

**FINAL-FORM RULEMAKING**  
**ENVIRONMENTAL QUALITY BOARD**  
**[25 PA. CODE CH. 123]**  
**Revision of the Maximum Allowable Sulfur Content Limit for**  
**No. 2 and Lighter Commercial Fuel Oil**

The Environmental Quality Board (Board) amends Chapter 123 (relating to standards for contaminants) to reduce the maximum allowable sulfur content limit for No. 2 and lighter commercial fuel oil, generally sold for and used in residential and commercial furnaces and oil heat burners for home or space heating, water heating, or both, from the current limit of 500 parts per million (ppm) of sulfur to 15 ppm. This final-form rulemaking is reasonably necessary to address regional haze and visibility impairment impacting Federal Class I areas and related applicable Federal Clean Air Act (CAA) (42 U.S.C.A. §§ 7401—7671q) requirements and will also improve public health and visibility impairment in urban and rural areas of the Commonwealth. The compliance date of this rulemaking is September 1, 2020.

This final-form rulemaking will be submitted to the United States Environmental Protection Agency (EPA) for approval as a revision to the Commonwealth's State Implementation Plan (SIP) following publication of the final-form rulemaking in the *Pennsylvania Bulletin*.

This final-form rulemaking was adopted by the Board at its meeting on \_\_\_\_\_.

*A. Effective Date*

This final-form rulemaking will be effective upon publication in the *Pennsylvania Bulletin*.

*B. Contact Persons*

For further information, contact Kirit Dalal, Chief, Division of Air Resource Management, Bureau of Air Quality, Rachel Carson State Office Building, P.O. Box 8468, Harrisburg, PA 17105-8468, (717) 772-3436; or Jesse C. Walker, Assistant Counsel, Bureau of Regulatory Counsel, Rachel Carson State Office Building, P.O. Box 8464, Harrisburg, PA 17105-8464, (717) 787-7060. Persons with a disability may use the Pennsylvania AT&T Relay Service, (800) 654-5984 (TDD users) or (800) 654-5988 (voice users). This final-form rulemaking is available on the Department of Environmental Protection's (Department) web site at [www.dep.pa.gov](http://www.dep.pa.gov) (select "Public Participation," then "Environmental Quality Board (EQB)").

*C. Statutory Authority*

This final-form rulemaking is authorized under section 5(a)(1) of the Air Pollution Control Act (APCA) (35 P.S. § 4005(a)(1)), which grants the Board the authority to adopt rules and regulations for the prevention, control, reduction and abatement of air pollution in this Commonwealth. Section 5(a)(8) of the APCA also grants the Board the authority to adopt rules and regulations designed to implement the provisions of the CAA.

#### *D. Background and Purpose*

Among other things, this final-form rulemaking allows the Department to address regional haze and visibility impairment. Haze is one of the most basic forms of air pollution. It degrades visibility in many American cities and scenic areas. Haze is caused when sunlight encounters tiny pollution particles in the air, which reduce the clarity and color of what we see, especially during humid conditions. Most haze is not natural. It is air pollution carried by the wind often many hundreds of miles from where it originated. Regional haze is visibility impairment produced by a multitude of combustion sources and activities emitting sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), fine particulate matter or particle matter 2.5 micrometers or less (PM<sub>2.5</sub>), and PM<sub>2.5</sub> precursors. The combustion sources and activities are located across a broad geographic area. Visibility impairment is humanly perceptible change in visibility (such as light extinction, visual range, contrast and coloration) from the visibility that would have existed under natural conditions.

The SO<sub>2</sub> emissions released by combustion of sulfur-containing No. 2 or lighter commercial fuel oil contribute to the formation of regional haze and PM<sub>2.5</sub>, both of which are serious public health and welfare threats and affect visibility. Numerous scientific studies have linked PM<sub>2.5</sub> particle pollution exposure to a variety of problems, including: premature death in people with heart or lung disease; nonfatal heart attacks; irregular heartbeat; aggravated asthma; decreased lung function; and increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing. People with heart or lung disease, children and older adults are the most likely to be affected by fine particle pollution exposure.

