

As can be seen from the figure, the annual costs start out at less than 1.0 billion dollars in year 2006 and increase during the initial years to about \$3.6 billion in 2010. Thereafter, total annualized costs are projected to continue increasing due to the effects of projected growth in engine sales and fuel consumption. The RIA provides further detail regarding these cost projections.

Future consumption of 15 ppm diesel fuel may be influenced by a potential influx of diesel-powered cars and light trucks into the light-duty fleet. At the present time, virtually all cars and light trucks being sold are gasoline fueled. However, the possibility exists that diesels will become more prevalent in the car and light-duty truck fleet, since automotive companies have announced their desire to increase their sales of diesel cars and light trucks. For the Tier 2 rulemaking, the Agency performed a sensitivity analysis using A.D. Little's "most likely" increased growth scenario of diesel penetration into the light-duty vehicle fleet which culminated in a 9 percent and 24 percent penetration of diesel vehicles in the LDV and LDT markets, respectively, in 2015 (see Tier 2 RIA, Table III.A.-13). Were this scenario to play out, the increased number of diesel-powered cars and light-duty trucks would increase the societal costs (those costs, in total, paid by consumers) for the higher priced diesel fuel because more diesel fuel would be consumed. However, were more diesel vehicles to penetrate the light-duty fleet, less gasoline would be consumed than was estimated in our Tier 2 cost analysis. Also, diesel vehicles tend to get higher fuel economy. As a result, the effect of increased dieselization of the light-duty fleet will likely have little or no impact on the aggregate costs estimated for the standards being finalized in today's action.

#### *E. Cost Effectiveness*

One tool that can be used to assess the value of new standards for heavy-duty vehicles and engines is cost effectiveness, in which the costs incurred to reach the standards are compared to the mass of emission reductions. This analysis results in the calculation of a \$/ton value, the purpose of which is to show that the reductions from the engine and fuel controls being finalized today are cost effective, in comparison to alternative means of control. This analysis involves a comparison of our program not only to past measures, but also to other potential future measures that could be implemented. Both EPA and States have

already adopted numerous control measures, and remaining measures tend to be more expensive than those previously employed. As we and States tend to employ the most cost effective available measures first, more expensive ones must be adopted to achieve further emission reductions.

Comments we received in response to our Notice of Proposed Rulemaking on the subject of our cost effectiveness analysis are addressed in the Response to Comments Document.

#### 1. What Is the Cost Effectiveness of This Program?

We have calculated the cost-effectiveness of our diesel engine/gasoline vehicle/diesel sulfur standards based on two different approaches. The first considers the net present value of all costs incurred and emission reductions generated over the life of a single vehicle meeting our standards. This per-vehicle approach focuses on the cost-effectiveness of the program from the point of view of the vehicles and engines which will be used to meet the new requirements. However, the per-vehicle approach does not capture all of the costs or emission reductions from our diesel engine/gasoline vehicle/diesel sulfur program since it does not account for the use of 15 ppm diesel fuel in current diesel engines. Therefore, we have also calculated a 30-year net present value cost-effectiveness using the net present value of costs and emission reductions for all in-use vehicles over a 30-year time frame. The baseline or point of comparison for this evaluation is the previous set of engine, vehicle, and diesel sulfur standards (in other words, the applicable 2006 model year standards).

As described earlier in the discussion of the cost of this program, the cost of complying with the new standards will decline over time as manufacturing costs are reduced and amortized capital investments are recovered. To show the effect of declining cost in the per-vehicle cost-effectiveness analysis, we have developed both near term and long term cost-effectiveness values. More specifically, these correspond to vehicles sold in years one and six of the vehicle and fuel programs. Chapter VI of the RIA contains a full description of this analysis, and you should look in that document for more details of the results summarized here.

The 30-year net present value approach to calculating the cost-effectiveness of our program involves the net present value of all nationwide emission reductions and costs for a 30 year period beginning with the start of the diesel fuel sulfur program and

introduction of model year 2007 vehicles and engines in year 2006. This 30-year timeframe captures both the early period of the program when very few vehicles that meet our standards will be in the fleet, and the later period when essentially all vehicles in the fleet will meet the new standards. We have calculated the 30-year net present value cost-effectiveness using the net present value of the nationwide emission reductions and costs for each calendar year. These emission reductions and costs are given for every calendar year in the RIA, in addition to details of the methodology we used to calculate the 30-year net present value cost-effectiveness.

Our per-vehicle and 30-year net present value cost-effectiveness values are given in Tables V.E-1 and V.E-2. Table V.E-1 summarizes the per-vehicle, net present value cost-effectiveness results for our diesel engine/gasoline vehicle/diesel sulfur standards using sales weighted averages of the costs (both near term and long term) and emission reductions of the various vehicle and engine classes affected. Table V.E-2 provides the same information from the program 30-year net present value perspective. It is based on the net present value of the 30 year stream of vehicle and fuel costs and NMHC+ NO<sub>x</sub> and PM emission reductions, resulting in the 30-year net present value cost-effectiveness. Diesel fuel costs applicable to diesel engines have been divided equally between the adsorber and trap, since 15 ppm diesel fuel is intended to enable all technologies to meet our standards. In addition, since the trap produces reductions in PM and also operates as an enabling device for the NO<sub>x</sub> adsorber, we have divided the total trap costs equally between compliance with the PM standard and compliance with the NO<sub>x</sub> and NMHC standards.

Tables V.E-1 and V.E-2 also display cost-effectiveness values based on two approaches to account for the reductions in SO<sub>2</sub> emissions associated with the reduction in diesel fuel sulfur. While these reductions are not central to the program and are therefore not displayed with their own cost-effectiveness, they do represent real emission reductions due to our program. The first set of cost-effectiveness numbers in the tables simply ignores these reductions and bases the cost-effectiveness on only the NO<sub>x</sub>, NMHC, and PM emission reductions from our program. The second set accounts for these ancillary reductions by crediting some of the cost of the program to SO<sub>2</sub>. The amount of cost allocated to SO<sub>2</sub> is based on the cost-effectiveness of SO<sub>2</sub>

emission reductions that could be obtained from alternative, potential future EPA programs. The SO<sub>2</sub> credit was applied only to the PM calculation, since SO<sub>2</sub> reductions are primarily a means to reduce ambient PM concentrations.

TABLE V.E-1.—PER-ENGINE<sup>a</sup> COST EFFECTIVENESS OF THE STANDARDS FOR 2007 AND LATER MY VEHICLES

Pollutants	Discounted lifetime cost effectiveness per ton	Discounted lifetime cost effectiveness per ton with SO <sub>2</sub> credit <sup>b</sup>
Near-term costs:		
NO <sub>x</sub> +NMHC .....	\$2,125	\$2,125
PM .....	14,237	7,599
Long-term costs:		
NO <sub>x</sub> +NMHC .....	1,621	1,621
PM .....	11,340	4,701

<sup>a</sup> As described above, per-engine cost effectiveness does not include any costs or benefits from the existing, pre-control, fleet of vehicles that would use the 15 ppm diesel fuel.

<sup>b</sup> \$446 credited to SO<sub>2</sub> (at \$4800/ton) for PM cost effectiveness.

TABLE V.E-2.—30-YEAR NET PRESENT VALUE<sup>a</sup> COST EFFECTIVENESS OF THE STANDARDS

	30-year n.p.v. cost effectiveness per ton	30-year n.p.v. cost effectiveness per ton with SO <sub>2</sub> credit <sup>b</sup>
NO <sub>x</sub> +NMHC .....	\$2,149	\$2,149
PM .....	13,607	4,195

<sup>a</sup> This cost effectiveness methodology reflects the total fuel costs incurred in the early years of the program when the fleet is transitioning from pre-control to post-control diesel vehicles. In 2007 <10% of highway diesel fuel is anticipated to be consumed by 2007 MY vehicles. By 2012 this increases to >50% for 2007 and later MY vehicles.

<sup>b</sup> \$7.1 billion credited to SO<sub>2</sub> (at \$4800/ton).

## 2. Comparison With Other Means of Reducing Emissions

In comparison with other mobile source control programs, we believe that our program represents a cost effective strategy for generating substantial NO<sub>x</sub>, NMHC, and PM reductions. This can be seen by comparing the cost effectiveness of today's program with a number of mobile source standards that EPA has adopted in the past. Table V.E-3 summarizes the cost effectiveness of several past EPA actions for NO<sub>x</sub>+NMHC. Table V.E-4 summarizes the cost effectiveness of several past EPA actions for PM.

TABLE V.E-3.—COST EFFECTIVENESS OF PREVIOUS MOBILE SOURCE PROGRAMS FOR NO<sub>x</sub>+NMHC

Program	\$/ton
Tier 2 vehicle/gasoline sulfur .....	1,340–2,260
2004 Highway HD diesel .....	212–414
Off-highway diesel engine .....	425–675
Tier 1 vehicle .....	2,054–2,792
NLEV .....	1,930
Marine SI engines .....	1,171–1,846
On-board diagnostics .....	2,313
Marine CI engines .....	24–176

**Note:** Costs adjusted to 1999 dollars.

TABLE V.E-4.—COST EFFECTIVENESS OF PREVIOUS MOBILE SOURCE PROGRAMS FOR PM

Program	\$/ton
Marine CI engines .....	5222–3881
1996 urban bus .....	12,264–19,622
Urban bus retrofit/rebuild .....	30,251
1994 highway HD diesel .....	20,900–24,467

**Note:** Costs adjusted to 1999 dollars.

We can see from these tables that the cost effectiveness of our diesel engine/gasoline vehicle/diesel sulfur standards falls within the range of these other programs for both NO<sub>x</sub>+NMHC and PM. Our program overlaps the range of the recently promulgated standards for Tier 2 light-duty vehicles and gasoline sulfur shown in Table V.E-3. Our program also overlaps the cost-effectiveness of past programs for PM. It is true that some previous programs have been more cost efficient than the program we are finalizing today. However, it should be expected that the next generation of standards will be more expensive than the last, since the least costly means for reducing emissions is generally pursued first.

In evaluating the cost effectiveness of our diesel engine/gasoline vehicle/diesel sulfur program, we also considered whether the new standards are cost effective in comparison with possible stationary source controls. In the context of the Agency's rulemaking which would have revised the ozone and PM NAAQS,<sup>191</sup> the Agency compiled a list of additional known technologies that could be considered in devising new emission reductions

<sup>191</sup> This rulemaking was remanded to EPA by the D.C. Circuit Court on May 14, 1999. However, the analyses completed in support of that rulemaking are still relevant, since they were designed to investigate the cost effectiveness of a wide variety of potential future emission control strategies. An appeal is currently pending before the U.S. Supreme Court.

strategies.<sup>192</sup> Through this broad review, over 50 technologies were identified that could reduce NO<sub>x</sub>, VOC, or PM. The cost effectiveness of these technologies averaged approximately \$5,000/ton for VOC, \$13,000/ton for NO<sub>x</sub>, and \$40,000/ton for PM. Although a \$10,000/ton limit was actually used in the air quality analysis presented in the NAAQS revisions rule, these values clearly indicate that, not only are future emission control strategies likely to be more expensive (less cost effective) than past strategies, but the cost effectiveness of our program falls well below the average of those choices, and is near the lower end of the range of potential future strategies.

In summary, we believe that the weight of the evidence from alternative means of providing substantial NO<sub>x</sub> + NMHC and PM emission reductions indicates that our diesel engine/gasoline vehicle/diesel sulfur program is cost effective relative to other means of achieving air quality improvements. We believe this is true from the perspective of other mobile source control programs and from the perspective of other stationary source technologies that might be considered.

## F. Does the Value of the Benefits Outweigh the Cost of the Standards?

While EPA uses relative cost-effectiveness as the principal economic policy criterion for these standards, further insight regarding the merits of the standards can be provided by benefit-cost analysis. The purpose of this section is to summarize the methods we used and results we obtained in conducting an analysis of the economic benefits of the HD Engine/Diesel Fuel program, and to compare these economic benefits with the estimated costs of the rule. In summary, the results of our analysis indicate that the economic benefits of the HD Engine/Diesel Fuel standards will exceed the costs of meeting the standards. The annual estimated benefits we were able to quantify were \$70.4 billion (1999\$).

### 1. What Was Our Overall Approach to the Benefit-Cost Analysis?

The basic question we sought to answer in the benefit-cost analysis was, "What are the net yearly economic benefits to society of the reduction in mobile source emissions likely to be

<sup>192</sup> Regulatory Impact Analyses for the Particulate Matter and Ozone National Ambient Air Quality Standards and Proposed Regional Haze Rule," Appendix B, "Summary of control measures in the PM, regional haze, and ozone partial attainment analyses." Innovative Strategies and Economics Group, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, NC, July 17, 1997.

achieved by the final HD Engine/Diesel Fuel program?" In designing an analysis to address this question, we selected a future year for analysis (2030) that is representative of full-implementation of the program (i.e., when the US heavy-duty truck fleet is composed of virtually only compliant heavy-duty vehicles). We also adopted an analytical structure and sequence similar to that used in the "section 812 studies" to estimate the total benefits and costs of the full Clean Air Act.<sup>193</sup> Moreover, we used many of the same models and assumptions used in the section 812 studies as well as other Regulatory Impact Analyses (RIAs) prepared by the Office of Air and Radiation. One difference from previous RIAs, however, is that for particulate matter air quality modeling we used the Regulatory Modeling System for Aerosols and Deposition (REMSAD) model. This model was used in the most recent section 812 study to model air quality in the West. By adopting the major design elements, models, and assumptions developed for the section 812 studies and other RIAs, we have largely relied on methods which have already received extensive review by the independent Science Advisory Board (SAB), by the public, and by other federal agencies.

## 2. What Are the Significant Limitations of the Benefit-Cost Analysis?

Every benefit-cost analysis examining the potential effects of a change in environmental protection requirements is limited to some extent by data gaps, limitations in model capabilities (such as geographic coverage), and uncertainties in the underlying scientific and economic studies used to configure the benefit and cost models. Deficiencies in the scientific literature often result in the inability to estimate changes in health and environmental effects, such as potential increases in premature mortality associated with increased exposure to carbon monoxide. Deficiencies in the economics literature often result in the inability to assign economic values even to those health and environmental outcomes which can be quantified. While these general uncertainties in the underlying scientific and economics literatures are discussed in detail in the RIA and its supporting documents and references, the key uncertainties which have a

bearing on the results of the benefit-cost analysis of today's action are the following:

- The exclusion of potentially significant benefit categories (e.g., health and ecological benefits of reduction in hazardous air pollutants emissions);
- Errors in measurement and projection for variables such as population growth;
- Uncertainties in the estimation of future year emissions inventories and air quality;
- Uncertainties associated with the extrapolation of air quality monitoring data to some unmonitored areas required to better capture the effects of the standards on the affected population;
- Variability in the estimated relationships of health and welfare effects to changes in pollutant concentrations; and
- Uncertainties associated with the effect of potential future actions to limit emissions.

