaves many sources to a case-by-case determination. Therefore, as discussed previously, further updates are being made to the program to find a protective program that is also manageable and realistic. To facilitate this, Colorado looks forward to the pending EPA guidance mentioned on its website. While Colorado's program may prove to be a model for other regulatory agencies, the burden of setting standards that other states may either choose or be required to follow should not be on Colorado alone, so any assistance from EPA is welcomed.

The Division's responses to EPA's specific recommendations provided in the EPA Region 8 Final Report Responding to Hotline Complaint No. 2021-0188 (signed July 14, 2022) are below:

1. *EPA Recommendation 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.*

CDPHE has put into place processes and procedures to 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 proposed source or activity will not cause an exceedance of a NAAQS.

In permitting actions subject to the requirements of Colorado Regulation No. 3, Part B,<sup>3</sup> the Division must conduct an evaluation (i.e., NAAQS analysis) regarding whether the proposed source or activity, which is the basis for the permit action, will cause an exceedance of the NAAQS. See Regulation Number 3, Part B, Section III.D.1.c. What that NAAQS analysis entails will vary depending on the circumstances of the permitting action. Sometimes, to properly conduct the NAAQS analysis, dispersion modeling must be performed. However, in other circumstances, the required NAAQS analysis may be more qualitative. For example, the Interim Modeling Guideline (October 2021\_May 2022 Update) recognizes that applications involving de minimis emissions, which have a low probability of causing or contributing to an exceedance of an air quality standard, are subject to a different analysis than projects with large proposed increases in emissions. This qualitative analysis is conducted pursuant to Colorado guidance in place at the time of permit issuance, which is based on the controlling rules, statutes, and any relevant EPA guidance in place at the time of permit issuance.

The Division agrees, however, that some of its preliminary analyses (PA) completed as part of certain previous permit actions, and included as part of the permit record, did not include complete documentation of the Division's analysis to support the permit conditions. This is not indicative that the analysis was not performed, but the Division agrees that the analysis was not always well documented. As stated previously, the Division has implemented significant changes to our standard operating procedures to ensure

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<sup>3</sup> 5 C.C.R. §1001-5:B.





**COLORADO**

Department of Public  
Health & Environment

demonstration of compliance with the NAAQS is clearly documented and has removed conflicting statements so that all PAs include a clear discussion of the methods applied to determine NAAQS compliance.

In conclusion, for current and future permits, compliance with the NAAQS is and will be clearly demonstrated in one of three ways:

- APCD Form 114 is submitted, and modeling is requested by the PMU. The source conducts modeling to demonstrate compliance with the NAAQS and the modeling is reviewed and, if acceptable, approved by the Division's PMU. Permit records will identify and describe the modeling and will highlight permit terms and conditions necessary for inclusion in the permit to ensure no exceedance of the NAAQS.
- APCD Form 114 is submitted, but no modeling is requested by the PMU. Where a modeling determination has resulted in a Division decision that no modeling is required, the modeling determination will contain a clear explanation of the basis for this conclusion, and that will be part of the permit record.
- APCD Form 114 is not required. If a modeling determination is not required in accordance with the interim or future guideline, this rationale will be referenced in the permit record to document how compliance with the NAAQS was demonstrated for that permit action.

The Division's website has been updated to incorporate these new procedures and instructions and future guidance and updates will be reflected therein.

2. *EPA Recommendation 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.*

CDPHE is reviewing each of the permit records identified by EPA in order to ensure the sufficiency of the permit record. While this review has begun, it is not yet complete. As part of this review, CDPHE is committed to taking such actions within its authority to ensure protection of the NAAQS and the sufficiency of permit records.

Legal Authority: Essentially, EPA is asking the Division to revisit its final determination to issue certain minor source construction permits, which were issued under Colorado's EPA-approved state implementation plan (SIP), pursuant to Regulation Number 3, Part B. The Division understands that the basis for EPA's request is that the Division did not properly document its NAAQS determination made pursuant to Regulation Number 3, Part B,





**COLORADO**

Department of Public  
Health & Environment

Section III.D.1. In the EPA OIG report, EPA did not identify under what authority the Division might act to revisit determinations made in a previous permitting process or to supplement the permit record. The Division is working with the Colorado Attorney General's office to understand and evaluate its authority to act on EPA's recommendations. As an example, section 25-7-114.5(12.5), C.R.S., expressly provides the Division with authority to reopen certain construction permits in certain circumstances. However, the need to supplement the permit record does not appear in that provision as a justification for reopening a construction permit. If EPA is aware of any other statutory or regulatory authority that would assist the Division in this effort, the Division asks that EPA provide it.

In order to address EPA's concerns and the concerns identified in the complaint, the Division will proceed with evaluating each permit record identified by EPA, including any materials retained by the Division that were not in the formal permit record, if they exist. We expect that this review will be completed by mid-2023. Where the Division determines that no further action is required, the Division will provide EPA with a statement describing its basis for that determination. As noted above, the Division is continuing to evaluate what legal options and recourse is available if it determines that there are concerns about the source's potential interference with the NAAQS. If EPA has any guidance on these challenging questions of authority, the Division would appreciate EPA providing that guidance.