Fine particles are similar in size to the wavelength of light, and are most efficient, per unit of mass, at reducing visibility. Particles affect visibility through the scattering and absorption of light. SO<sub>2</sub> emissions oxidize in the atmosphere to form sulfate particles. Visibility impairment, including regional haze, in rural areas of eastern North America is primarily due to sulfate particles. The CAA and its implementing regulations codified in 40 CFR Part 51, Subpart P (relating to protection of visibility) mandate actions to protect visibility, especially in Federal Class I areas, which include National parks, forests and wilderness areas.

In 1977, Congress added section 169A of the CAA (42 U.S.C.A. § 7491), regarding visibility protection for Federal Class I areas. Section 169A(a)(1) of the CAA (42 U.S.C.A. § 7491(a)(1)), sets a National goal for the “prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution.” The Federal visibility regulations require restoration of natural levels of visibility in the mandatory Federal Class I areas by 2064. See 40 CFR 51.308(d)(1). The Federal regulations further require that states consider the implementation, in their regional haze SIPs, of the emission reduction measures identified by Class I states as being necessary to make reasonable progress in any Class I area. See 40 CFR 51.308(d)(3). In 1990, Congress added section 169B of the CAA (42 U.S.C.A. § 7492), regarding visibility, to authorize further research and regular assessments of the progress made so far toward the National visibility goals. Section 169B(c)(1) of the CAA (42 U.S.C.A. § 7492(c)(1)), authorizes the EPA Administrator to establish a transport region for visibility impairment when there is reason to believe that pollutants from one or more states contribute to visibility impairment in Federal Class I areas.

In 1999, the EPA and the affected states and tribes agreed to create five Regional Planning Organizations (RPO) to facilitate interstate coordination with regional haze SIPs. The Commonwealth is a member of the Mid-Atlantic/Northeast Visibility Union (MANE-VU) RPO, established in 2001, to assist the Mid-Atlantic and Northeast states in planning and developing their regional haze SIP revisions. The other MANE-VU states are Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont. The District of Columbia, Native American tribes in the region, the EPA, the United States Fish and Wildlife Service and the United States Forest Service are also members of MANE-VU. There are 156 mandatory Federal Class I areas established under the CAA, including seven in the MANE-VU states. Although this Commonwealth does not have a mandatory Federal Class I area in it, emissions from this Commonwealth are considered to impact several Federal Class I areas in MANE-VU states, as well as the Dolly Sods Wilderness Area in West Virginia and Shenandoah National Park in Virginia. This final-form rulemaking addresses, in part, those impacts.

MANE-VU evaluated the residential and commercial furnace and oil heat burner categories for their contribution to the MANE-VU SO<sub>2</sub> emission inventory from the burning of sulfur-containing distillate oil (a general classification for one of the petroleum fractions produced in conventional distillation operations). The Northeast States for Coordinated Air Use Management (NESCAUM) performed this evaluation for MANE-VU in 2005 using 2002 data, which was the most current information available at the time of the study (2005 NESCAUM evaluation). The 2005 NESCAUM evaluation found that the combined SO<sub>2</sub> emissions from all MANE-VU regional residential and commercial furnaces and oil heat burners contributed about 7% to the MANE-VU total SO<sub>2</sub> emission inventory. In this Commonwealth, commercial fuel oil combustion in residential and commercial furnaces and oil heat burners contributed between 2% and 3% of the SO<sub>2</sub> emissions in the MANE-VU region, depending on the season.

To address the impact of regional haze on mandatory Federal Class I areas within the MANE-VU region, the members adopted a course of action on June 20, 2007, in the *Statement of the Mid-Atlantic and Northeast Visibility Union (MANE-VU)* (2007 MANE-VU “Ask”). The 2007 MANE-VU “Ask” established that the member states would pursue a coordinated course of action, including pursuing the adoption and implementation of the following strategy to reduce the maximum allowable sulfur content of distillate oil in the “inner zone” MANE-VU states (New Jersey, New York, Delaware and this Commonwealth, or portions thereof), as follows—to 500 ppm (0.05% sulfur by weight) by 2012 and to 15 ppm (0.0015% by weight) by 2016. The 2005 NESCAUM evaluation indicated that the anticipated annual SO<sub>2</sub> emission reduction benefits in this Commonwealth would be approximately 25,000 tons per year (tpy) when the maximum allowable sulfur content limit of 15 ppm for No. 2 and lighter commercial fuel oil was fully implemented.