Despite these uncertainties, we believe the benefit-cost analysis provides a reasonable indication of the expected economic benefits of the HD Engine/Diesel Fuel program in 2030 under a set of assumptions. For the final HD Engine/Diesel Fuel benefit analysis, we adopt an approach similar to the Tier 2/Gasoline Sulfur RIA and the section 812 study. We first present an estimate for a primary set of benefit endpoints followed by a presentation of alternative calculations of key health and welfare endpoints to characterize uncertainty in this primary set.

One key area of uncertainty is the value of a statistical life (VSL) for risk reductions in mortality. The adoption of a value for the projected reduction in the risk of premature mortality is the subject of continuing discussion within the economic and public policy analysis community. There is general agreement that the value to an individual of a reduction in mortality risk tends to vary based on several factors, including the age of the individual, the type of risk, the level of control the individual has over the risk, the individual's attitude toward risk, and the health status of the individual. Age in particular may be an important difference between populations affected by air pollution mortality risks and populations affected by workplace risks. Premature mortality risks from air pollution tend to affect the very old more than the working age population. As such, any adjustments to VSL for age differences may have a large impact on total benefits. However, EPA prefers not to draw distinctions in the monetary value assigned to the lives

saved even if they differ in age, health status, socioeconomic status, gender or other characteristic of the adult population.

In the recent Tier 2/Gasoline Sulfur benefits analysis, we employed a value of statistical life years (VSLY) approach developed for the Section 812 studies in exploring the impact of age on VSL. However, since these earlier analyses were completed, the SAB Environmental Economics Advisory Committee (EEAC) issued a new advisory report which identifies significant additional limitations in this method. Specifically, the SAB EEAC notes that "inferring the value of a statistical life year, however, requires assumptions about the discount rate and about the time path of expected utility of consumption" (EPA-SAB-EEAC-00-013). They also note that "the theoretically appropriate method is to calculate [willingness to pay (WTP)] for individuals whose ages correspond to those of the affected population, and that it is preferable to base these calculations on empirical estimates of WTP by age."

SAB advised that the EPA "continue to use a wage-risk-based VSL as its primary estimate, including appropriate sensitivity analyses to reflect the uncertainty of these estimates," and that "the only risk characteristic for which adjustments to the VSL can be made is the timing of the risk" (EPA-SAB-EEAC-00-013). In developing our primary estimate of the benefits of premature mortality reductions, we have appropriately discounted over the lag period between exposure and premature mortality. However, an empirical basis that meets the SAB's standards of reliability for adjusting the current \$6 million VSL for many of these factors does not yet exist. A discussion of these factors is contained in the RIA and supporting documents. EPA recognizes the need for additional research by the scientific community to develop additional empirical support for adjustments to VSL for the factors mentioned above.

In accordance with the SAB advice, we use the VSL in our primary estimate and present alternative calculations of adjustment for age and other factors. Specifically, several studies conducted by Jones-Lee, et al. (1985, 1989, 1993) found a significant effect of age on the value of mortality risk reductions expressed by citizens in the United Kingdom. The results are supported by a recent analysis which asked samples of Canadian residents their values for reductions in mortality risk (Krupnick *et al.*, 2000). As alternative calculations, we apply the ratios based on the Jones-

<sup>193</sup> The section 812 studies include: (1) US EPA, Report to Congress: The Benefits and Costs of the Clean Air Act, 1970 to 1990, October 1997 (also known as the "Section 812 Retrospective Report"); and (2) the first in the ongoing series of prospective studies estimating the total costs and benefits of the Clean Air Act (see EPA report number: EPA-410-R-99-001, November 1999).

Lee, *et al.* (1989, 1993) studies to the estimated premature mortalities within the appropriate age groups to provide alternative age-adjusted estimates of the value of avoided premature mortalities.

In the same way, the presentation of the other alternative calculations for certain endpoints seeks to demonstrate how much the overall benefit estimate might vary based on the value EPA has given to a parameter (which has uncertainty associated with it) underlying the estimates for human health and environmental effect incidence and the economic valuation of those effects. These alternative calculations represent conditions that might occur; however, EPA has selected the best values supported by current scientific literature for use in the primary estimate. The alternate calculations include the following:

- Estimating PM-related premature mortality benefits based on different concentration-response (C-R) function estimates;
- Value of avoided premature mortality incidences based on VSLY;
- Consideration of reversals in chronic bronchitis treated as lowest severity cases;
- Estimate of ozone-related chronic asthma;<sup>194</sup>
- Value of visibility changes in all Federal Class I areas;
- Value of visibility changes in US residential areas;
- Value of reduced household soiling damage;
- Alternative sensitivities of crops to ozone exposure from National Crop Loss Assessment Network estimates; and
- Avoided costs of reducing nitrogen loadings in three case study eastern estuaries and nine other eastern estuaries.

Unfortunately, it is not possible to combine all of the assumptions used in the alternate calculations to arrive at different total benefit estimates because, it is highly unlikely that the selected combination of alternative values would all occur simultaneously. Therefore, it is better to consider each alternative calculation individually to assess the sensitivity of total benefits to individual assumptions. For instance, estimating PM-related premature mortality benefits based on different concentration-response functions may be an important uncertainty. Specifically, the Harvard Six Cities study by Dockery *et al.* (1993) of the relationship between PM concentration and premature mortality

is a plausible alternative to the American Cancer Society (ACS)/Krewski *et al.* (2000) study used for the primary estimate of benefits. The SAB has noted that “the study had better monitoring with less measurement error than did most other studies” (EPA-SAB-COUNCIL-ADV-99-012, 1999). However, the Dockery *et al.* study had a more limited geographic scope (and a smaller study population) than the ACS/Krewski *et al.* study and the ACS/Krewski *et al.* study appears more likely to mitigate a key source of potential confounding. The Dockery *et al.* study did cover a broader age category (25 and older compared to 30 and older in the ACS study) and followed the cohort for a longer period (15 years compared to 8 years in the ACS study). For these reasons, the Dockery *et al.* study is considered to be a plausible alternative estimate of the avoided premature mortality incidences associated with this final rule. The alternative estimate for mortality can be substituted for the valuation component in our primary estimate of mortality benefits to observe how the net benefits of the program may be influenced by this assumption.

In addition to the estimate for the primary set of endpoints and alternative calculations of benefits, our RIA also presents an appendix with supplemental benefit estimates and sensitivity analyses of other key parameters in the benefits analysis that have greater uncertainty surrounding them due to limitations in the scientific literature. The following sensitivity analyses include alternative income elasticities of willingness to pay;<sup>195</sup> alternative discount rates;<sup>196</sup> alternative PM exposure lags preceding mortality; threshold analysis for PM mortality;<sup>197</sup> and other analyses.

<sup>195</sup> Income elasticity of WTP characterizes the relationship between changes in real income and changes in the WTP for a particular commodity. Income elasticity of WTP is measured as the percentage change in WTP for a one percent change in real income. For example, an income elasticity of 0.5 implies that a 10 percent increase in real income would lead to a 5 percent increase in WTP.

<sup>196</sup> The choice of a discount rate, and its associated conceptual basis, is a topic of ongoing discussion within the federal government. EPA adopted a 3 percent discount rate for its primary analysis in this case to reflect reliance on a “social rate of time preference” discounting concept. We have also calculated benefits and costs using a 7 percent rate consistent with an “opportunity cost of capital” concept to reflect the time value of resources directed to meet regulatory requirements. In this case, the benefit and cost estimates were not significantly affected by the choice of discount rate. Further discussion of this topic appears in EPA’s Guidelines for Preparing Economic Analyses (in press).

<sup>197</sup> The SAB has advised EPA that there is no current scientific basis for selecting a threshold for PM-related health effects considered in this analysis (EPA-SAB-Council-ADV-99-012, 1999).

Even with our efforts to fully disclose the uncertainty in our estimate, this uncertainty presentation method does not provide a definitive or complete picture of the true range of monetized benefits estimates. The set of alternative calculations is only representative of those benefits that we were able to quantify and monetize.

### 3. How Has the Benefit-Cost Analysis Changed From Proposal?

No quantitative benefits analysis was conducted for the proposal, although we outlined the methodology to be used for the final rule analysis. We summarized and responded to public comment regarding the methods in the Summary and Analysis of Comment document. Moreover, we have improved the methods that were presented at proposal. For the benefits assessment for the final rule, EPA updated the C-R functions for health endpoints (*e.g.*, Krewski *et al.*, 2000), updated the emissions inventory, and presented air quality information regarding urban and residential visibility. For the air quality inputs to the benefits analysis, we used the REMSAD model which offers improved chemistry, resolution, and other capabilities over the Source-Receptor Matrix discussed in the proposal. The model’s performance, including uncertainties, are discussed elsewhere in the RIA and technical support documents. In addition, we also updated our presentations of monetary benefits of the reduced premature mortality based on advice from the SAB.<sup>198</sup> All of the changes made since the proposal serve to improve the analysis.

### 4. What Are the Benefits in the Years Leading up to 2030?

The HD Engine/Diesel Fuel program has various cost and emission related components, as described earlier in this section. These components would begin at various times and in some cases would phase in over time. This means that during the early years of the program there would not be a consistent match between cost and benefits. This is especially true for the vehicle control portions of the program, where the full vehicle cost would be incurred at the time of vehicle purchase, while the fuel cost along with the emission reductions and benefits resulting from all these costs would occur throughout the lifetime of the vehicle. Because of this

<sup>198</sup> Full documentation of the SAB advice can be found at their website ([www.epa.gov/sab](http://www.epa.gov/sab)) or in the docket under the following reference: EPA-SAB-EEAC-00-013, July 27, 2000. An SAB Report on EPA’s White Paper Valuing the Benefits of Fatal Cancer Risk Reduction.

<sup>194</sup> McDonnell, W.F., D.E. Abbey, N.Nishino, M.D. Lebowitz. Long-term Ambient Ozone Concentration and the Incidence of Asthma in Nonsmoking Adults: The Ahsmog Study. Environmental Research. A:80, 110–121. 1999.

inconsistency and our desire to more appropriately match the costs and emission reductions of our program, our analysis uses a future year when the fleet is nearly fully turned over (2030).

In the years before 2030, the benefits from the HD Engine/Diesel Fuel program will be less than those estimated here, because the compliant heavy-duty fleet will not be fully phased in. Annualized costs, on the other hand, reach nearly their full value within a few years of program initiation (once all phase-ins are completed). This can be seen by comparing the anticipated emission reductions described earlier in section II.D with the aggregate costs of section V.E. Thus, a benefit-cost ratio computed for the earlier years of the program would be expected to be lower than a ratio based on our 2030 analysis. On the other hand, since the estimated benefits are more than ten times the costs in 2030, the emission reduction and cost trends suggest that it is likely that annual benefits would exceed costs from a time early in the life of the program.<sup>199</sup>

Furthermore, to the extent that a lower ratio of benefits to costs early in the program is the result of the mismatch of costs and benefits in time, a simple analysis of an individual year would be misleading. A more appropriate means of capturing the impacts of timing differences in benefits and costs would be to produce a net present value comparison of the costs and benefits over some period of years (an approach analogous to the aggregate

cost effectiveness presented in section V.F). Unfortunately, while this is relatively straight-forward for the costs, it is currently not feasible to do a multi-year analysis of the benefits as this would require a significant amount of air quality modeling to capture each year.

5. What Were the Results of the Benefit-Cost Analysis?

The benefit-cost analysis for the HD Engine/Diesel Fuel program reflects a single year "snapshot" of the yearly benefits and costs expected to be realized once the standards have been fully implemented and non-compliant vehicles have all been retired. As discussed in section V.F-4, the benefit-cost ratio would be expected to be lower than the results calculated here in the early years of the program.

Table V.F-1 presents EPA's primary estimate of the benefits of the rule, both the estimated reductions in incidences and the estimated economic value of those incidence reductions. In interpreting the results, it is important to keep in mind the limited set of effects we are able to monetize. Specifically, the table lists the avoided incidences of individual health and environmental effects, the pollutant associated with each of these endpoints, and the estimated economic value of those avoided incidences. For several environmental effects such as visibility, the concept of incidences or cases does not apply as it does for health effects; thus, for these categories economic

values are applied directly to air quality conditions. As the table indicates, we estimate that the HD Engine/Diesel Fuel program will produce about 5,500 fewer cases of chronic bronchitis, and we also see significant improvements in minor restricted activity days (with an estimated 9,838,500 fewer cases). Our estimate also incorporates significant reductions in impacts on children's health, showing reductions of 17,600 cases of acute bronchitis, 192,900 fewer cases of lower respiratory symptoms, and 193,400 fewer cases of upper respiratory symptoms in asthmatic children each year. In addition, today's rule is estimated to reduce 361,400 incidents of asthma attacks each year in asthmatics of all ages from reduced exposure to ozone and particles. Asthma is the most prevalent chronic disease among children and currently affects over seven percent of children under 18 years of age.

Total monetized benefits, however, are driven primarily by the estimated 8,300 fewer premature fatalities each year, which account for almost 89 percent of total benefits. We assume for this analysis that some of the incidences of premature mortality related to PM exposures occur in a distributed fashion over the five years following exposure. To take this into account in the valuation of reductions in premature mortality, we apply an annual three percent discount rate to the value of premature mortality occurring in years after our analysis year.