Modeling: As a general matter, the Division does not agree with EPA's determination that the perceived insufficiency of the permit record (based upon overly conservative modeling) is reason alone to conduct refined modeling for all eleven sources. As EPA notes in its Appendix W Guidance<sup>4</sup>, the ability of modeling to provide accurate estimates of future impacts depends on the type of model used and the assumptions used as inputs to the model. Due to the increasing complexity of air quality models, EPA notes that "it is increasingly important that they be directed by highly competent individuals with a broad range of experience and knowledge in air quality meteorology," and that "they should be coordinated closely with specialists in emissions characteristics, air monitoring and data processing." These Appendix W recommendations speak to the subjectivity and uncertainty of modeling, and why, as addressed in other EPA guidance,<sup>5</sup> modeling adequacy can be difficult to assess in complex situations. Ambient air quality monitoring ultimately determines the validity of modeling assumptions, and monitoring data demonstrates that all areas in Colorado attain the NO<sub>2</sub> and SO<sub>2</sub> NAAQS. For example, an air quality monitor near the Cripple Creek & Victor facility was installed in 2019 to help identify any possible exceedances of the NO<sub>2</sub> NAAQS, and none have occurred to date. Rather, actual measured NO<sub>2</sub> concentrations remain well below the NAAQS. Critically, based on EPA approved monitoring, the entire state of Colorado remains in attainment for the NAAQS that are the primary focus of the concerns that have been raised in the letter to EPA—the 1-hour NO<sub>2</sub> and SO<sub>2</sub> NAAQS. Although Colorado has an ozone nonattainment area, and NO<sub>2</sub> is a precursor to ozone, EPA and Colorado have both recognized there are multiple other factors

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<sup>4</sup> 40 CFR Part 51, Appendix W, *Guideline on Air Quality Models*.

<sup>5</sup> *Air Quality Modeling: What it is and How it is Used* (EPA Office of Air Quality Planning and Standards, September 1980).





and sources that contribute to ozone in Colorado, therefore, model-based predicted exceedances of the 1-hour NO<sub>2</sub> standard do not necessarily indicate a source will cause a violation of the ozone NAAQS.

Cripple Creek & Victor (CC&V) Permit: The Division has assessed the permit for CC&V and determined the covered projects were not under aggregated when determining if the projects qualified for minor NSR permits. In March of 2013, CC&V proposed modifying existing permit number 98TE0545 to authorize the Mine Life Extension 2 (MLE 2) project. Among other changes, the MLE 2 project included the installation and operation of new emission sources located at the Squaw Gulch Adsorption, Desorption, and Recovery (SGADR) Plant, consisting of a carbon regeneration kiln and an associated strip solution heater. The proposed SGADR activities were not incorporated into existing facility-wide permit 98TE0545, but were instead assigned separate permit number 16TE0011, which was subsequently issued in February of 2016. The EPA report expresses concern that this action may not have been consistent with the requirements of the Colorado SIP.

Installation and operation of the SGADR emission sources was one part of the MLE 2 project proposed by CC&V in 2013, so this single project was indeed split across two separate minor source permits. However, this splitting action did not bypass any regulatory requirements, and did not violate any requirements of the Colorado SIP. CC&V was still required to demonstrate compliance with the NAAQS based on the total MLE 2 project emission rates, as explicitly stated in Condition 7 of permit 16TE0011, Issuance 1. Beginning with the initial MLE 2 project proposal in March of 2013, all emission modeling calculations submitted to the Division by CC&V included the emission contributions from the SGADR emission sources. This includes the final modeling data used by the Division to determine that the CC&V mine would not cause or contribute to a violation of the NAAQS. As previously stated, the Division is looking closely at its authority to reopen these previously issued construction permits to supplement the permit record with this information.

Public Notice: In accordance with the July 8, 2021 OIG report “EPA Should Conduct More Oversight of Synthetic Minor-Source Permitting to Assure Permits Adhere to EPA Guidance,” EPA is in the process of assessing its current oversight of states’ minor source programs. In this report, OIG recommended (among other things) that the EPA (1) develop and implement an oversight plan for synthetic-minor-source permitting; (2) develop and issue new guidance that includes key EPA expectations for synthetic-minor-source permitting; and (3) take steps to assure that all states adhere to public participation requirements for synthetic-minor permits. Based on information EPA has shared recently with various groups, it is the Division’s understanding that EPA is expanding this assessment to include evaluating its oversight of all minor source permitting, including providing guidance on when public comment is warranted for minor permits. We look forward to receiving this additional guidance from EPA and will update our state rules and policies accordingly.

3. *EPA Recommendation 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.*





The Division will revise its current retention policy of seven years after cancellation of the facility for permitting records and implement revisions as soon as practicable but will begin implementation no later than 2023.