The Department reviewed the 2005 NESCAUM evaluation and the 2007 MANE-VU “Ask” recommendations and determined that the recommended lower maximum allowable sulfur content limit for No. 2 and lighter commercial fuel oil was an appropriate measure to be pursued as part of the regional strategy to improve visibility. Lowering the maximum allowable sulfur content limit for No. 2 and lighter commercial fuel oil sold for and used in residential and

commercial furnaces and oil heat burners in this Commonwealth would contribute to the MANE-VU goals of improving visibility in the region's mandatory Federal Class I areas. Actions taken by the Department to reduce haze on a regional level would also improve visibility in this Commonwealth's recreational and urban areas.

On February 9, 2013, the Board amended its regulations in § 123.22 (relating to combustion units) to reduce SO<sub>2</sub> emissions from home heating and commercial fuel oils beginning July 1, 2016. See 43 Pa.B. 806 (February 9, 2013). The Board reduced the maximum allowable sulfur content limit for No. 2 and lighter commercial fuel oil beginning July 1, 2016, to 500 ppm, rather than to 15 ppm, due to concerns at the time regarding the available supply of low sulfur content distillate oil in various regions of the Commonwealth. The EPA approved a SIP revision incorporating the amended maximum allowable sulfur content limits for No. 2 and lighter, as well as heavier commercial fuel oil provisions into the Commonwealth's SIP at 79 FR 39330 (July 10, 2014).

The City of Philadelphia, Department of Public Health, Philadelphia Air Management Services (AMS) adopted a low-sulfur content commercial fuel oil requirement, enacted into law by the City of Philadelphia on July 15, 2014, as an amendment to Philadelphia Code, Title 3- Air Management Code, Chapter 3-200, § 3-207 (relating to sale of fuel oil) and to Philadelphia Air Management Regulation III (relating to the control of emissions of oxides and sulfur compounds), Section I. Since there was not a low-sulfur fuel supply concern within the Philadelphia region, the amendments reduced the maximum allowable sulfur content limit for No. 2 and lighter commercial fuel oil to 15 ppm in the City of Philadelphia, effective July 1, 2015. The Department, on behalf of AMS, submitted these amendments to the EPA as a revision to the Commonwealth's SIP on June 27, 2018.

On August 25, 2017, MANE-VU issued the *Statement of the MANE-VU States Concerning a Course of Action Within MANE-VU Toward Assuring Reasonable Progress For the Second Regional Haze Implementation Period (2018-2028)* (2017 MANE-VU "Ask"). The 2017 MANE-VU "Ask" specified that member states are to expeditiously pursue adoption of the low-sulfur content maximum allowable limit of 15 ppm for No. 2 and lighter commercial fuel oil if they have not done so already. The Department has determined that the availability of distillate oil within various regions of the Commonwealth and Nationwide, with a maximum allowable limit of 15 ppm of sulfur or less, is no longer of concern. The supply of No. 2 and lighter commercial fuel oil with a maximum sulfur content of 15 ppm has increased over the last several years, and fuel with a sulfur content between 15 ppm and 500 ppm has decreased to less than 1% of the overall supply of distillate oil distributed on the east coast. This final-form rulemaking is designed to implement the 2017 MANE-VU "Ask" course of action to pursue adoption of a maximum allowable sulfur content limit of 15 ppm for No. 2 and lighter commercial fuel oil Statewide for purposes of reducing regional haze and visibility impairment in this Commonwealth and affected Federal Class I areas.

The EPA's regional haze regulations require all states, even those that do not contain a Federal Class I area, to submit a SIP revision containing emission reduction strategies to improve visibility in Class I areas affected by emissions from within the state. See 40 CFR 51.308(d)(3). States are required to evaluate advancement toward reasonable progress goals every five years to

assure that emission controls are on track with emission reduction forecasts in the SIP. The first progress report is due five years from the submittal of the initial regional haze implementation plan. See 40 CFR 51.308(g). If emission controls are not on track to meet SIP forecasts, then a state would need to take action to assure that emission controls by 2018 would be consistent with the SIP or to revise the SIP to be consistent with the revised emission forecast. The Commonwealth submitted its first regional haze SIP revision to the EPA in December 2010. To track visibility improvement, the Commonwealth must submit its second regional haze SIP revision to the EPA by July 31, 2021. The third regional haze SIP revision is due July 31, 2028, and then additional SIP revisions every 10 years thereafter.