TABLE V.F-1.—EPA PRIMARY ESTIMATE OF THE ANNUAL QUANTIFIED AND MONETIZED BENEFITS ASSOCIATED WITH IMPROVED AIR QUALITY RESULTING FROM THE HD ENGINE/DIESEL FUEL RULE IN 2030<sup>A</sup>

Endpoint	Pollutant	Avoided incidence <sup>A C</sup> (cases/year)	Monetary benefits <sup>A D</sup> (millions 1999\$)
Premature mortality <sup>B</sup> (adults, ages 30 and over) .....	PM <sup>B</sup> .....	8,300	\$62,580
Chronic bronchitis .....	PM .....	5,500	\$2,430
Hospital Admissions from Respiratory Causes .....	Ozone and PM .....	4,100	\$60
Hospital Admissions from Cardiovascular Causes .....	Ozone and PM .....	3,000	\$50
Emergency Room Visits for Asthma .....	Ozone and PM .....	2,400	<\$5
Acute bronchitis (children, ages 8-12) .....	PM .....	17,600	<\$5
Upper respiratory symptoms (asthmatic children, ages 9-11) .....	PM .....	193,400	\$10
Lower respiratory symptoms (children, ages 7-14) .....	PM .....	192,900	<\$5
Asthma attacks (asthmatics, all ages) <sup>E</sup> .....	Ozone and PM .....	361,400	B <sub>a</sub>
Work loss days (adults, ages 18-65) .....	PM .....	1,539,400	\$160
Minor restricted activity days (adults, ages 18-65) .....	Ozone and PM .....	9,838,500	\$530
(adjusted to exclude asthma attacks).			
Other health effects <sup>E</sup> .....	Ozone, PM, CO, NMHC .....	U <sub>1</sub> +U <sub>2</sub> +U <sub>3</sub> +U <sub>4</sub>	B <sub>1</sub> +B <sub>2</sub> +B <sub>3</sub> +B <sub>4</sub>
Decreased worker productivity .....	Ozone .....		\$140
Recreational visibility (86 Class I Areas) .....	PM .....		\$3,260
Residential visibility .....	PM .....		B <sub>5</sub>
Household soiling damage .....	PM .....		B <sub>6</sub>
Materials damage .....	PM .....		B <sub>7</sub>
Nitrogen Deposition to Estuaries .....	Nitrogen .....		B <sub>8</sub>
Premature mortality <sup>B</sup> (adults, ages 30 and over) .....	PM <sup>B</sup> .....	8,300	\$62,580

<sup>199</sup> While emission reduction trends give a general indication of the likely trends in the benefits, there are sufficient non-linearities and interactions

among pollutants in the atmospheric chemistry used in our modeling that it is not possible to attempt a quantitative estimate of the benefits

simply from changes in the inventories in years that were not fully modeled.

TABLE V.F-1.—EPA PRIMARY ESTIMATE OF THE ANNUAL QUANTIFIED AND MONETIZED BENEFITS ASSOCIATED WITH IMPROVED AIR QUALITY RESULTING FROM THE HD ENGINE/DIESEL FUEL RULE IN 2030<sup>A</sup>—Continued

Endpoint	Pollutant	Avoided incidence <sup>A+C</sup> (cases/year)	Monetary benefits <sup>A+D</sup> (millions 1999\$)
Chronic bronchitis .....	PM .....	5,500	\$2,430
Hospital Admissions from Respiratory Causes .....	Ozone and PM .....	4,100	\$60
Hospital Admissions from Cardiovascular Causes .....	Ozone and PM .....	3,000	\$50
Emergency Room Visits for Asthma .....	Ozone and PM .....	2,400	<\$5
Acute bronchitis (children, ages 8–12) .....	PM .....	17,600	<\$5
Upper respiratory symptoms (asthmatic children, ages 9–11) .....	PM .....	193,400	\$10
Lower respiratory symptoms (children, ages 7–14) .....	PM .....	192,900	<\$5
Asthma attacks (asthmatics, all ages) <sup>E</sup> .....	Ozone and PM .....	361,400	B <sub>a</sub>
Work loss days (adults, ages 18–65) .....	PM .....	1,539,400	\$160
Minor restricted activity days (adults, ages 18–65) .....	Ozone and PM .....	9,838,500	\$530
(adjusted to exclude asthma attacks) .....	.....	.....	.....
Other health effects <sup>E</sup> .....	Ozone and PM .....	U <sub>1</sub> +U <sub>2</sub> +U <sub>3</sub> +U <sub>4</sub>	B <sub>1</sub> +B <sub>2</sub> +B <sub>3</sub> +B <sub>4</sub>
.....	CO, NMHC .....	.....	.....
Decreased worker productivity .....	Ozone .....	.....	\$140
Agricultural crop damage (6 crops) .....	Ozone .....	.....	\$1,120
Commercial forest damage, (6 species in Eastern US) .....	Ozone .....	.....	B <sub>9</sub>
Commercial forest damage, other .....	Ozone .....	.....	B <sub>10</sub>
Other welfare effects <sup>E</sup> .....	Ozone, PM .....	.....	B <sub>11</sub> +B <sub>12</sub> +B <sub>13</sub> +B <sub>14</sub>
.....	CO, NMHC .....	.....	.....
Monetized Total <sup>F</sup> .....	.....	.....	\$70,360+B

Notes:

<sup>A</sup> Ozone-related benefits are only calculated for the Eastern US due to unavailability of reliable modeled ozone concentrations in the Western US, thus underestimating national ozone-related benefits. See RIA and technical support documents for details.

<sup>B</sup> Premature mortality associated with ozone is not separately included in this analysis. It is assumed that the ACS/Krewski, *et al.* (2000) C–R function for premature mortality captures both PM mortality benefits and any mortality benefits associated with other air pollutants. Also note that the valuation assumes the 5 year distributed lag structure described earlier and a 3 percent discount rate over that lag period.

<sup>C</sup> Incidences are rounded to the nearest 100.

<sup>D</sup> Dollar values are rounded to the nearest 10 million. Monetary benefits account for growth in real GDP per capita between 1990 and 2030.

<sup>E</sup> The U<sub>i</sub> are the incidences and the B<sub>i</sub> are the values for the unquantified category *i*. For some categories such as asthma attacks, we were able to quantify the reduction in incidence, but we present the monetization as an alternative calculation. A detailed listing of unquantified PM, ozone, CO, and NMHC related health and welfare effects is provided in Table V.F–2. NMHC shown here are also hazardous air pollutants listed in the Clean Air Act.

<sup>F</sup> B is equal to the sum of all unmonetized categories, *i.e.* B<sub>a</sub>+B<sub>1</sub>+B<sub>2</sub>+...+B<sub>n</sub>.

This table also indicates with a “B” those additional health and environmental benefits which could not be expressed in quantitative incidence and/or economic value terms. A full listing of the benefit categories that could not be quantified or monetized in our estimate are provided in Table V.F–2. For instance, visibility is expected to improve in all areas of the country, with the largest improvements occurring in heavily populated residential areas (*e.g.*, half of the urban areas show an

improvement of 0.5 deciviews or more). However, due to limitations on sources to value these effects, we include a “B” in the primary estimate table for this category. Likewise, the HD Engine/Diesel Fuel rule will also provide progress for some estuaries to meet their goals for reducing nitrogen deposition (*e.g.*, nitrogen loadings for the Albemarle/Pamlico Sound are reduced by 24 percent of their reductions goal), however, this endpoint is also displayed with a “B” in the table. A full

appreciation of the overall economic consequences of the HD Engine/Diesel Fuel standards requires consideration of all benefits and costs expected to result from the new standards, not just those benefits and costs which could be expressed here in dollar terms.

In summary, EPA’s primary estimate of the benefits of the HD Engine/Diesel Fuel rule is \$70.4 billion in 2030. This estimate accounts for growth in real gross domestic product (GDP) per capita between 1990 and 2030.

TABLE V.F-2.—ADDITIONAL, NON-MONETIZED BENEFITS OF THE HD ENGINE/DIESEL FUEL STANDARDS

Pollutant	Unquantified effects
Ozone Health .....	Premature mortality; <sup>A</sup> Increased airway responsiveness to stimuli; Inflammation in the lung; Chronic respiratory damage; Premature aging of the lungs; Acute inflammation and respiratory cell damage; Increased susceptibility to respiratory infection; and Non-asthma respiratory emergency room visits.
Ozone Welfare .....	Decreased yields for commercial forests; Decreased yields for fruits and vegetables; Decreased yields for non-commercial crops; Damage to urban ornamental plants; Impacts on recreational demand from damaged forest aesthetics; and Damage to ecosystem functions.
PM Health .....	Infant mortality; Low birth weight; Changes in pulmonary function; Chronic respiratory diseases other than chronic bronchitis; and Morphological changes.
PM Welfare .....	Visibility in non-class I areas; Soiling and materials damage; and Damage to ecosystem functions.
Nitrogen and Sulfate Deposition Welfare.	Impacts of acidic sulfate and nitrate deposition on commercial forests; Impacts of acidic deposition to commercial freshwater fishing; Impacts of acidic deposition to recreation in terrestrial ecosystems; Reduced existence values for currently healthy ecosystems; Impacts of nitrogen deposition on commercial fishing, agriculture, and forests; Impacts of nitrogen deposition on recreation in estuarine ecosystems; and Damage to ecosystem functions.

TABLE V.F-2.—ADDITIONAL, NON-MONETIZED BENEFITS OF THE HD ENGINE/DIESEL FUEL STANDARDS—Continued

Pollutant	Unquantified effects
CO Health .....	Premature mortality; <sup>A</sup> Behavioral effects; Hospital admissions—respiratory, cardiovascular, and other; Other cardiovascular effects; Developmental effects; Decreased time to onset of angina; and Non-asthma respiratory ER visits.
NMHC Health .....	Cancer (benzene, 1,3-butadiene, formaldehyde, acetaldehyde); <sup>B</sup> Anemia (benzene); Disruption of production of blood components (benzene); Reduction in the number of blood platelets (benzene); Excessive bone marrow formation (benzene); Depression of lymphocyte counts (benzene); Reproductive and developmental effects (1,3-butadiene); Irritation of eyes and mucus membranes (formaldehyde); Respiratory irritation (formaldehyde); Asthma attacks in asthmatics (formaldehyde); Asthma-like symptoms in non-asthmatics (formaldehyde); Irritation of the eyes, skin, and respiratory tract (acetaldehyde); and Upper respiratory tract irritation and congestion (acrolein).
NMHC Welfare .....	Direct toxic effects to animals; Bioaccumulation in the food chain; and Damage to ecosystem function.

<sup>A</sup> Premature mortality associated with ozone and carbon monoxide is not separately included in this analysis. In this analysis, we assume that the ACS/Krewski, *et al.* C-R function for premature mortality captures both PM mortality benefits and any mortality benefits associated with other air pollutants.

<sup>B</sup> Non-methane hydrocarbons related to this rule are also hazardous air pollutants listed in the Clean Air Act.

In addition, in analyzing the present rule, we recognized that the benefits estimates were subject to a number of uncertainties with other parameters. In Table V.F-3 we present key alternatives to assumptions regarding individual elements of the benefits analysis and their effect on the primary estimate of

benefits. This table also displays some assumptions that can be made to value some of the categories that are indicated with a “B” in the primary estimate. For example, this table can be used to answer questions like, “What would total benefits be if we were to use the ACS/Krewski, *et al.* regionally adjusted

PM<sub>2.5</sub> C-R function to estimate avoided premature mortality?” This table is not meant to be comprehensive but to identify the impact of key issues identified by EPA or in public comment as affecting the total benefits estimation.

TABLE V.F-3. KEY ALTERNATIVE BENEFITS CALCULATIONS FOR THE HD ENGINE/DIESEL FUEL RULE IN 2030<sup>A</sup>

Description of alternative	Avoided incidences	Impact on primary benefits estimate adjusted for growth in real income (million 1999\$)	
Alternative Concentration-Response Functions for PM-related Premature Mortality			
1. Krewski/ACS Study Regional Adjustment Model <sup>B</sup> .....	9,400	+\$7,370 (+10.5%)	
2. Pope/ACS Study <sup>C</sup> .....	9,900	+12,780 (+18.2%)	
3. Krewski/Harvard Six-city Study <sup>D</sup> .....	24,200	+\$118,500 (+168.4%)	
Alternative Methods for Valuing Reductions in Incidences of PM-related Premature Mortality			
Value of avoided premature mortality incidences based on age-specific VSL .....	Jones-Lee (1989) <sup>E</sup>	8,300	-\$28,510 (-40.5%)
	Jones-Lee (1993) <sup>F</sup>	8,300	-\$6,820 (-10.0%)

<sup>A</sup> Section VII-F of the RIA provides complete information about the estimates in this table.

<sup>B</sup> This C-R function is included as a reasonable specification to explore the impact of adjustments for broad regional correlations, which have been identified as important factors in correctly specifying the PM mortality C-R function.

<sup>C</sup> The Pope *et al.* C-R function was used to estimate reductions in premature mortality for the Tier 2/Gasoline Sulfur benefits analysis. It is included here to provide a comparable estimate for the HD Engine/Diesel Fuel rule.

<sup>D</sup> The Krewski *et al.* “Harvard Six-cities Study” estimate is included because the Harvard Six-cities Study featured improved exposure estimates, a slightly broader study population (adults aged 25 and older), and a follow-up period nearly twice as long as that of Pope, *et al.* and as such provides a reasonable alternative to the primary estimate.

<sup>E</sup> Jones-Lee (1989) provides an estimate of age-adjusted VSL based on a finding that older people place a much lower value on mortality risk reductions than middle-age or younger people.

<sup>F</sup> Jones-Lee (1993) provides an estimate of age-adjusted VSL based on a finding that older people value mortality risk reductions only somewhat less than middle-aged or younger people.

The estimated annualized 2030 cost for businesses to implement the final HD Engine/Diesel Fuel program from Table V.D-1 of the RIA is \$4.3 billion (1999\$). When considered in a broader social cost context of the cost to society of the resources used, which is the right

metric for cost-benefit analysis, the annualized cost is \$4.2 billion. The monetized benefits are approximately \$70.4 billion and EPA believes there is considerable value to the public of the benefits it could not monetize. The net benefit that can be monetized is \$66.2

billion. Therefore, implementation of the HD Engine/Diesel Fuel program is expected to provide society with a net gain in social welfare based on economic efficiency criteria. Tables V.F-4 summarizes the costs, benefits, and net benefits.