4. *EPA Recommendation 4: Improve communication and coordination among the Division groups that work on NSR permits.*

As EPA acknowledges on page 29 of the July 2022 Review of EPA's Office of Inspector General Hotline Complaint No. 2021-0188 report, the Division is taking steps to ensure improved communication between the Division's NSR permit groups.

The Division has implemented procedures that require sources meeting certain criteria to submit for a modeling determination prior to submitting a permit application. The implementation of this requirement ensures the permit groups are working together in determining when modeling is required for minor source permits. The Division also continues to assess and improve the workflow between these groups. In April 2022, the Division realigned its structure to move the modeling unit from the Technical Services group to the Stationary Sources group where the Permitting Program resides; this relocated permitting group is now named the Permit Modeling Unit. This reorganization has already facilitated improved communication between all Stationary Source Program (SSP) groups (Title V, Construction, Oil and Gas, and the PMU). For example, since the Permitting Program Manager currently oversees the PMU, there is regular communication between the Permitting Program Manager and the PMU supervisor. In addition, the Division holds regular (weekly) communication between all permitting group supervisors and the PMU supervisor. There is also regular communication and coordination between the PMU supervisor and the PMU scientists. A demonstrable result of this improved communication is the recently published [addendum](#) to the 2021 Interim Modeling Guideline (Permitting Section Addendum to the Modeling Guideline, August 25, 2022, Initial Issuance 09/21/2022), which was developed with input and collaboration from the PMU and the permitting groups.

5. *EPA Recommendation 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.*

The Division will continue to follow its standard operating procedures, which are to evaluate the entire facility to assess for potential projects or actions that should be aggregated with other substantially related projects. Furthermore, as previously discussed, the Division has implemented, and continues to implement, a robust modeling program and has put into place processes and procedures to 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 proposed source or activity will not cause an exceedance of a NAAQS.







Aggregation: As noted in the Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NSR): Aggregation and Project Netting (2009 Aggregation Action<sup>6</sup>), EPA notes that “determining what constitutes the ‘project’ is a case-by-case decision that is both site-specific and fact-driven. There is no predetermined list of activities that should be aggregated for a given industry or industries.” The Division’s standard operating procedures are to evaluate the entire facility for classification purposes during all permit actions and to assess for potential projects or actions that should be aggregated with other substantially related projects. Even for cases where a separate but related project may be split across permits for administrative purposes, the source is still required to demonstrate compliance with the NAAQS based on the total emissions of both projects. Historically, the rationale for decisions around project aggregation has been documented in the Technical Review Document for operating permits and as part of the history file and PA for oil and gas permits. Following updates to our PA for minor permits, the aggregation determination is now being thoroughly documented in our PAs. In addition, all Operating Permit modifications will now include an appropriate technical review document, which, among other benefits, will assist in clarifying the Division’s aggregation determinations for Title V permit modifications.

Air Quality Impact Analyses: Modeling will be conducted per the Interim Modeling Guideline, as updated, specifically according to the modeling thresholds in Table 1 and also in accordance with EPA’s Appendix W Guideline for air quality modeling. Modeling determinations will be made for all source modifications resulting in an increase in emissions and new source applications. Under the long established program, the Division or source models the project and compares the results against the SIL. If impacts are predicted to be above the SIL, cumulative modeling is conducted to show compliance with the NAAQS and will include nearby sources and/or background concentrations, as applicable.

Need for EPA Guidance: EPA notes in its Review of EPA’s Office of Inspector General Hotline Complaint No. 2021-0188 letter (July 2021) that OIG issued a report directing EPA to conduct more oversight of synthetic minor source permitting. Recommendations included:

- Develop and implement an oversight plan for synthetic-minor-source permitting;
- Update EPA’s practical enforceability guidance;
- Assess EPA studies and other relevant information on enclosed combustion devices during its next review of applicable regulations to determine whether revisions to monitoring, record-keeping, and reporting requirements are needed;
- Develop and issue new guidance that includes key EPA expectations for synthetic-minor source permitting; and
- Take steps to assure that all states adhere to public participation requirements for synthetic-minor permits.

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<sup>6</sup> Available at: <https://www.federalregister.gov/d/E9-815>.





EPA further noted that, in response to the OIG report, the EPA Office of Air and Radiation (OAR) plans to take the recommended actions and expects this work to be completed within the next two years. The Division looks forward to this improved EPA guidance related to the minor NSR permit program and to working with the EPA to further develop our program under this guidance. The Division has established a work group with EPA that will meet regularly to have further discussions around these developments to the Division's current approved program.

6. *EPA Recommendation 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.*

CDPHE appreciates additional engagement by EPA and has initiated regular discussions with the EPA Region 8 permitting managers to seek guidance and feedback, discuss developments in our program, and evaluate program challenges.

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cc: Jill Hunsaker Ryan, Executive Director, CDPHE  
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