In addition to improving public health and the environment, decreased emissions of SO<sub>2</sub> will also contribute to the attainment or maintenance, or both, of the 2012 annual PM<sub>2.5</sub> National Ambient Air Quality Standards (NAAQS) within this Commonwealth. On April 7, 2015, the EPA designated the Allegheny, Delaware and Lebanon County areas as nonattainment with the 2012 annual PM<sub>2.5</sub> NAAQS. See 80 FR 18535, 18549 (April 7, 2015). The EPA subsequently determined that the Delaware and Lebanon County areas attained that NAAQS. See 81 FR 89868 (December 13, 2016) and 83 FR 9435 (March 6, 2018). On January 23, 2019, and February 11, 2019, the Department submitted requests to the EPA to redesignate the Delaware County and Lebanon County nonattainment areas to attainment of the 2012 annual PM<sub>2.5</sub> NAAQS. The maintenance plans for these areas identified lowering the No. 2 and lighter commercial fuel oil standard from 500 ppm to 15 ppm as a contingency measure to ensure that these areas will continue to be classified as attainment for the 2012 annual PM<sub>2.5</sub> NAAQS for at least 10 years after redesignation to attainment. See 84 FR 33886, 33900 (July 16, 2019). On September 30, 2019, the EPA approved the redesignation requests and maintenance plans for the Delaware County and Lebanon County 2012 PM<sub>2.5</sub> areas, effective October 30, 2019. See 84 FR 51420, 51424 (September 30, 2019).

The Department presented the draft final-form Annex A to the Air Quality Technical Advisory Committee (AQTAC) on October 17, 2019, and to the Small Business Compliance Advisory Committee (SBCAC) on October 23, 2019, and briefed the committees on the comments received on the proposed rulemaking. Both committees voted unanimously to concur with the Department's recommendation to present this final-form rulemaking to the Board for consideration. The Department presented the draft final-form Annex A to the Citizens Advisory Council's (CAC) Policy and Regulatory Oversight Committee on October 28, 2019. On the recommendation of the Policy and Regulatory Oversight Committee, on November 19, 2019, the CAC concurred with the Department's recommendation to present this final-form rulemaking to the Board for consideration. Advisory committee meetings are advertised and open to the public.

#### *E. Summary of Final-Form Rulemaking and Changes from Proposed to Final-Form Rulemaking*

The proposed compliance dates under § 123.22(a)-(e) were revised to fixed dates in this final-form rulemaking: August 31, 2020, and September 1, 2020. These dates certain replace the proposed 59 days after the effective date and 60 days after the effective date, respectively.

## *F. Summary of Comments and Responses on the Proposed Rulemaking*

The Board adopted this proposed rulemaking at its meeting on April 16, 2019. The proposed rulemaking was published at 49 Pa.B. 3482 (July 6, 2019), opening a 66-day public comment period that closed on September 9, 2019. Three public hearings were held on August 6, 7 and 8, 2019, in Pittsburgh, Norristown and Harrisburg respectively.

Public comments were received from 23 public commenters. No written comments were received from the Senate or House Environmental Resources and Energy Committees, but Pennsylvania State Senator Scott Hutchinson submitted written comments. On October 9, 2019, the Independent Regulatory Review Commission (IRRC) submitted its comments. The comments received on the proposed rulemaking are summarized as follows and are addressed in a comment and response document which is available from the Department.

Public comments on the proposed rulemaking from small and large businesses alike were overwhelmingly supportive of reducing the sulfur content from 500 ppm to 15 ppm. Two commenters suggested adding a biodiesel mandate, which is outside the scope of this final-form rulemaking; however, biodiesel may still be used, but is not mandated. One trade association indicated that upstream suppliers believed that the 60-day transition period might not be enough time to cycle through existing 500 ppm product, but the association ultimately supported the 60-day transition period. Another commenter requested a longer time between the effective and compliance dates, as well as a fixed compliance date, that is, July 1, 2020, or September 1, 2020, rather than a date “60 days after the effective date of adoption” as stated in the proposed rulemaking. Senator Hutchinson indicated that there is a small transmix refinery in his district that directly employs 44 people on which the proposed rulemaking would place an onerous financial burden. He further indicated that requiring an immediate reduction in sulfur content from 500 ppm to 15 ppm would be overly burdensome on a small refinery that lacks resources to invest in plant upgrades to meet the new standards.