TABLE V.F-4.—2030 ANNUAL MONETIZED COSTS, BENEFITS, AND NET BENEFITS FOR THE FINAL HD ENGINE/DIESEL FUEL RULE <sup>a</sup>

	Billions of 1999\$
Annual compliance costs .....	\$4.2
Monetized PM-related benefits <sup>b</sup> .....	\$69.0 + B <sub>PM</sub>
Monetized Ozone-related benefits <sup>b, c</sup> .....	\$1.4 + B <sub>Ozone</sub>
NMHC-related benefits .....	not monetized (B <sub>NMHC</sub> )
CO-related benefits .....	not monetized (B <sub>CO</sub> )
Total annual benefits .....	\$70.4 + B <sub>PM</sub> + B <sub>Ozone</sub> + B <sub>NMHC</sub> + B <sub>CO</sub>
Monetized net benefits <sup>d</sup> .....	\$66.2 + B

<sup>a</sup> For this section, all costs and benefits are rounded to the nearest 100 million. Thus, figures presented in this chapter may not exactly equal benefit and cost numbers presented in earlier sections of the chapter.

<sup>b</sup> Not all possible benefits or disbenefits are quantified and monetized in this analysis. Potential benefit categories that have not been quantified and monetized are listed in Table VII-1. Unmonetized PM- and ozone-related benefits are indicated by B<sub>PM</sub> and B<sub>Ozone</sub>, respectively.

<sup>c</sup> Ozone-related benefits are only calculated for the Eastern U.S. due to unavailability of reliable modeled ozone concentrations in the Western U.S. This results in an underestimate of national ozone-related benefits. See US EPA (2000a) for a detailed discussion of the UAM-V ozone model and model performance issues.

<sup>d</sup> B is equal to the sum of all unmonetized benefits, including those associated with PM, ozone, CO, and NMHC.

## VI. Requirements for Engine and Vehicle Manufacturers

### A. Compliance with Standards and Enforcement

We are making some changes to the compliance-related requirements that will apply to vehicles and engines certified to the new standards. These changes are described below. Changes related to the supplemental emission requirements are discussed in Section III.C, along with the discussion of revised standards for those requirements. In general, however, existing compliance provisions will continue to apply to the vehicles and engines subject to today's standards.

#### 1. Allowable Maintenance

Our existing regulations contain provisions (40 CFR § 86.004-25) that would affect scheduled maintenance of NO<sub>x</sub> adsorbers, PM traps, and other devices that may be used to comply with the new standards. These provisions limit the amount of maintenance to emission-related components that the manufacturer is allowed to conduct during durability testing (or specify in the maintenance instructions that it gives to operators). We believe that the continuation of these requirements is appropriate because we expect that, with very low fuel sulfur levels, these technologies will be very durable in use and will last the full useful life with little or no scheduled maintenance other than cleaning. However, we are modifying these provisions slightly. The existing regulations would have allowed a manufacturer to specify something as drastic as replacement of the adsorber catalyst bed or the trap filter after as

little as 100,000–150,000 miles if there was a “reasonable likelihood” that the maintenance would get done. To ensure that no manufacturer underdesigns their adsorbers or traps (compared to the level of durability that is achievable), we are requiring that these technologies be designed to last for the full useful life of the engine. More specifically, the final regulations state that scheduled replacement of the PM filter element, NO<sub>x</sub> adsorber, or other catalyst module bed is not allowed during the useful life, unless the manufacturer can show that the replacement will in fact occur and pays for the replacement. Otherwise, only cleaning and adjustment will be allowed as scheduled maintenance. It is important to note that this restriction only applies to the manufacturer's specified maintenance. Owners and operators are, of course, allowed to perform additional maintenance.

#### 2. Emission Data Waivers

Today's action includes PM standards for all heavy-duty engines. However, because gasoline engines have inherently low PM emissions, it will be appropriate in some cases to waive the requirement to measure PM emissions for certification. Therefore, the final regulations give us the flexibility to allow manufacturers to certify gasoline engines and vehicles without measuring PM emissions, provided they can demonstrate compliance in some other way such as with previous data, analyses, or other information. The flexibility is the same as that allowed for PM emissions from light-duty gasoline vehicles and for CO emissions from heavy-duty diesel engines. We are also allowing the same type of analysis to be used with respect to formaldehyde

emissions from all petroleum-fueled heavy-duty vehicles.

#### 3. Crankcase Emissions

Section III describes a new requirement for manufacturers to control crankcase emissions from turbocharged diesel engines. Historically, control of crankcase emissions has meant sealing the crankcase and routing the crankcase gases into the air intake system so they can be combusted. However, some manufacturers have expressed a reasonable concern that this would be unnecessarily restrictive, and suggested that we should allow for alternative controls. Therefore, we are making some revisions from the proposed regulations. First, we are clarifying that this closed crankcase provision does not require that crankcase gases be routed into the engine intake. We will also allow manufacturers to route crankcase gases into the exhaust system, including upstream of the exhaust emission controls. Furthermore, we are also changing the regulations to allow manufacturers to instead measure crankcase emissions and add them to the measured exhaust emissions (or to measure them together). Manufacturers choosing to use this allowance rather than to seal the crankcase will need to modify their exhaust deterioration factors or to develop separate deterioration factors to account for increases in crankcase emissions as the engine ages. Manufacturers would also be responsible for ensuring that crankcase emissions would be readily measurable in use.



#### 4. Non-Conformance Penalties

We are not establishing non-conformance penalties (NCPs) for the new standards at this time. NCPs are monetary penalties that manufacturers can pay instead of complying with an emission standard. In order for us to establish NCPs for a specific standard, we would have to find that: (1) Substantial work will be required to meet the standard for which the NCP is offered; and (2) there is likely to be a "technological laggard" (*i.e.*, a manufacturer that cannot meet the standard because of technological (not economic) difficulties and, without NCPs, might be forced from the marketplace). According to the CAA (Section 206(g)), such NCPs "shall remove any competitive disadvantage to manufacturers whose engines or vehicles achieve the required degree of emission reduction." We also must determine compliance costs so that appropriate penalties can be established. While we have established NCPs in past rulemakings, their use has been rare since the implementation of our averaging, banking and trading program.

We requested comment on the need for NCPs in this rulemaking. However, after reviewing the comments, we cannot conclude that NCPs will be needed. While we believe that substantial work will be required to meet the 2007 standards, we currently have no information indicating that a technological laggard is likely to exist. Recognizing that it may have been difficult for manufacturers to comment on these criteria at this early stage of development, when implementation of these standards is still more than six years away, it may be appropriate to reconsider NCPs in a future action.

#### 5. Idle CO Standards

We are also eliminating the idle CO emission standards for heavy-duty vehicles and engines below 14,000 pounds beginning in the 2004 model year, provided they are certified to the OBD requirements of our Phase 1 rule. (See 65 FR 59896, October 6, 2000.) The certified OBD systems on those vehicles will likely serve as the basis for future inspection and maintenance tests in areas testing vehicles in that weight class. Certification data show that heavy-duty engines and vehicles are certifying with idle CO levels well below the standard. We believe that the existing standard is not the forcing function for these low idle CO levels, but instead it is the electronic computer-controlled engines of today. In effect, we believe that the idle CO standard places

an unnecessary testing burden on manufacturers whose vehicles are certified to the OBD requirements. We also eliminated the idle CO standard for light-duty trucks in our Tier 2 rule. (See 65 FR 6698, February 10, 2000.) Note that we are considering a future rule that would implement OBD on engines over 14,000 pounds. We would consider eliminating the idle CO requirement for those engines in the event that OBD requirements are put into place.

#### B. Compliance With Phase-in Schedules

In Section III we described the phase-in options for diesel engine manufacturers. These options are based on percentages of a manufacturer's production. We recognize, however, that manufacturers need to plan for compliance well in advance of the start of production, and that actual production volumes for any one model year may differ from their projections. This is a bigger concern for the diesel engines than for gasoline engines because of the three-year phase-in of the new diesel NO<sub>x</sub> standards. On the other hand, we believe that it would be inappropriate to base compliance solely on a manufacturer's projections. That could encourage manufacturers to overestimate their production of the low-emission engines, and could result in significantly lower emission benefits during the phase-in. Given these conflicting factors, we are finalizing a compromise approach. We will initially only require diesel manufacturers to project compliance with the phase-in based on their projected production volumes, provided that they made up any deficits (in terms of percent of production) the following year. Thus, a manufacturer that projected 50 percent of its production in 2007 would be low-NO<sub>x</sub> (*i.e.*, meet the 0.20 g/bhp-hr NO<sub>x</sub> standard), but that was only able to actually produce 45 percent of its production as low-NO<sub>x</sub>, could achieve compliance by producing at least 55 percent of its production as low-NO<sub>x</sub> in 2008. However, since production volumes differ from year to year, deficits would be calculated and made up based on numbers of engines or vehicles, rather than percent of production. This is similar to the approach that we used in phasing-in the Tier 2 emission standards.

Since we expect that a manufacturer making a good-faith projection of sales would not be very far off of the actual production volumes, we are limiting the size of the deficit that could be excused. In all cases, the manufacturer will be required to produce at least 25 percent of its production as low-NO<sub>x</sub> engines in model years 2007, 2008, and 2009.

Another important restriction is that manufacturers will not be allowed to have a deficit in the third year of the phase-in (2009). This restriction is being finalized to ensure that manufacturers are able to make up the deficit. Since they could not produce more than 100 percent low-NO<sub>x</sub> engines in 2010, it would not be possible to make up a deficit from 2009.

#### C. Averaging, Banking, and Trading

We are continuing the basic structure of the existing ABT program for heavy-duty engines. This program allows manufacturers to certify their engine families at various specified emissions levels above or below the standard, as long as they comply with the applicable standards when averaged across their various engine families. More specifically, manufacturers are allowed to certify their engine families with various family emission limits (FELs), provided that in each model year the average of the FELs does not exceed the standard when weighted by the numbers of engines produced in each family for that model year. To do this, they generate certification emission credits by producing engine families that are certified below the applicable standard. These credits can then be used to offset the production of engine families that are certified to have emissions in excess of the applicable standards. Manufacturers are also allowed to bank these credits for later use or trade them to other manufacturers. We are adopting some restrictions to ensure that the environmental benefits of the program are not jeopardized as described in the Response to Comments document. These restrictions are described below along with other changes made in response to comments. We are continuing this ABT program because we believe that it will provide the manufacturers significant compliance flexibility. This compliance flexibility could be a significant factor in the manufacturers' ability to comply with the standards in 2007 and will help to allow implementation of the new, more stringent standards as soon as permissible under the CAA.

We proposed two separate averaging sets during the diesel phase-in period. In one set, engines would be certified to the 2.4 g/bhp-hr NO<sub>x</sub>+NMHC standard (which applies for model years 2004–2006), and would be subject to the restrictions and allowances established for those model years. In the other set, engines would be certified to the 0.20 g/bhp-hr NO<sub>x</sub> standard, and would be subject to the restrictions and allowances in the proposed program.

While we proposed to not allow averaging between these two sets, based on the comments we received, the final regulations allow manufacturers to transfer credits across these averaging sets, with some restrictions. Manufacturers could use credits generated during the phase-out of engines subject to the 2.4 g/bhp-hr NO<sub>x</sub>+NMHC standard to comply with the 0.20 g/bhp-hr NO<sub>x</sub> standard, but these credits will be subject to a 20 percent discount. (Each gram of NO<sub>x</sub>+NMHC credits from the phase-out engines would be worth 0.8 grams of NO<sub>x</sub> credits in the new ABT program.) This discount reflects the fact that the change from our proposed ABT program provides manufacturers with substantial flexibility in meeting the final standards and also accounts for the NMHC component of the credit. In the first year of the phase-in, this flexibility will allow manufacturers to reduce fleetwide emissions more than would have been possible with the proposed program. Manufacturers will be able to reduce emissions for a substantial percentage of their production, reflecting the use of low-NO<sub>x</sub> technologies, without being required to produce a full 50 percent of their production with NO<sub>x</sub> emissions near or below 0.20 g/bhp-hr in the initial year of the phase-in. This generation and use of credits will give manufacturers a greater opportunity to gain experience with the low-NO<sub>x</sub> technologies before they are required to meet the final standards across their full production. As part of the averaging program during the phase-in period (model years 2007–2009), we will allow diesel engine credits to be averaged across service class using a modified form of the ABT program. These credit exchanges would occur in the same manner as other credit exchanges, except that the credits generated from one service class would need to be calculated using the useful life and horsepower values of the engine family using credits. This would make the credit exchanges equivalent to the vehicle count phase-in provisions. This allowance is restricted to averaging. Banked or traded credits cannot be used across service class.

We are also adopting a restriction on the use of banked NO<sub>x</sub>+NMHC credits generated from diesel engines certified to the 2.4 g/bhp-hr NO<sub>x</sub>+NMHC standard. While we proposed to prohibit any such use, the final regulations will allow manufacturers to use banked credits to show compliance with the 0.20 g/bhp-hr standard, but the credits will be discounted by 20 percent when

they are used for this purpose.<sup>200</sup> This is consistent with the cross-averaging set discount described above. In addition, we are setting an upper bound on the number of engines for which a manufacturer could use such banked credits during any one model year. The upper limit is ten percent of the manufacturer's annual U.S.-directed production of heavy-duty highway diesel engines, and would apply only for engines certified to FELs higher than 0.50 g/bhp-hr. We believe that this limit is necessary to prevent manufacturers from delaying the introduction of the low-NO<sub>x</sub> technologies by using a large number of banked credits. This kind of delay would be contrary to the goals of the phase-in, which in large part is intended for manufacturers to gain some initial experience with the low-NO<sub>x</sub> technologies for a limited portion of their production. Although it does not appear likely (based on manufacturer expectations) that such credits will exist in large numbers, this limit appears prudent to ensure that such a problem does not occur.

We are making similar changes to the ABT programs for heavy-duty gasoline engines and vehicles. We will allow exchange of credits from the chassis-certified vehicles to engines (and vice versa) on a credit for credit face-value basis, subject to a 20 percent discount.<sup>201</sup> The discount is necessary to account for the uncertainty in converting between g/mi standards and g/bhp-hr standards. We will also allow NO<sub>x</sub>+NMHC credits from gasoline engines certified to the combined standards (including banked credits) to be used in the new NO<sub>x</sub>-only ABT program, also subject to the 20 percent discount, for reasons discussed above and in the Response to Comments document. This discount would not apply for banked or averaged gasoline vehicle credits used within the vehicle ABT program, since the existing program is already a NO<sub>x</sub>-only program. In connection to this option, we believe that it would be appropriate to allow gasoline engine manufacturers to voluntarily participate in an NMHC ABT program, instead of forcing them to convert their NO<sub>x</sub>+NMHC credits into

<sup>200</sup> It should be noted that the existing regulations already contain provisions that would discount diesel NO<sub>x</sub>+NMHC credits in some cases when they are banked or traded. The reason for this discount is an interest in encouraging engine designs that are significantly cleaner than the 2.4 g/bhp-hr standard while that standard is in effect. There are also similar provisions for gasoline engines and vehicles. While the new regulations do not change these existing provisions, they do account for the previous discount by capping the total discount at 20 percent.

