

MEMO

TO Muhammad Q. Zaman *MQZ*
Environmental Program Manager
Air Quality Program

FROM John J. Twardowski, P.E. *JJT*
Air Quality Engineer
Facilities Permitting Section
Air Quality Program

THRU Daniel C. Husted, P.E. *DCH*
Chief, Facilities Permitting Section
Air Quality Program

DATE June 22, 2023

RE Cherokee Pharmaceuticals, LLC
Title V Operating Permit No. 49-00007
Riverside Borough, Northumberland County

Procedural History

As part of the Reasonably Available Control Technology (RACT) regulations codified at 25 Pa. Code §§ 129.111—129.115 (relating to additional RACT requirements for major sources of NO_x and VOCs for the 2015 ozone NAAQS) (RACT III), the Pennsylvania Department of Environmental Protection (Department) has established a method under § 129.114(i) (relating to alternative RACT proposal and petition for alternative compliance schedule) for an applicant to demonstrate that the alternative RACT compliance requirements incorporated under § 129.99 (relating to alternative RACT proposal and petition for alternative compliance schedule) (RACT II) for a source that commenced operation on or before October 24, 2016, and which remain in force in the applicable operating permit continue to be RACT under RACT III as long as no modifications or changes were made to the source after October 24, 2016. The date of October 24, 2016, is the date specified in § 129.99(i)(1) by which written RACT proposals to address the 1997 and 2008 8-hour ozone National Ambient Air Quality Standards (NAAQS) were due to the Department or the appropriate approved local air pollution control agency from the owner or operator of an air contamination source located at a major NO_x emitting facility or a major VOC emitting facility subject to § 129.96(a) or (b) (relating to applicability).

The procedures to demonstrate that RACT II is RACT III are specified in § 129.114(i)(1)(i), 129.114(i)(1)(ii) and 129.114(i)(2), that is, subsection (i), paragraphs (1) and (2). An applicant may submit an analysis, certified by the responsible official, that the RACT II permit requirements remain RACT for RACT III by following the procedures established under subsection (i), paragraphs (1) and (2).

Paragraph (1) establishes cost effectiveness thresholds of \$7,500 per ton of NO_x emissions reduced and \$12,000 per ton of VOC emissions reduced as “screening level values” to determine the amount of analysis and due diligence that the applicant shall perform if there is no new pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis. Paragraph (1) has two subparagraphs.

Subparagraph (i) under paragraph (1) specifies that the applicant that evaluates and determines that there is no new pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis and that each technically feasible air cleaning device, air pollution control technology or technique evaluated for the alternative RACT requirement or RACT emission limitation approved by the Department (or appropriate approved local air pollution control agency) under § 129.99(e) had a cost effectiveness equal to or greater than \$7,500 per ton of NO_x emissions reduced or \$12,000 per ton of VOC emissions reduced shall include the following information in the analysis:

- A statement that explains how the owner or operator determined that there is no new pollutant specific air cleaning device, air pollution control technology or technique available.
- A list of the technically feasible air cleaning devices, air pollution control technologies or techniques previously evaluated under RACT II.
- A summary of the economic feasibility analysis performed for each technically feasible air cleaning device, air pollution control technology or technique in the previous bullet and the cost effectiveness of each technically feasible air cleaning device, air pollution control technology or technique as submitted previously under RACT II.
- A statement that an evaluation of each economic feasibility analysis summarized in the previous bullet demonstrates that the cost effectiveness remains equal to or greater than \$7,500 per ton of NO_x emissions reduced or \$12,000 per ton of VOC emissions reduced.

Subparagraph (ii) under paragraph (1) specifies that the applicant that evaluates and determines that there is no new pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis and that each technically feasible air cleaning device, air pollution control technology or technique evaluated for the alternative RACT requirement or RACT emission limitation approved by the Department (or appropriate approved local air pollution control agency) under § 129.99(e) had a cost effectiveness less than \$7,500 per ton of NO_x emissions reduced or \$12,000 per ton of VOC emissions reduced shall include the following information in the analysis:

- A statement that explains how the owner or operator determined that there is no new pollutant specific air cleaning device, air pollution control technology or technique available.
- A list of the technically feasible air cleaning devices, air pollution control technologies or techniques previously evaluated under RACT II.
- A summary of the economic feasibility analysis performed for each technically feasible air cleaning device, air pollution control technology or technique in the previous bullet and the cost effectiveness of each technically feasible air cleaning device, air pollution control technology or technique as submitted previously under RACT II.
- A statement that an evaluation of each economic feasibility analysis summarized in the previous bullet demonstrates that the cost effectiveness remains less than \$7,500 per ton of NO_x emissions reduced or \$12,000 per ton of VOC emissions reduced.
- A new economic feasibility analysis for each technically feasible air cleaning device, air pollution control technology or technique.

Paragraph (2) establishes the procedures that the applicant that evaluates and determines that there is a new or upgraded pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis shall follow.

- Perform a technical feasibility analysis and an economic feasibility analysis in accordance with § 129.92(b) (relating to RACT proposal requirements).
- Submit that analysis to the Department (or appropriate approved local air pollution control agency) for review and approval.