In response to comments, the Board revised the compliance date in this final-form rulemaking to September 1, 2020, to provide certainty for refinery owners and operators, distributors, carriers, and owners and operators of commercial fuel oil and transportation diesel fuel terminals. This compliance date provides ample notice for businesses to adapt their operations for the 2020-2021 fuel delivery season. Non-compliant commercial fuel oil purchased and delivered by businesses to the ultimate consumer before the compliance date of September 1, 2020, may still be used by the ultimate consumer after the compliance date. Noncompliant commercial fuel oil with a higher sulfur content may be marketed on and after September 1, 2020, to states that do not have a maximum allowable sulfur content limit of 15 ppm for No. 2 and lighter commercial fuel oil, such as Ohio, West Virginia, and Virginia.

With regard to comments related to small business impact, the Board explained that, the commercial fuel oil industry overall will benefit from having consistent maximum allowable sulfur content limits in transportation diesel fuel including nonroad, locomotive and marine (NRLM) and highway transportation diesel fuel as well as No. 2 and lighter commercial fuel oil. Consistent maximum allowable sulfur content limits will help refinery owners and operators, distributors, carriers, and owners and operators of commercial fuel oil and transportation diesel

fuel terminals minimize the number of storage tanks and delivery trucks needed. The maximum allowable sulfur content level required in NRLM and highway transportation diesel fuels is already 15 ppm. No. 2 and lighter commercial fuel oil could be combined with NRLM and highway transportation diesel fuel in the same storage tanks and delivery trucks, thus minimizing the number of vehicles needed. Further, the regulatory amendments included in this final-form rulemaking are part of a longstanding goal to reduce sulfur content.

Finally, the Commonwealth is currently the only state included in MANE-VU that does not yet have the requirement for sulfur content of 15 ppm, putting the Commonwealth at a competitive disadvantage as explained in Section G.

## *G. Benefits, Costs and Compliance*

### *Benefits*

Lowering the maximum allowable sulfur content of No. 2 and lighter commercial fuel oil from 500 ppm of sulfur to 15 ppm will benefit the Commonwealth's 12.8 million residents, numerous animals, crops, vegetation and natural areas, as well as the residents and environments of downwind states, through reduced regional haze, and reduced SO<sub>2</sub>, PM<sub>2.5</sub> and ground-level ozone pollution. SO<sub>2</sub> is the most significant pollutant involved in the formation of regional haze. Visibility impairment, including regional haze, in rural areas of eastern North America occurs primarily due to sulfate particles. Sulfate particles are formed in the atmosphere when SO<sub>2</sub> emissions oxidize.

SO<sub>2</sub> emissions also contribute to the formation of acid rain, which makes lakes, rivers and streams unsuitable for many fish and other aquatic life, and erodes stone buildings, historical monuments, and paint on cars. Acid rain and PM<sub>2.5</sub> contribute to agricultural crop and vegetation damage and to degradation of the Chesapeake Bay. The reductions in SO<sub>2</sub> emissions will reduce air pollution threats to public health and welfare and the environment and will contribute to improving visibility. Decreased emissions of SO<sub>2</sub> will also contribute to the attainment and maintenance, or both, of the SO<sub>2</sub>, PM<sub>2.5</sub>, and ground-level ozone NAAQS in this Commonwealth and the MANE-VU region.

NO<sub>x</sub> emissions will also decrease due to furnace and oil heat burner efficiency improvements. Emissions of NO<sub>x</sub> contribute to public health and environmental problems in the Mid-Atlantic and Northeast states, including the formation of PM<sub>2.5</sub> and ground-level ozone.