<sup>201</sup> See preceding footnote.

NO<sub>x</sub> credits when the new standards take effect. While we believe that manufacturers will generally prefer to use these credits as NO<sub>x</sub> credits, NMHC credits may be of some value to manufacturers since gasoline engine emission controls often have a NO<sub>x</sub>-NMHC emission tradeoff much like the NO<sub>x</sub>-PM tradeoff for diesel engines. Therefore, we are extending the ABT programs for gasoline engines and vehicles to include NMHC, beginning with the 2007 model year. These NO<sub>x</sub> and NMHC ABT programs parallel the NO<sub>x</sub> and PM ABT programs for diesels. In the NMHC ABT programs, the NMHC credits would be subject to the same allowances, restrictions, and discounts as the NO<sub>x</sub> credits. In addition, we are adopting a provision to allow vehicle manufacturers to bank NMHC credits before 2008 for complete vehicles that are certified to the 2008 standards early. (Engine manufacturers are already allowed to bank NO<sub>x</sub>+NMHC credits for model year 2004 and later engines.)

It is worth noting three other aspects of this new banking program. First we recognize that NO<sub>x</sub>+NMHC credits are not the same as NO<sub>x</sub>-only credits. However, both NMHC reductions and NO<sub>x</sub> reductions have environmental value, although they are not necessarily equivalent. Thus, given the 20 percent discount that would be applied to the NO<sub>x</sub>+NMHC credits if they are transferred into the new NO<sub>x</sub> ABT program, we believe that it is appropriate to allow those credits to be used in the new NO<sub>x</sub> program. This is especially true for diesels, which are expected to have low NMHC levels for model years 2004–2006 (probably about one-tenth of the expected NO<sub>x</sub> levels). Second, the final program does not include the proposed provisions for banking undiscounted credits by meeting all of the new diesel standards early, because we believe that the early compliance option described in Section III would accomplish essentially the same flexibility. Finally, we are not finalizing any new discounts or restrictions for banked PM credits. Considering the simple 100 percent phase-in of the PM standards in 2007, we believe that such restrictions are not necessary to achieve the goals of this program for PM, especially given the 0.02 g/bhp-hr PM FEL cap, which is described below.

The existing ABT program includes limits on how high the emissions from credit-using engines can be. These limits are referred to as FEL caps. No engine family may be certified above these caps using credits. These limits provide the manufacturers compliance flexibility while protecting against the

introduction of unnecessarily high-emitting engines. In the past, we have generally set the FEL caps at the emission levels allowed by the previous standard, unless there was some specific reason to do otherwise. However, we proposed much lower FEL caps, because the proposed standard levels were so much lower than the previous levels and because we wanted to ensure that manufacturers did not continue to produce old-technology high-emitting engines under the new program. In today's FRM, for model year 2007 and later diesel engines, we are adopting a more flexible cap for NO<sub>x</sub> emissions during the first three years of the program than was proposed, but are adopting the proposed FEL cap for PM emissions. We believe that this approach for NO<sub>x</sub> is more consistent with the rest of the ABT program (as is described above) than applying the proposed FEL cap during this interim period. Specifically, model year 2007 through 2009 diesel engines subject to the 0.20 g/bhp-hr standard will not be

allowed to have NO<sub>x</sub> emissions higher than 2.0 g/bhp-hr, or PM emissions higher than 0.02 g/bhp-hr. The NO<sub>x</sub> level represents a conservative estimate of the emission level that is expected under the combined NO<sub>x</sub>+NMHC standards that will apply beginning in model year 2004. The proposed NO<sub>x</sub> FEL cap of 0.50 g/bhp-hr would not apply until model year 2010. We believe that the higher FEL cap is appropriate during the transition to the much lower standards, to allow some meaningful use of averaging. However, since the 2.0 g/bhp-hr cap is ten times the level of the new standard, it would not be appropriate as a long-term cap.

The PM cap is also lower than the previous standard of 0.10 g/bhp-hr. As noted above, this is being done in connection with the absence of the kind of restrictions on the use of PM credits that are being set for NO<sub>x</sub> credits. The NO<sub>x</sub> credits restrictions are designed to better coordinate the NO<sub>x</sub> ABT program with the NO<sub>x</sub> standard phase-in; and the PM standard is not phased-in.

Without those types of restrictions, we believe that it is appropriate to adopt the proposed lower FEL cap to prevent the possibility of PM credits being used to delay the implementation of the program and its benefits.

The FEL caps for gasoline vehicles and engines are being set at the previous standards, and the approximate NO<sub>x</sub> and NMHC levels inherent in the NO<sub>x</sub>+NMHC standards that will apply for model year 2004–2007 engines. Since engine manufacturers will have the option of certifying their engines to a 1.5 g/bhp-hr NO<sub>x</sub>+NMHC standard for model years 2004–2007 (instead of the 2005 standard of 1.0 g/bhp-hr), those manufacturers choosing that option, will also be allowed higher FEL caps for model years 2008–2010. All of these FEL caps are shown in Table VI.D–1 and are discussed in more detail in the Response to Comments document. These new FEL caps do not apply for the phase-out engines and vehicles.

TABLE VI.D–1.—NEW FEL CAPS FOR AVERAGING BANKING AND TRADING

	NO <sub>x</sub> FEL cap	PM/NMHC FEL cap
HDDE .....	0.50 g/bhp-hr <sup>a</sup> ..	0.02 g/bhp-hr PM.
HDGE .....	0.50 g/bhp-hr <sup>b</sup> ..	0.30 g/bhp-hr <sup>b</sup> NMHC.
Complete HDGV less than or equal to 10,000 pounds GVWR .....	0.9 gpm .....	0.28 gpm NMHC.
Complete HDGV over 10,000 pounds GVWR .....	1.0 gpm .....	0.33 gpm NMHC.

<sup>a</sup> The NO<sub>x</sub> FEL cap is 2.0 for model years 2007–2009 diesel engines.

<sup>b</sup> The NO<sub>x</sub> and NMHC FEL caps are 0.80 and 0.40 g/bhp-hr, respectively, for model years 2008–2010 gasoline engines for manufacturers choosing to certify to the 1.5 g/bhp-hr NO<sub>x</sub>+NMHC level in 2004.

*D. FTP Changes to Accommodate Regeneration of Exhaust Emission Controls*

It is expected that some of the exhaust emission control devices used to meet today's standards will have discrete regeneration events that could affect emission characteristics. For example, NO<sub>x</sub> adsorbers incorporate discrete regenerations. The NO<sub>x</sub> adsorber stores NO<sub>x</sub> under normal conditions until the NO<sub>x</sub> storage capacity is nearly full, at which point the regeneration event is triggered to purge the stored NO<sub>x</sub> and reduce it across a catalyst. We expect that these regeneration events would be controlled by the engine computer, and would thus be generally predictable. Even passively regenerating catalytic PM trap designs can have discrete regeneration events that can be predictable.

Discrete regeneration events can be important because it is possible for

exhaust emissions to increase during the regeneration process. The regeneration of a NO<sub>x</sub> adsorber for instance, could result in increased particulates, NMHC and NO<sub>x</sub> due to the rich exhaust gas required to purge and reduce the NO<sub>x</sub>. We expect that in most cases, the regeneration events will be sufficiently frequent to be included in the measured emissions. Our feasibility analysis projects very frequent regeneration of the NO<sub>x</sub> adsorbers, and continuously regenerating PM traps. Nevertheless, this issue becomes a regulatory concern because it is also conceivable that these emission storage devices could be designed in such a way that a regeneration event would not necessarily occur over the course of a single heavy-duty FTP cycle, and thus be unmeasured by the current test procedure. In addition, desulfation of NO<sub>x</sub> adsorbers is clearly not likely to occur frequently enough to reliably be

caught in the FTP. Since these regeneration events could produce increased emissions during the regeneration process, it will be important to make sure that regeneration is captured or accounted for as part of the certification testing.

In order to ensure control of emissions during regeneration (including desulfation), we will require manufacturers to determine and use a mathematical adjustment of measured emissions to account for increased emissions during infrequent regeneration events that do not occur during the testing. Conversely, we will also require manufacturers to provide us with a consistent reverse adjustment factor for tests in which the regeneration does occur. For example, if a system requires a desulfation after every 20 FTP transient cycles, and PM emissions increase by 0.01 g/bhp-hr during an FTP transient cycle with a desulfation, we

will require measured emissions to be adjusted upward by 0.0005 g/bhp-hr (0.01 g/bhp-hr divided by 20 cycles) for all tests in which that regeneration does not occur. The equivalent reverse adjustment (downward) for tests in which the regeneration does occur would be 0.0095 g/bhp-hr (0.01 g/bhp-hr multiplied by 19/20). The reason that the adjustment downward would be so much larger than the adjustment upward is that it is correcting for a significant emission increase over a single emission test, while the adjustment downward would be correcting for that same emission increase over the other 19 tests. No adjustment will be made for events that are so frequent that they always occur during FTP testing. In designs for which these activities are not commanded at regular intervals, such as those based on changes in backpressure or NO<sub>x</sub> levels, the manufacturer would be required to determine an average frequency of the regeneration (during repeat FTP transient tests). In all cases, manufacturers would need to provide information to allow testers to know when an infrequent regeneration has occurred during the test, such as by identifying the controller command signal for this event. If this information is not available, manufacturers would be required to meet the standards during all tests, without regard to whether a regeneration occurs.

#### *E. Improvements to the Test Procedures*

In response to manufacturer comments, we are finalizing changes to the test procedures to improve the precision of emission measurements. The changes fully address the manufacturers concerns about the potential effect of measurement precision on the feasibility of the standards. It is important to note that these changes are not intended to make measurements higher or lower, but only to improve the repeatability of the measurements. Based on our experience with these modified test procedures, and our discussions with manufacturers about their experiences, we are confident that these changes will not affect the stringency of the standards. These changes are summarized briefly here. A more complete description can be found in a memorandum to the docket.<sup>202</sup>

Most of the changes being finalized are in three general areas. Many of the changes are to the PM sampling procedure. These include changes to the type of PM filters that are used, and

improvements in how PM filters are weighed before and after emission measurements, including requirements for more precise microbalances. Another area includes changes to the dilution air specifications to allow for lower dilution ratios. The final area of change is the NO<sub>x</sub> calibration procedure. The new calibration procedures will result in more precise continuous measurement of very low concentrations of NO<sub>x</sub>.

Other changes are being made to the regulations to allow for other measurement options. In some cases, manufacturers will be allowed to use their current procedures, even though EPA will adopt the changes for our own testing. The reason for this is that some of these changes may not be convenient or cost-effective in the short term, and manufacturers may be willing to live with some slightly higher measurement variability in order to lower testing costs. We believe that manufacturers should be able to individually optimize their test facilities in this manner. However, it is important for manufacturers to understand that we will conduct our confirmatory testing in the accurate and precise manner specified in these regulations.

We are including a new regulatory provision that specifies the steps that someone needs to go through to demonstrate that their own alternate measurement procedure is as good as or better than the procedure specified by our regulations. This provision is found in 40 CFR § 86.1306-07. It is also worth noting that, although we requested comment on changes to the NO<sub>x</sub> humidity correction factors used for FTP testing, we did not receive any such comments. Thus we will continue to use the existing NO<sub>x</sub> humidity correction factors for FTP testing.

#### *F. Certification Fuel*

It is well established that measured emissions are affected by the properties of the fuel used during the test. For this reason, we have historically specified allowable ranges for test fuel properties such as cetane and sulfur content. These specifications are intended to represent most typical fuels that are commercially available in use. Because today's action is lowering the upper limit for sulfur content in the field, we are also establishing a new range of allowable sulfur content for testing that is 7 to 15 ppm (by weight). We believe that this range best represents the fuel that diesel vehicles will potentially see in use. Beginning in the 2007 model year, these specifications will apply to emission testing conducted for Certification and Selective Enforcement Audits, as well as

any other laboratory engine testing for compliance purposes. Because the same in-use fuel is used for light- and heavy-duty highway diesel vehicles, we are also changing the specifications for light-duty diesel vehicle testing.

It is important to note that while these specifications include the maximum sulfur level allowed for in-use fuel, we believe that it is generally appropriate to test using the most typical fuels. We expect that refineries will typically produce diesel fuel with about 7 ppm sulfur, and that the fuel could have slightly higher sulfur levels after distribution. Thus, we expect that we would use fuel having a sulfur content between 7 and 10 ppm sulfur for our emission testing. Should we determine that the typical in-use fuel has significantly more sulfur than this, we would adjust this target upward.

We are including a regulatory change to the heavy-duty gasoline test fuel specifications to make them the same as the recently established Tier 2 fuel specifications for light-duty vehicles. We are also extending to heavy-duty engines and vehicles the Tier 2 allowance for manufacturers to use California test gasoline for certification. As is the case with Tier 2, this allowance does not affect our authority to conduct our own testing using federal fuel. Also consistent with our approach under Tier 2, we will consider requests, prior to manufacturer or EPA in-use testing, to permit preconditioning procedures designed solely to remove the effects of high sulfur gasoline on vehicles produced through the 2007 model year.

We are also allowing as an option the use of the new diesel test fuel beginning in the 2004 model year for vehicles employing sulfur-sensitive technology that are certifying to the Tier 2 standards. This allowance to use the new fuel in model years 2004-2006 will only be available for vehicles for which the manufacturer recommends to the owner that the vehicle be operated on fuel with 15 ppm sulfur or less, where available. Any testing that we perform on these vehicles would also use fuel meeting this lower sulfur specification. This optional certification fuel provision is targeted at encouraging the introduction of low-emission light-duty diesel technologies under the new Tier 2 standards that will be taking effect at that time. The provision accounts for the fact that these vehicles will use the lower sulfur fuel during most, perhaps all, of their operating life, given the clear manufacturer recommendation for use of low-sulfur fuel in these vehicles, combined with prospects for early availability of this fuel under the

<sup>202</sup> Memorandum from Matthew Spears to Docket A-99-06, dated December 6, 2000.

incentive provisions discussed in Section IV, and the assured availability of this fuel by mid-2006. Furthermore, we will allow manufacturers choosing to exercise this option in certifying vehicles for sale in both California and the other 49 states to use a fuel that, on a specification by specification basis, meets the requirements of either the federal or the California fuel specifications. This option is appropriate for light-duty vehicles and trucks since they would otherwise face a very complicated transition period, in which they would need to retest and potentially recalibrate vehicles for as many as four different test fuels during a three-year period.