The applicant shall also provide additional information requested by the Department (or appropriate approved local air pollution control agency) that may be necessary for the evaluation of the analysis submitted under § 129.114(i).

Facility Details

Cherokee Pharmaceuticals, LLC's (Cherokee's) Riverside Borough facility (the facility) is a pharmaceutical manufacturing facility. The facility is major for both NO_x and VOCs. The EPA approved this facility's RACT II plan on April 24, 2017 (85 FR 65718, October 16, 2020).

The only source subject to a RACT II as RACT III analysis at this facility is Source ID 101, the facility's wastewater treatment plant (WWTP, or the plant). No modifications to this source have occurred since October 24, 2016.

Cherokee submitted its RACT II as RACT III proposal for Source ID 101 on December 20, 2022. The analysis is only for VOCs as the wastewater treatment plant is not a source of NO_x.

Source ID	Source Name	RACT III provision
101	Wastewater Treatment Plant	§129.114(i)(1)(i)

The RACT II determination/requirements can be found in the attached RACT II review memo and at the following link:

[EPA Approved Pennsylvania Source-Specific Requirements | US EPA](#)

RACT III analysis performed by the Department (or appropriate approved local air pollution control agency) under § 129.114(j)(1):

RACT II for Source ID P101, wastewater treatment plant, is as follows:

- a 15 ton per 12-consecutive month period VOC emissions cap;
- maximizing the biodegradation of the dissolved volatiles in the wastewater;
- maintaining good operating practices;
- the WWTP's influent wet well, equalization basin, neutralization basin and the primary lift station all require covers.

Since Cherokee has made no changes to their WWTP since the RACT II evaluation, Cherokee is proposing the continued compliance with these RACT II requirements as RACT III. In order to satisfy the requirements of 25 Pa. Code §129.114(i)(1)(i), Cherokee offered the following:

- In their RACT II evaluation, Cherokee evaluated the use of enhanced biodegradation, additional covers, steam stripping, and any fixed roofs vented to an air cleaning device. Because the plant treats a high volume, low organic concentration of wastewater via aerated, biodegradation, the only technically feasible control option was the fixed roof vented to an air cleaning device. To justify this same conclusion for RACT III, Cherokee searched the EPA’s RBLC database and could find no new control strategies for their type of WWTP.
- Cherokee provided a copy of their RACT II economic feasibility analysis for the option noted above. The analysis accounted only for the upgrades to the tanks and did not factor in the cost of an air cleaning device. When this evaluation was conducted in 2016, the annualized costs of the roof installations alone exceeded \$12,000/ton of VOCs removed (based on the conservative assumption that all VOCs collected and vented would be removed). Please refer to the table below. Due to the much higher equipment and labor costs of the present day, Cherokee assumed that the present costs of this control option would be even higher than that calculated in 2016. As such, Cherokee did not perform an updated cost analysis.

Because I reviewed Cherokee’s RACT II evaluation for the WWTP, I can verify all information provided by Cherokee as noted above. Additionally, I know of no new WWTP control techniques for high volume, low concentration wastewater and that the use of the RBLC database is an acceptable evaluation tool. I concur with Cherokee that there is no need to perform an updated economic evaluation of the control option. Based on all information provided by Cherokee, I concur that the approved RACT II evaluation qualifies as RACT III, thus no physical changes are necessary to the WWTP.

Source ID	Source Name	Control Technology	VOC Emissions Before Control	VOC Emissions After Control	Total Annual Cost of Control Equipment	VOC (\$/Ton)
101	Wastewater Treatment Plant	Roof installation for all plant components	15	0	\$354,748	\$23,650/Ton

The economic feasibility analysis summarized in the Table above demonstrates that the cost effectiveness remains equal to or greater than \$12,000 per ton of VOC emissions reduced.

The Department has reviewed source information, control technologies or measures evaluated by Cherokee. The Department also performed an independent analysis which included, the Department’s continuous review of permit applications since the applicability date of RACT II, internet searches, BACT/RACT/LAER Clearinghouse search, knowledge gained from the Department permitting staff participating in technical presentations by several vendors and manufacturers of pollution control technology, and a review of EPA and MARAMA’s documents. Based on our review of these documents, along with training and the expertise of the reviewing staff, the Department concludes that there are no new or updated air pollution control technologies available for the source found at Cherokee and

determines that RACT II requirements for Source ID 101 at Cherokee listed in the table assure compliance with requirement for RACT III for the § 129.111 - § 129.115.

Public Discussion

No discussions occurred with the EPA, Cherokee or the public concerning the WWTP after the company submitted the RACT II is RACT III proposal application.

Conclusion

The Department has analyzed Cherokee's proposal for considering RACT II requirements as RACT III and also performed independent analysis. Based on the information provided by Cherokee and independently verified by the Department, the Department determines that the RACT II requirements satisfy the RACT III requirements. The RACT III requirements are identical to the RACT II requirements and are as stringent as RACT II.

cc: NCRO, 49-00007