The existence of PM<sub>2.5</sub> in the atmosphere not only produces regional haze but also causes significant adverse health effects. Epidemiological studies have shown a significant correlation between elevated PM<sub>2.5</sub> levels and premature mortality. Other important health effects associated with PM<sub>2.5</sub> exposure include aggravation of respiratory and cardiovascular disease (as indicated by increased hospital admissions, emergency room visits, absences from school or work and restricted activity days), lung disease, decreased lung function, asthma attacks and certain cardiovascular problems. Individuals particularly sensitive to PM<sub>2.5</sub> exposure include older adults, people with heart and lung disease and children. High levels of PM<sub>2.5</sub> affect animals in ways similar to humans. Ground-level ozone is a serious human and animal health and welfare

threat, causing or contributing to respiratory illnesses and decreased lung function, agricultural crop loss, visible foliar injury to sensitive plant species, and damage to forests, ecosystems and infrastructure.

Emissions of carbon dioxide, a greenhouse gas, will likely also be reduced because the overall consumption of No. 2 and lighter commercial fuel oil should decrease with improved combustion efficiency resulting from the use of No. 2 and lighter commercial fuel oil with a lowered sulfur content of 15 ppm.

Implementation of the maximum allowable sulfur content limit of 500 ppm for No. 2 and lighter commercial fuel oil beginning July 1, 2016, was expected to achieve reductions of SO<sub>2</sub> emissions of at least 21,000 tpy in this Commonwealth. See 43 Pa.B. 806 and 811. The Department expects that the Commonwealth will realize an additional 4,000 tpy of SO<sub>2</sub> emission reductions from implementation of the lower maximum allowable sulfur content limit of 15 ppm for No. 2 and lighter commercial fuel oil. See 43 Pa. B. 806, 807 and 811. While many of these anticipated emission reductions have already been achieved as a result of the marketplace and nearby state and local limits already in place, this final-form rulemaking, if promulgated as a final-form rulemaking and approved by the EPA as a revision to the Commonwealth's SIP, will ensure that the full amount of emission reductions is realized.

Commercial fuel oil users and consumers will benefit financially through lower combustion equipment maintenance costs. According to the United States Energy Information Administration's (EIA) State Energy Profiles, approximately 18% of the households in this Commonwealth consume No. 2 and lighter commercial fuel oil for space heat. Low-sulfur content commercial fuel oil has the potential to improve furnace and oil heat burner combustion efficiency by reducing fouling rates of furnace and oil heat burner heat exchangers and other components. Reduced furnace and oil heat burner fouling rates translate directly into lower vacuum-cleaning costs for fuel oil companies and homeowners by extending the service intervals. Further, the availability of low-sulfur content No. 2 and lighter commercial fuel oil will enable the introduction of highly efficient advanced technology condensing furnaces.

The commercial fuel oil industry will also benefit from having consistent maximum allowable sulfur content limits in both No. 2 and lighter commercial fuel oil and transportation diesel fuel including NRLM and highway transportation diesel fuel. Consistent maximum allowable sulfur content limits will help refinery owners and operators, distributors, carriers and owners and operators of commercial fuel oil and transportation diesel fuel terminals minimize the number of storage tanks and delivery trucks needed. The maximum allowable sulfur content level required in NRLM and highway transportation diesel fuels is already 15 ppm. No. 2 and lighter commercial fuel oil can be combined with NRLM and highway transportation diesel fuel in the same storage tanks and delivery trucks, thus minimizing the number of vehicles needed. Since the maximum allowable sulfur content limit for No. 2 and lighter commercial fuel oil will be consistent Statewide, compliance and recordkeeping will also be simplified for the petroleum refining and distribution companies.

### *Costs and compliance*

This final-form rulemaking applies to the owner and operator of a refinery, pipeline, terminal, distributor, carrier or retail outlet fuel storage facility that produces, conveys, stores or sells No. 2 and lighter commercial fuel oil. The requirements focus on persons or entities that “offer for sale, deliver for use, exchange in trade or permit the use of commercial fuel oil.” These are the suppliers and operators selling to the ultimate consumer.