#### *G. Misfueling Concerns for Light- and Heavy-Duty Diesel Vehicles*

As explained in Section III, the emissions standards contained in these regulations will make it necessary for manufacturers to employ exhaust emission control devices that require low-sulfur fuel to ensure proper operation. This action therefore restricts the sulfur content of highway diesel fuel sold in the U.S. There are, however, some situations in which vehicles requiring low-sulfur fuel may be accidentally or purposely misfueled with higher-sulfur fuel. Vehicles operated within the continental U.S. may cross into Canada and Mexico, countries that may not adopt the same low sulfur requirements on the same schedule. High-sulfur nonroad fuel may illegally be used by some operators to fuel highway vehicles. Any of these misfueling events could seriously degrade the emission performance of sulfur-sensitive exhaust emission control devices, or perhaps destroy their functionality altogether.

There are, however, some factors that help to mitigate concerns about misfueling. Most operators are very conscious of the need to ensure proper fueling and maintenance of their vehicles. The fear of large repair and downtime costs may often outweigh the temptation to save money through misfueling. The likelihood of misfueling in Canada and Mexico is lessened by current cross-border shipment practices and prospects for eventual harmonization of standards. Canada has recently expressed its intent to harmonize its fuel regulations with U.S. fuels standards.<sup>203</sup> This would offer vehicle owners the option of refueling with low-sulfur fuel there. Even if

Canada were to lag behind the U.S. in mandating low-sulfur fuels, these fuels would likely become available along major through routes to serve the needs of U.S. commercial traffic that have the need to purchase it. In addition, there is less potential for U.S. commercial vehicles needing low-sulfur fuel to refuel in Canada because Canadian fuel is currently more costly than U.S. fuel. As a result, most vehicle owners will prefer to purchase fuel in the U.S., prior to entering Canada, whenever possible. This is facilitated by large tractor-trailer trucks that can have long driving ranges—up to 2,000 miles per tankful or so—and the fact that most of the Canadian population lives within 100 miles of the United States/Canada border.

In Mexico, the entrance of trucks beyond the border commercial zone has been prohibited since before the conclusion of the North American Free Trade Agreement in 1994. This prohibition applies in the U.S. as well, as entrance of trucks into the U.S. beyond the border commerce zone is also not allowed. Since these prohibitions are contrary to the intent of the Free Trade Agreement, a timetable was established to eliminate them.<sup>204</sup> However, these prohibitions remain in force at this time.

The NAFTA negotiations included creation of a “corridor” where commercial truck travel occurs, and where Mexico is obligated to provide “low-sulfur” fuel. At the time of the NAFTA negotiations, “low-sulfur” fuel was considered 500 ppm, which was the level needed to address the needs of engines meeting the 1994 emission standards. The travel prohibition currently in place may be lifted at some point. At that time, the issue of assuring, for U.S. vehicles, the availability of fuel with a sulfur level needed by the new technology may need to be addressed.

Even considering these mitigating factors, we believe it is reasonable to adopt additional measures with very minor costs to manufacturers, fuel distributors, and consumers. First, we are requiring that highway diesel fuel pumps and co-located nonroad diesel fuel pumps be prominently labeled, as described in Section VII.

We are also adopting a requirement that heavy-duty vehicle manufacturers notify each purchaser of a model year 2007 or later diesel-fueled vehicle that the vehicle must be fueled only with the low-sulfur diesel fuel meeting the

regulations being adopted in this FRM. We believe this requirement is necessary to alert vehicle owners to avoid higher sulfur fuel in the U.S. and to seek out low-sulfur fuel when operating in areas such as Canada and Mexico where it may not be widely available. We are also requiring that model year 2007 and later heavy-duty diesel vehicles must be equipped by the manufacturer with labels on the dashboard and near the refueling inlet that say: “Use Low Sulfur Diesel Fuel Only” or “Low Sulfur Diesel Fuel Only”. For non-integrated manufacturers, the engine manufacturer will be required to provide such a label to the vehicle manufacturer, which the vehicle manufacturer will be required to install. Optionally, if a vehicle manufacturer chooses to install its own label, the engine manufacturer will not be required to provide the label.

We believe that these measures will help vehicle owners find and use the correct fuel and will be sufficient to address misfueling concerns. Thus, more costly provisions, such as vehicles fuel inlet restrictors, will not be necessary.

We are also requiring that the labeling and purchaser notification requirements described above for heavy-duty vehicles also be applied to the light-duty diesel vehicles certified to the final Tier 2 standards using certification test fuel with 15 ppm or less sulfur. These vehicles are expected to also need the low-sulfur fuel and be equally susceptible to misfueling damage.

#### *H. In-Use Compliance Levels During the Transition Years to New Technologies*

The Phase 2 standards will be challenging for diesel and gasoline engine manufacturers to achieve, and will require manufacturers to develop new technologies for their engines. Not only will manufacturers be responsible for ensuring that these technologies will allow engines to meet the standards at the time of certification, they will also have to ensure that these technologies continue to be highly effective in a wide range of in-use environments so that their engines would comply in-use when tested by EPA. However, in the early years of a program that introduces new technology, there are risks of in-use compliance problems that may not appear in the certification process or during developmental testing. Thus, we believe that it is appropriate to adjust the compliance levels for assessing in-use compliance for low emission engines (i.e., diesel engines equipped with the new exhaust emission control devices expected for Phase 2 diesel engines, and gasoline engines

<sup>203</sup> “Process Begins to Develop Long Term Agenda to Reduce Air Pollution from Vehicles and Fuels”, Environment Canada press release, May 26, 2000.

<sup>204</sup> See NAFTA, Volume II, Annex I, Reservations for Existing Measures and Liberalization Commitments, Pages I-M-69 and 70, and Pages I-U-19 and 20.

employing Tier 2/Phase 2 level technology). This will provide assurance to the manufacturers that they will not face recall if they exceed standards by a small amount during this transition to clean technologies. This approach is very similar to that taken in the Tier 2 final rule, which involves a similar introduction of new technologies (65 FR 6796, February 10, 2000).

Table VI.H-1 shows the in-use adjustments that we will apply to diesel and gasoline engines. These adjustments will be added to the appropriate FELs (or for engines certified to the standards

without the use of credits, to the standards themselves) in determining the in-use compliance level for a given in-use mileage. For example, a light HD diesel engine with a useful life of 110,000 miles and a NO<sub>x</sub> FEL of 0.20 g/bhp-hr would have an in-use compliance level of 0.30 g/bhp-hr (0.20 + 0.10) throughout its useful life. A heavy HD diesel engine, having a useful life of 435,000 miles and a NO<sub>x</sub> FEL of 0.20 g/bhp would have an in-use compliance level of 0.30 g/bhp-hr through 110,000 miles, 0.35 g/bhp-hr from there through 185,000 miles, and 0.40 g/bhp-hr through the remainder of

its useful life. The adjustment levels were chosen to be roughly equivalent to the temporary in-use standard adjustments adopted for low-emitting vehicles in the Tier 2 program, accounting for the higher mileage requirements reflected in the useful lives of the larger heavy-duty engines. Note too in the table footnotes the limiting of these adjustments to engine certified to levels below certain threshold levels. This is similar to the approach taken in the Tier 2 rule which applied the in-use standards only to vehicles in certain low-emitting bins.

TABLE VI.H-1.—ADD-ON LEVELS USED IN DETERMINING IN-USE STANDARDS FOR DIESEL & GASOLINE ENGINES

Engine mileage (miles)	Diesel <sup>a</sup> and gasoline <sup>b</sup> NO <sub>x</sub> Add-on level to FEL (g/bhp-hr)	Diesel PM Add-on level to FEL (g/bhp-hr)	Gasoline <sup>c</sup> NMHC Add-on level to FEL (g/bhp-hr)
<110,000 .....	0.10	0.01	0.10
110,000 to 185,000 .....	0.15	0.01	<sup>d</sup> N/A
185,000 to 435,000 .....	0.20	0.01	<sup>d</sup> N/A

<sup>a</sup> Applicable to those diesel engines with FELs at or below 1.3 g/bhp-hr NO<sub>x</sub> through 2011.

<sup>b</sup> Applicable to those gasoline engines with NO<sub>x</sub> FELs at or below 0.5 g/bhp-hr through 2011.

<sup>c</sup> Applicable to those gasoline engines with NMHC FELs at or below 0.3 g/bhp-hr through 2011.

<sup>d</sup> Note that the useful life for gasoline engines is 110,000 miles, so these add-on levels have significance only to that mileage for gasoline engines.

Similar examples apply for diesel engine PM, with the exception that the PM in-use add-on level is a constant 0.01 regardless of mileage. Likewise for gasoline NMHC where the add-on level is a constant 0.10 g/bhp-hr through the 110,000 mile useful life.

These same in-use add-on levels will be applied to the certification SET and NTE levels after applying the SET and NTE multipliers for the purpose of determining the corresponding in-use standards. In other words, for heavy HD diesel engine with a NO<sub>x</sub> FEL of 0.20 g/bhp-hr, the in-use SET standard would be 0.30, 0.35, and 0.40 g/bhp-hr in each respective mileage range (remember that the SET multiplier is 1.0 × the FTP standard or FEL). The in-use NTE standard, with a multiplier of 1.5 × the FTP standard or FEL, would be 0.40, 0.45, and 0.50 g/bhp-hr in each of the respective mileage ranges (0.20 × 1.5 =

0.30; + 0.1 = 0.40; + 0.15 = 0.45; + 0.20 = 0.50).

Note that these in-use add-on levels apply only to engines certified through the 2011 model year and having FELs below the specified levels. These levels are very low and represent levels we believe will require significant effort by manufacturers to reach. The in-use add-ons are available through 2011 because some diesel engine models may not incorporate the emission control technology until 2010 as a result of the final phase-in schedule. Engine models incorporating these technologies for the first time in 2010 may account for as many as 50 percent of all diesel engines sold in that year. We believe these engine models should be provided the in-use adjustment for at least the first two years of their market introduction. In the case of gasoline engines, the phase-in ends in the 2009 model year.

However, we have decided to allow the in-use adjustments through model year 2011, consistent with the diesel provision.

For HD complete gasoline vehicles, and any complete diesel vehicles choosing the chassis certification option, we will have a flat in-use adjustment of 0.1 g/mile NO<sub>x</sub>, 0.100 g/mile NMHC (gasoline vehicles only), and 0.01 PM for all weight classes. These in-use adjustments will apply only to those vehicles certified with FELs at or below the applicable Phase 2 standards. Further, they will apply for vehicles certified through 2010 so that those vehicle models newly certified to the Phase 2 standards in 2009 are given two years of certification experience prior to elimination of the in-use adjustments. Table VI.H-2 shows the adjustments that will apply to HD chassis certified vehicles.

TABLE VI.H-2.—IN-USE ADJUSTMENTS FOR CHASSIS CERTIFIED VEHICLES

Weight range (GVWR)	Durability period (miles)	NO <sub>x</sub> <sup>a</sup> (g/mi)	NMHC <sup>a</sup> (g/mi)	PM (g/mi)
8,500 to 10,000 lbs. ....	120,000	0.1	0.100	0.01
10,000 to 14,000 lbs. ....	120,000	0.1	0.100	0.01

<sup>a</sup> Applicable to those vehicles with NO<sub>x</sub> and/or NMHC FELs at or below the appropriate Phase 2 standards through 2010.

During the certification demonstration, manufacturers will still

be required to demonstrate compliance with the unadjusted Phase 2

certification standards using deteriorated emission rates. Therefore,

the manufacturer will not be able to use these in-use standards as the design targets for the engine or vehicle. They will need to project that most engines would meet the standards in-use without adjustment. The in-use adjustments will merely provide some assurance that they would not be forced to recall engines or vehicles because of some small miscalculation of the expected deterioration rates. Furthermore, given that a new diesel fuel will be in place and it will be sold alongside higher sulfur diesel fuel being marketed to the existing fleet, there is a small likelihood of accidental misfueling during the phase-in years as users become familiar with the importance of using the lower sulfur fuel. As discussed in detail in sections III.E and III.F, sulfur has adverse impacts on exhaust emission control devices.

#### **VII. Highway Diesel Fuel Program: Compliance, Enforcement and Downstream Provisions**

For the highway diesel fuel sulfur program that we are adopting today to be successful in achieving its large emission reduction goals, it is vital for all parties that are affected by the program to thoroughly understand what is expected of them to comply, what compliance options may apply to them, and how their compliance will be assessed and enforced. If you believe that you are or may be subject to the program, the most important information is found in the regulatory language following this preamble. There, readers will find the detailed legal requirements of the program for each party and how we will assess and enforce compliance with the program requirements.

A key purpose of this preamble is to supplement the regulatory language by providing a context for and an explanation of the requirements of the program. Section IV above discusses in some detail most of the requirements under the highway diesel fuel sulfur program adopted today. In addition, this section (Section VII) builds on the Section IV discussions by addressing specific compliance and enforcement provisions we have adopted in today's rule to ensure that highway diesel fuel standards are met at all points in the distribution system—from the refiner or importer that introduces the fuel into the distribution system, through all the parties that may distribute the fuel, to the retailers and other parties that provide the fuel to its ultimate user. This section also explains certain requirements of the program in more detail.

After touching on a few general aspects of the highway diesel fuel program, this section discusses the compliance and enforcement provisions that apply to refiners and importers and those that apply to the downstream parties that handle diesel fuel. This section also discusses diesel fuel sampling and testing for sulfur, reporting and recordkeeping requirements, limited exemptions from the program, and how liability for any noncompliance would be handled.

##### *A. General Provisions*

###### **1. Definition of Diesel Fuel Covered by This Program**

In this preamble, we refer to the fuel covered by the program adopted today as “highway diesel fuel.” For technical and legal consistency with the Clean Air Act and existing fuels regulations, the regulatory language associated with today's rule uses the term “motor vehicle diesel fuel” in order to assure consistency with the language in existing laws and regulations. “Nonroad diesel fuel” refers to diesel fuel intended for use in nonroad vehicles or equipment, and is not covered by the highway diesel fuel sulfur requirements of the program. However, any fuel that is available for highway vehicles and engines, whether or not it is also available for nonroad vehicles and engines or for other purposes, is treated as highway diesel fuel under today's program.

###### **2. Relationship to Highway Diesel Standards**

As discussed in Section IV above, today's final rule reduces the sulfur cap standard for highway diesel fuel from 500 ppm to 15 ppm nationally<sup>205</sup> effective in 2006. (Implementation dates are discussed further in Section VII.C.2. below.) The existing standards for cetane and aromatics will remain in effect and are not being changed by today's action (40 CFR § 80.29(a)). The highway diesel fuel sulfur, cetane, and aromatics standards will be enforced through sampling and testing at all points in the distribution system, combined with inspection of fuel delivery records and other commercial documents. The general compliance requirements of this rule are very similar to those in the current diesel fuel rule, except that the sulfur standard is substantially more stringent (see 40

<sup>205</sup> Except as noted elsewhere in the preamble and final rule, today's rule applies to all states, including the State of California. See Section IV.F for unique implementation provisions for Alaska and exemptions for diesel fuel in certain U.S. territories.

CFR 80.29 and 80.30). Prior to the implementation dates for today's rule, all the requirements and prohibitions of the current diesel fuel rule will remain in effect, with limited modifications concerning sulfur sampling methods.

##### *B. What Are the Requirements for Refiners and Importers?*

###### **1. General Requirements**

As discussed earlier in this preamble, the sulfur sensitivity of emission controls that will be used on model year 2007 and later motor vehicles requires that the sulfur content of highway diesel fuel dispensed into 2007 and later heavy-duty vehicles not exceed 15 ppm. To ensure that highway diesel fuel meets this standard as it leaves the refinery or import facility, today's final rule adopts the proposed approach that if the sulfur content of highway diesel fuel at a refinery or import facility exceeds 15 ppm by any amount, the fuel is in violation of the sulfur standard. The determination of compliance with the sulfur standard for highway diesel fuel at the refinery level is not subject to a test tolerance.<sup>206</sup>

Consistent with the proposal, today's final rule does not require that refiners or importers engage in mandatory sampling and testing of every batch of highway diesel fuel they produce or import.<sup>207</sup> This is because the highway diesel fuel sulfur standard is a national cap standard and compliance can be monitored at any point in the distribution system by taking samples of fuel for testing. However, under the presumptive liability scheme, any refiner producing noncomplying product would face liability for fuel in violation of the standard, regardless where the violation is discovered. (See Sections VII.G. and VII.H. for a discussion of liability and penalties.) Consequently, we expect that refiners and importers will voluntarily test every batch of highway diesel fuel produced or imported for their own purposes, including the need to demonstrate compliance with pipeline specifications.

Today's program requires all refiners that on January 1, 2000 produced—or by June 1, 2006 expect to produce—highway diesel fuel for U.S. sale to

<sup>206</sup> However, test variability is taken into account in determination of compliance for diesel fuel at locations downstream of the refinery or import facility. See Section VII.C.1.

<sup>207</sup> However, any refiner producing highway diesel fuel complying with the 500 ppm standard for use in pre-model year 2007 motor vehicles, under any of the several refiner flexibility options, would have to maintain records designating each batch as complying with the 15 ppm standard or the 500 ppm standard.

register with EPA. Similarly, all importers that on January 1, 2000 imported—or by June 1, 2006 expect to import—highway diesel fuel into the U.S. also need to register with EPA. This registration process will provide an essentially complete and up-to-date picture of the universe of highway diesel suppliers that exist at the beginning of this program. Refiners and importer must register by December 31, 2001. See Section VII.E. below for more details about registration requirements.

## 2. Refiner and Importer Temporary Compliance Option Provisions and the Credit Trading Program

As described in Section IV.A.2 above, today's final rule adopts a program that allows refiners and importers to transition in the production and importation of 15 ppm sulfur content diesel fuel. The temporary compliance option is available to all refiners and importers and includes a credit averaging, banking, and trading program. This temporary compliance option allows a refiner or importer to designate and sell a certain percentage of its highway diesel fuel as fuel subject to a 500 ppm sulfur standard, for use in pre-2007 model year heavy-duty vehicles.

Section IV.A.2 above describes most of the compliance requirements associated with the temporary compliance option. The paragraphs below supplement the earlier information.

### a. Early Credits Program

As discussed in Section IV.A.2.a, today's regulation allows refiners and importers to generate early credits (prior to June 1, 2006) under limited circumstances. Most of the compliance requirements associated with the early credits program are described in that section. The following paragraphs add certain supplemental information.

The early credits program has two sets of provisions: (1) credits generated after May 31, 2005 but before June 1, 2006, and (2) credits generated after June 1, 2001 but before May 31, 2005. For a refiner or importer to generate early credits after May 31, 2005, it must demonstrate that the 15 ppm fuel produced early was segregated in the distribution system and not commingled with current 500 ppm sulfur fuel. Only that volume the refiner could verify was actually sold as 15 ppm fuel at retail or to centrally-fueled fleets would be eligible for early credits. Prior to generating credits, the refiner or importer must submit a notification to EPA and demonstrate how it will ensure segregation of the fuel from other

highway diesel fuel and that the fuel will be sold as 15 ppm fuel (*e.g.*, through voluntary pump labeling and/or through information provided in PTDs).

The program also specifies that early credits can be generated prior to June 1, 2005. In this case, however, the refiner or importer must demonstrate that the 15 ppm fuel will be used in vehicles certified to meet the 2007 particulate matter standard being adopted today for heavy-duty engines (0.01 g/bhp-hr) or in vehicles with retrofit technologies that achieve emission levels equivalent to the 2007 NO<sub>x</sub> or PM standard verified as part of a retrofit program administered by EPA or a state. (See Section VIII for further discussion of the credit program for heavy-duty engines.) To meet this condition, the refiner or importer must notify EPA, and in its notification it must demonstrate that any early credits that it claims are only for the volume of 15 ppm fuel that is dispensed into vehicles meeting the emission standards as described above (*e.g.*, into designated fleet vehicles).

All early credits generated, banked, transferred, obtained or used must be identified as early credits in records and in reports. The refiner's annual pre-compliance reports must provide the volume of early credit fuel produced, credits generated, credits transferred, and continued demonstration that the early credit fuel is sold appropriately (*i.e.*, as 15 ppm fuel after May 31, 2005, or into vehicles meeting the 2007 standards up to May 31, 2005).

### b. Credit Use in a Credit Deficit Situation

Today's rule allows a refinery or importer to have a credit deficit in any given year (as long as the deficit does not exceed five percent of its annual highway diesel fuel production) so long as the refinery or importer makes up for that credit deficit the next year. In other words, the year following the deficit the refiner or importer must have enough credits (or actual production volume of 15 ppm fuel) to cover the previous year's deficit and to cover the current year's compliance. A refinery or importer (by PADD) must use credits to cover its own compliance before it can transfer credits to another refinery or importer, and although a refinery is allowed to be in deficit for a given year, it cannot lawfully transfer credits in the deficit year.

### c. Resolving Issues of Invalid Credits

We recognize that there is potential for credits to be generated by one party and subsequently purchased and used in good faith by another party, yet the credits are later found to have been

calculated or created improperly, or otherwise found to be invalid. As with the RFG rule and the Tier 2/Gasoline Sulfur rule, invalid credits purchased in good faith cannot be legally used. To allow such use would not be consistent with the environmental goals of the regulation. Further, both the seller and purchaser of invalid credits would have to adjust their credit calculations to reflect the proper credits and either party (or both) could be deemed in violation if the adjusted calculations demonstrated noncompliance.

Nevertheless, our strong preference is to hold the credit seller liable for the violation, rather than the credit purchaser. As a general matter we would expect to enforce a shortfall in credit compliance calculations against the credit seller, and we would expect to enforce a compliance shortfall (caused by the good faith purchase of invalid credits) against a good faith purchaser only in cases where we are unable to recover sufficient valid credits from the seller to cover the shortfall. Moreover, in settlement of such cases we would strongly encourage the seller to purchase credits to cover the good faith purchaser's credit shortfall. EPA will consider the covering of a credit deficit through the purchase of valid credits a very important factor in mitigation of any case against a good faith purchaser, whether the purchase of valid credits is made by the seller or by the purchaser.

### d. Compliance Provisions

Today's rule includes compliance provisions under the temporary compliance option to allow the determination of the volumes of each of the two grades of highway diesel fuel produced or imported by each participating refinery or importer. For parties participating in the credit program, the rule includes provisions to ensure compliance with the credit generation, banking and trading provisions. The requirements include the designation of each batch of highway diesel fuel as meeting either the 500 ppm sulfur standard or the 15 ppm highway diesel sulfur standard; maintenance of records concerning the volumes of each grade of highway diesel fuel produced (and for foreign refiners and importers, volumes by PADD of import); and maintenance of records concerning the generation, use, transfer and purchase of credits, if applicable (by PADD in the case of foreign refiners and importers). Beginning in 2007, annual compliance reports demonstrating compliance with the applicable provisions are required. These recordkeeping and reporting



requirements are discussed more fully in Section VII.E below.

The rule also includes enforcement and compliance provisions to assure that highway diesel fuel subject to the 15 ppm sulfur standard is not caused to exceed the standard by being contaminated with highway diesel fuel subject to the 500 ppm sulfur standard (or other high sulfur products such as nonroad diesel fuel), and to assure that 500 ppm diesel fuel is not introduced into model year 2007 and later motor vehicles. Participating refiners and importers are required to provide identifying information on product transfer documents for highway diesel fuel subject to the 500 ppm standard to help prevent contamination of 15 ppm product. (As discussed more fully below, transfers of 15 ppm highway diesel fuel must also be accompanied by product transfer documents identifying such fuel.)

e. Additional Provisions for Importers of Diesel Fuel and for Foreign Refiners Subject to the Temporary Compliance Option and Hardship Provisions

Since today's final rule includes several compliance options that can be used by diesel fuel importers and foreign refiners, we are also including specific compliance and enforcement provisions to ensure compliance for imported highway diesel fuel. These special foreign refiner provisions are similar to those under the conventional gasoline regulations and the gasoline sulfur regulations (see 40 CFR 80.94 and 80.410).

Under today's rule, standards for highway diesel fuel produced by foreign refineries must be met by the importer, unless the foreign refiner has been approved to produce highway diesel fuel under the temporary compliance option or hardship provisions of today's rule. If the foreign refiner is so approved, the volume requirements are to be met by the foreign refinery and the foreign refinery would be the entity generating, using, banking or trading credits for the highway diesel fuel produced and imported into the U.S.

Any foreign refiner that applies for and obtains approval to produce highway diesel fuel subject to the temporary compliance option or hardship provisions will be subject to the same requirements as domestic refiners operating under the same provisions. Additionally, foreign refiners are subject to provisions similar to the provisions at 40 CFR 80.94 and 80.410, which include:

—Segregating highway diesel fuel produced at the foreign refinery until it reaches the U.S. and separately

tracking volumes imported into each PADD;

- Controls on product designation;
- Load port and port of entry testing;
- Attest requirements; and
- Requirements regarding bonds and sovereign immunity.

These provisions aid the Agency in tracking highway diesel fuel from the foreign refinery to its point of import into this country. We believe these provisions are necessary and sufficient to ensure that foreign refiners' compliance can be monitored and that the requirements of today's rule can be enforced against foreign refiners. (For more discussion of the rationale for these enforcement provisions, see preamble to the final RFG/CG foreign refineries rule (see 62 FR 45533 (August 28, 1997) and the gasoline sulfur rule, 40 CFR 80.410).)

3. Refiner Hardship Provisions

a. General Refiner Hardship Provisions

Section IV.C. above describes two types of hardship provisions for which any refiner may petition. We will consider such petitions in cases of extreme unforeseen circumstances and of extreme hardship circumstances. Petitions for extreme unforeseen circumstances may be submitted at any time; petitions for extreme hardship circumstances must be submitted to EPA by June 1, 2002. If any relief granted includes allowing the refiner to produce 500 ppm highway diesel fuel (or additional 500 ppm highway diesel fuel beyond that allowed under the temporary compliance option) for use in pre-2007 heavy-duty vehicles and engines, we would apply enforcement provisions at least as stringent as those that apply for the temporary compliance option.

Any application for hardship relief later found to be based on false or inaccurate information will be void ab initio.

b. Small Refiner Hardship Provisions

Section IV.C.1 above describes three small refiner relief provisions. Section IV.C.1.b defines "small refiner," Section IV.C.1.c describes the special provisions that approved small refiners are eligible for, and Section IV.C.1.d describes how a refiner applies for status as a small refiner. Section VII.E below describes the additional information that small refiners need to include in their application for small refiner status, in their pre-compliance reports, and in their annual compliance reports (these requirements vary depending on which small refiner provision they choose). Any application for small refiner status

will be void ab initio if approval is based on false or inaccurate information.

For an approved small refiner to use the Diesel/Gasoline Compliance Date Option (described in Section IV.C. above) at one or more refineries, it must fulfill two main conditions: (1) 100 percent of the highway diesel volume it produces during each annual compliance period starting June 1, 2006 must meet the 15 ppm standard, and (2) the actual volume of highway diesel fuel it produces during each annual compliance period through 2010 must be at least 85 percent of its 1998–1999 baseline highway diesel fuel volume (i.e., through the end date of the extended small refiner interim gasoline program). If a refiner at some point did not fulfill one or both of these conditions, it would forfeit the entire three year extension (or any remaining portion of the extension) of its Tier 2/Gasoline Sulfur small refiner standards and would thus need to comply with the 30/80 ppm sulfur standards by January 1, 2008. During the period when the national gasoline sulfur standard would otherwise be in effect for a small refiner (2008–2010), if the refiner fails to meet the two conditions above, it would be subject to the 30/80 gasoline sulfur standard for that year and future years.