There are four refineries in the Commonwealth, owned by four different companies. United Refining Company and Monroe Energy, LLC refineries currently produce No. 2 and lighter commercial fuel oil with a sulfur content of 15 ppm or less. The American Refining Group, Inc. (ARG) produces No. 2 and lighter commercial fuel oil with a sulfur content of 15 ppm to be sold to New York, and No. 2 and lighter commercial fuel oil with a sulfur content of less than 500 ppm for north and northwestern counties in this Commonwealth. Philadelphia Energy Solutions (PES) has the ability to produce No. 2 and lighter commercial fuel oil with a maximum sulfur content of 15 ppm and prior to the fires in June 2019, produced most of the No. 2 and lighter commercial fuel oil distributed along the east coast with a sulfur content of 15 ppm or less. A discussion with Philadelphia Air Management Services on September 26, 2019, indicated that PES is currently operating the boilers and wastewater sources, but no refining sources. The facility permit is active and a renewal application is on hold. PES is currently in bankruptcy and is trying to find a buyer. Since PES has an active permit, the refining sources can resume operating or someone could buy the PES facility and operate those sources.

Owners and operators of refineries outside of the Commonwealth will be affected if they supply distributors that sell No. 2 and lighter commercial fuel oil in this Commonwealth. However, maximum allowable sulfur content limits have been established in motor fuels for 30 years, so the industry has the technical capacity to implement the new requirements.

There are 128 fuel oil terminal operations and 684 distributors of petroleum products in this Commonwealth; not all operations handle No. 2 and lighter commercial fuel oil. The terminal operators include those with familiar names from the petroleum industry, including Sunoco and Gulf Oil. Several major distributors also operate terminals, including Buckeye Energy. While the size of distributor operations ranges from large to small, members of the petroleum distribution industry, as a whole, have been regulated for many years. Existing systems to track the quantity and composition of fuel are long standing for purposes of compliance with environmental and tax regulations.

End-users of No. 2 and lighter commercial fuel oil are generally homeowners and those living in rental units. The EIA State Energy Profile estimates that 18% of households in this Commonwealth use No. 2 and lighter commercial fuel oil for home or space heating, water heating, or both.

Market forces and regulations for transportation-related diesel fuels in the United States and internationally are factors affecting this industry, since the use of No. 2 and lighter commercial fuel oil for residential heating is a very small portion of diesel fuel consumption. Upon promulgation of this final-form rulemaking, No. 2 and lighter commercial fuel oil sold or

distributed for use in this Commonwealth will have the same maximum allowable sulfur content limit as NRLM and highway transportation diesel fuel.

The 2008 National Oilheat Research Alliance's "Northeast Heating Oil Assessment," by Hart Energy Consulting, estimated that there would be a 6.3-to-6.8 cent-per-gallon (cpg) incremental production cost for 500 ppm versus 2500 ppm sulfur content home heating oil (No. 2 commercial fuel oil), including capital costs. Incremental production costs were estimated to be as much as 8.9 cpg for 15 ppm sulfur content versus 2500 ppm. However, where refiners have desulfurization capabilities, the incremental cost of producing 15 ppm sulfur versus 2500 ppm sulfur content home heating oil was estimated to be 4.6 cpg. Data showing the cost difference between 500 ppm and 15 ppm sulfur content home heating oil was not found. However, by subtracting the 500 ppm and 15 ppm sulfur content home heating oil costs, the estimated costs will likely be no more than 2.6 cpg ( $8.9 \text{ cpg} - 6.3 \text{ cpg} = 2.6 \text{ cpg}$ ). Note that these are costs to the producers; prices to the ultimate consumer will be influenced by factors additional to the cost of reducing the sulfur content in the No. 2 and lighter commercial fuel oil.

Furnace and oil heat burner maintenance costs for consumers will likely be lower for those that do not already use 15 ppm low-sulfur content No. 2 and lighter commercial fuel oil due to less fouling of their heat exchangers. Decreased fouling improves efficiency of the furnace or oil heat burner, which results in lower fuel usage and longer time periods between cleanings. Although 15 ppm low-sulfur content No. 2 and lighter commercial fuel oil may cost a few cents per gallon more, savings on maintenance costs will help to defray that impact.

#### *Compliance Assistance Plan*

The Department plans to educate and assist the public and regulated community in understanding the requirements and how to comply with them. This will be accomplished through the Department's ongoing compliance assistance program. The Department will also work with the Small Business Assistance Program to aid the owners and operators of facilities less able to handle matters with in-house staff.

#### *Paperwork requirements*

There are no additional paperwork requirements associated with this final-form rulemaking with which industry will need to comply. As in the existing regulation, this final-form rulemaking requires that, beginning with the refinery owner or operator who sells or transfers No. 2 and lighter commercial fuel oil and ending with the ultimate consumer, each time the physical custody of or title to a shipment of No. 2 and lighter commercial fuel oil changes hands, the transferor is required to provide the transferee with an electronic or paper record of the transaction. Each affected person is required to keep the records in electronic or paper format for 2 years. No recordkeeping or reporting is required of ultimate consumers at private residences or apartment complexes and condominiums.

## H. *Pollution Prevention*

The Pollution Prevention Act of 1990 (42 U.S.C.A. §§ 13101—13109) established a National policy that promotes pollution prevention as the preferred means for achieving state environmental protection goals. The Department encourages pollution prevention, which is the reduction or elimination of pollution at its source, through the substitution of environmentally friendly materials, more efficient use of raw materials and the incorporation of energy efficiency strategies. Pollution prevention practices can provide greater environmental protection with greater efficiency because they can result in significant cost savings to facility owners and operators that permanently achieve or move beyond compliance.

This final-form rulemaking will prevent emissions of SO<sub>2</sub> and NO<sub>x</sub> air pollutants by requiring a lower maximum allowable amount of sulfur in No. 2 and lighter commercial fuel oil used in this Commonwealth, thereby reducing regional haze and ambient levels of PM<sub>2.5</sub> in this Commonwealth and throughout the Mid-Atlantic and Northeast states. This final-form rulemaking does not require add-on controls, although existing provisions allow the use of controlled noncompliant fuel if the controlled emissions are equivalent to those obtained with compliant No. 2 and lighter commercial fuel oil.

## I. *Sunset Review*

The Board is not establishing a sunset date for this final-form rulemaking, since it is needed for the Department to carry out its statutory authority. The Department will continue to closely monitor this final-form rulemaking for effectiveness and recommend updates to the Board as necessary.

## J. *Regulatory Review*

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on June 19, 2019, the Department submitted a copy of the notice of proposed rulemaking, published at 49 Pa.B. 3482, to IRRC and to the Chairpersons of the House and Senate Environmental Resources and Energy Committees for review and comment.

Under section 5(c) of the Regulatory Review Act, the IRRC and the House and Senate Committees were provided with copies of the comments received during the public comment period, as well as other documents when requested. In preparing this final-form rulemaking, the Department has considered all comments from IRRC and the public.

Under section 5.1(j.2) of the Regulatory Review Act (71 P.S. § 745.5a(j.2)), on [REDACTED], 2020, this final-form rulemaking was deemed approved by the House and Senate Committees. Under section 5.1(e) of the Regulatory Review Act, IRRC met on [REDACTED], 2020, and approved this final-form rulemaking.

### *K. Findings of the Board*

The Board finds that:

(1) Public notice of proposed rulemaking was given under sections 201 and 202 of the act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§ 1201 and 1202) and regulations promulgated thereunder, 1 Pa. Code §§ 7.1 and 7.2.

(2) At least a 60-day public comment period was provided as required by law and all comments were considered.

(3) This final-form rulemaking does not enlarge the purpose of the proposed rulemaking published at 49 Pa.B. 3482.

(4) These regulations are reasonably necessary and appropriate for administration and enforcement of the authorizing acts identified in Section C of this order.

(5) These regulations are reasonably necessary to address regional haze and visibility impairment and to satisfy related CAA requirements.

### *L. Order of the Board*

The Board, acting under the authorizing statutes, orders that:

(a) The regulations of the Department, 25 Pa. Code Chapter 123, are amended by amending § 123.22 to read as set forth in Annex A, with ellipses referring to the existing text of the regulations.

(b) The Chairperson of the Board shall submit this order and Annex A to the Office of General Counsel and the Office of Attorney General for review and approval as to legality and form, as required by law.

(c) The Chairperson of the Board shall submit this order and Annex A to IRRC and the House and Senate Committees as required by the Regulatory Review Act (71 P.S. §§ 745.1—745.14).

(d) The Chairperson of the Board shall certify this order and Annex A and deposit them with the Legislative Reference Bureau as required by law.

(e) This final-form rulemaking will be submitted to the EPA as a revision to the Pennsylvania SIP.

(f) This order shall take effect immediately upon publication in the *Pennsylvania Bulletin*.

PATRICK McDONNELL,  
*Chairperson*