However, a small refiner may elect to petition EPA to permanently opt out of this Diesel/Gasoline Compliance Date Option and opt into another small refiner option or into the temporary compliance option, so long as it does so for the full year that the change in program options takes place. Once it makes that election, it must thereafter meet the 30/80 gasoline sulfur standard.

c. Relief for Refiners Supplying Gasoline to the Tier 2 Geographic Phase-In Area (GPA)

As discussed in Section IV.B, refiners or importers supplying gasoline to the Geographic Phase-In Area (GPA) established in the Tier 2/Gasoline Sulfur program may apply for an additional two years to meet interim Tier 2 GPA gasoline sulfur standards (through December 31, 2008). Similar to the criteria for small refiners under the Diesel/Gasoline Compliance Date Option above, a refiner wishing to receive this extension of the Tier 2 GPA standards must meet two main conditions: (1) 100 percent of the highway diesel volume it produces during each annual compliance period starting June 1, 2006 must meet the 15 ppm standard, and (2) the actual volume of highway diesel fuel it produces during each annual compliance period through 2008 must be at least 85 percent

of its 1998–1999 baseline highway diesel fuel volume (i.e., through the end date of the extended GPA gasoline program). Refiners may not participate both in this option and the temporary compliance option.

To be eligible for this option, a refiner must apply to EPA in writing by December 31, 2001, at the same time that it registers as a highway diesel fuel producer with EPA. As with applications by refiners for “small refiner” status, a refiner’s application must submit its average annual highway diesel volume baseline for 1998 and 1999 for each of its refineries it expects to be covered by the GPA provisions under today’s program.

If a refiner did not fulfill one or both of the conditions above, it would forfeit the entire two-year extension of the GPA standards, or any remaining extension, and would thus need to comply with the 30/80 ppm sulfur standards by January 1 of the following year.

However, a refiner may elect to petition EPA to permanently opt out of this GPA program and opt into the temporary compliance option, so long as it does so for the full year that the change in program options takes place. Once it makes that election, it must thereafter meet the 30/80 gasoline sulfur standard.

### *C. What Requirements Apply Downstream of the Refinery or Import Facility?*

#### 1. Downstream Enforcement of the Standards

In the NPRM, we proposed an industry-wide 15 ppm cap on sulfur content for highway diesel fuel. In the proposal we stated our belief that refiners would likely have to produce diesel fuel meeting a 7–8 ppm average sulfur content in order to ensure compliance downstream. We received comments to the NPRM indicating that enforcing the 15 ppm sulfur cap at all levels of the distribution system downstream of the refinery or import facility would effectively require refiners to produce diesel fuel having a maximum sulfur content of 7 ppm due to variability in sulfur content test results that may occur between laboratories when testing the same sample of diesel fuel for sulfur content. Commenters stated that at test reproducibility level of  $\pm 4$  ppm,<sup>208</sup> refiners would have no assurance of downstream compliance with the 15 ppm cap if they produced any fuel with a sulfur content greater than 7 ppm. Consequently, commenters suggested

<sup>208</sup> The NPRM preamble suggested a possible reproducibility level of 4 ppm.

either that we adopt a less stringent downstream sulfur standard, based on test variability, as was done in the Tier 2/Gasoline Sulfur rule (40 CFR 80.210), or that we state a downstream test tolerance, based on test variability.

After considering the comments, we agree that it is appropriate to recognize test variability in determination of compliance with the sulfur standard downstream of the refinery or import facility. However, we anticipate that the reproducibility of sulfur test methods is likely to improve to two ppm or even less by the time the rule goes into effect. Thus, today’s rule provides that for all 15 ppm sulfur highway diesel fuel at locations downstream of the refinery or import facility, sulfur test results can be adjusted by subtracting 2 ppm to account for the expected reproducibility of sulfur test methods. The sole purpose of this downstream compliance provision is to address test variability concerns. With this change, we anticipate that refiners will be able to produce diesel fuel at an average level of approximately 7–8 ppm, as was intended by the proposal, without fear of causing a downstream violation due solely to test variability. As test methods improve in the future, we may reevaluate whether two ppm is the appropriate allowance for purposes of this compliance provision.

This change is not expected to undermine the environmental goals of the regulation since it should not result in diesel fuel exceeding the 15 ppm sulfur standard at any point in the distribution system. All highway diesel fuel subject to the 15 ppm standard is still required to meet the 15 ppm standard at the refinery gate, without allowance for test variability.<sup>209</sup> The purpose of taking testing variability into account in compliance determinations for fuel sampled downstream of the refinery or import facility is merely to ensure that fuel actually meeting the 15 ppm cap is not rejected by pipelines or otherwise treated as noncompliant due to concerns about testing variability. It is not expected to result in any increase in the actual sulfur content of highway diesel fuel above 15 ppm at any point in the distribution system.

#### 2. Other Provisions

##### a. Implementation Dates

As discussed in Section IV.A, today’s rule staggers the implementation dates for highway diesel fuel for use in 2007

<sup>209</sup> Once motor vehicle diesel fuel is moved from the tank in which it was blended at the refinery (and which the refiner’s designation of the fuel as meeting the 15 ppm standard was based), the two ppm adjustment applies.

and later vehicles to comply with the 15 ppm sulfur standard, based on a facility’s position in the distribution system. Refiners and importers must meet the 15 ppm sulfur standard by June 1, 2006. Fuel in the distribution system downstream of the refinery or import facility, including fuel at truck loading terminals, but not including fuel at retail outlets or wholesale purchaser-consumers, must be in compliance by July 15, 2006. Highway diesel fuel at retailers’ and wholesale purchaser-consumers’ storage tanks must be in compliance by September 1, 2006, and pump labeling requirements (see Section VII.C.2.c below) also must be in place by that date. We believe the dates finalized in today’s rule will allow sufficient time for downstream parties to transition tanks from 500 ppm sulfur levels to 15 ppm sulfur levels.

The date by which all highway diesel fuel produced by refiners must meet the 15 ppm sulfur standard is June 1, 2010.<sup>210</sup> The final compliance date for all highway diesel fuel in the distribution system to meet the 15 ppm standard, other than at retail outlets and wholesale purchaser-consumer facilities, is October 1, 2010. The final compliance date for all highway diesel fuel at retail and wholesale purchaser-consumer facilities to meet the 15 ppm sulfur standard is December 1, 2010.

##### b. Product Segregation and Contamination

Under today’s diesel sulfur program, it is imperative that distribution systems segregate highway diesel fuel from high sulfur distillate products such as home heating oil and nonroad diesel fuel. The sulfur content of those products is frequently as high as 3,000 ppm. We are also concerned about potential misfueling at retail outlets and wholesale purchaser-consumer facilities, even if segregation of the different grades of diesel fuel has been maintained in the distribution system. Thus, certain downstream compliance and enforcement provisions of the rule are aimed at both preventing contamination of highway diesel fuels with fuels containing higher levels of sulfur, and preventing misfueling of motor vehicles with high sulfur fuels.

Similarly, it is imperative that all parties in the distribution system avoid contamination of 15 ppm highway diesel fuel with 500 ppm highway diesel fuel. Thus, the final rule has adopted a requirement for product

<sup>210</sup> Under the temporary compliance option, for the period from January 1, 2010 through May 31, 2010, refiners can produce 500 ppm fuel only through the use of credits.

transfer documents accompanying deliveries of motor vehicle diesel fuel to identify the sulfur standard it meets and its allowed use. All parties in the distribution system face liability if highway diesel fuel is contaminated such that it fails to meet the applicable standard.

We are also adopting provisions designed to discourage the downgrading of 15 ppm diesel to 500 ppm diesel in the distribution system during the initial years of the program when the optional compliance provision is in effect. Our concern is that if 15 ppm diesel is routinely downgraded and sold as 500 ppm fuel, this practice could lead to availability problems (*i.e.*, risk of 15 ppm not being widely available across the country). We fully recognize that some amount of 15 ppm downgrading will be necessary where the 15 ppm fuel becomes contaminated in the distribution system (*e.g.*, pipeline interfaces). In fact, one advantage of the temporary compliance option is that if 15 ppm fuel becomes contaminated, it can still be sold as highway fuel (downgraded to 500 ppm fuel), rather than downgrading it to off-highway fuel. However, we also recognize that there is the potential for parties in the distribution system to intentionally mix 15 ppm product with 500 ppm fuel, and still sell the product as 500 ppm fuel. While we don't expect this practice to be widespread, it could occur, especially where there is only a small price differential between the two fuels.

Therefore, we are restricting the volume of 15 ppm fuel that can be downgraded to 500 ppm highway diesel fuel at each point in the distribution system (downstream of the refinery gate) to not more than 20 percent on an annual basis. Each party in the distribution system subject to this provision will be required to meet this requirement separately, based on the amount of 15 ppm fuel it receives and transfers/sells to the next party (or end user, in the case of retailers and wholesale purchaser-consumers) on an annual basis. We believe that this limit will be more than sufficient to allow for some downgrading for any contamination that may occur, while still being restrictive enough to discourage downgrading and commingling of 15 ppm fuel with 500 ppm fuel. These provisions will be in effect through May 31, 2010.

We recognize that, in some parts of the country, highway-grade diesel fuel is commonly sold into off-highway markets, due to limitations in the distribution system for carrying one grade of diesel. We do not want to preclude this practice in the future;

thus, we are not preventing 15 ppm diesel from being downgraded to off-highway fuel. The downgrading restriction applies only to 15 ppm downgraded to 500 ppm highway diesel fuel. We do not anticipate increased instances of downgrading to off-highway diesel fuel relative to today, given the increase in the price differential between highway diesel and off-highway diesel fuel that will likely result from this program. Therefore, we do not believe it is necessary to impose a regulatory restriction on downgrading of 15 ppm highway diesel to off-highway diesel.

All parties in the distribution system downstream of the refinery gate are subject to this provision, except for those retailers that offer for sale and wholesale purchaser-consumers that use 15 ppm fuel (either as the only grade of diesel or in addition to 500 ppm diesel). In other words, the only retailers and wholesale purchaser-consumers that are subject to this requirement are those that offer for sale or use only 500 ppm diesel (but not 15 ppm diesel).

Since all parties in the distribution system are required by other provisions in this final rule to maintain product transfer documents, which will indicate whether the diesel fuel meets the 15 ppm or 500 ppm standard as well as the volume of such fuel, we are not requiring new recordkeeping requirements beyond these to demonstrate compliance with these provisions. The parties will merely have to ensure that at the end of each year during the period the temporary compliance option is in effect that they comply with the 20 percent requirement based on the incoming and outgoing PTD records described in Section VII.E.5 below.

#### c. Diesel Fuel Pump Labeling

As discussed in Section IV.A.2 above and in the Chapter IV of the RIA, we believe that clear information about the proper fuel to use and the consequences of misfueling will minimize the potential for misfueling of new-technology vehicles. Under our final fuel program approximately 75% of the fuel in each PADD will meet the 15 ppm standard during the first few years. We believe that this will ensure that the fuel will be widely available in every part of the United States. Moreover, within four years all highway diesel fuel will meet this standard. Under these circumstances we believe the potential for misfueling will be limited. Nevertheless, we did receive considerable comment expressing concerns over the potential for misfueling.

In addition to the required labels on diesel fuel pumps described below, we believe that the use of unique nozzles, color-coded scuffguards, or dyes to distinguish the grades of diesel fuel may be useful in preventing accidental misfueling. While we are not finalizing any requirements today, we will plan to work with the vehicle manufacturers and representatives of the fuel industry and other interested stakeholders over the next several years to develop workable solutions that are consistent with current industry practices and other regulatory requirements.

For any multiple-fuel program like the temporary compliance option adopted today, clearly labeling diesel fuel pumps is vital for end users to distinguish between the two grades of fuel. We received comments on the NPRM that concurred with our assessment in the proposal that pump labels, in conjunction with vehicle labels, would also have the effect of helping to help prevent misfueling of motor vehicles with high sulfur diesel fuel. Section VI.G. above describes the labels that manufacturers will place on vehicle and information that will be provided to vehicle owners. Today's rule also adopts pump labeling requirements for retailers and wholesale purchaser-consumers similar to those we proposed, but with modifications to account for the availability of diesel fuel subject to the 500 ppm sulfur standard for use in pre-2007 motor vehicles. The text of the labels appears below; the specific requirements for label size and appearance are found in the regulatory language for this rule.

For pumps dispensing 15 ppm diesel fuel, the label will read as follows:

#### LOW-SULFUR DIESEL FUEL

Recommended for use in all diesel highway vehicles.

*Required* for model year 2007 and later highway vehicles.

For pumps dispensing 500 ppm diesel fuel the label will read as follows:

#### HIGH-SULFUR DIESEL FUEL—WARNING

May damage model year 2007 and later highway vehicles.

Federal Law *prohibits* use in these vehicles.

Finally, for pumps dispensing nonroad diesel fuel that are located at the same retail outlet as highway diesel fuel pumps, the label will read as follows:

#### NONROAD DIESEL FUEL—WARNING

May damage highway vehicles.

Federal Law *prohibits* use in any highway vehicle.

### 3. Use of Used Motor Oil in New Diesel Vehicles

We understand that used motor oil is sometimes disposed of by blending it with diesel fuel for use as fuel in diesel vehicles. Such practices range from blending used motor oil directly into the vehicle fuel tank, to blending it into the fuel storage tanks, to blending small amounts of motor oil from the vehicle crank case into the fuel system as the vehicle is being operated. To the extent such practices could cause vehicles to exceed their emissions standards, the person blending the oil, or causing or permitting such blending, could be considered to be rendering emission controls inoperative in violation of Section 203 of the CAA and potentially liable for a civil penalty (Section 203(a)(3) of the Act, 42 U.S.C. 7522(a)(3)).

Since current formulations of motor oil contain very high levels of sulfur, the addition of used oil to highway diesel fuel could substantially impair the sulfur-sensitive emissions control equipment expected to be used by engine manufacturers to meet the emissions standards in today's rule. Depending on how the oil is blended, it could increase the sulfur content of the fuel burned in the vehicle by as much as 200 ppm. As a result, we believe blending used oil into highway diesel fuel could render inoperative the emission control technology on the vehicle and potentially cause driveability problems.

Therefore, today's rule prohibits any person from introducing or causing or allowing the introduction of used motor oil, or diesel fuel containing used motor oil, into the fuel delivery systems of vehicles manufactured in model year 2007 and later. The only exception to this is where the engine is explicitly certified to the emission standard with oil added and the oil is added in a manner consistent with the certification. Please refer to the Response to Comments document for a discussion of concerns raised by commenters on this issue.

### 4. Use of Kerosene in Diesel Fuel

As we discussed in the NPRM, kerosene is commonly added to highway diesel fuel to reduce fuel viscosity in cold weather. Today's rule will not limit this practice. Consistent with the proposal, under today's rule, kerosene that is used, intended for use, or made available for use as or for blending with 15 ppm sulfur highway diesel fuel is itself required to be classified as "motor vehicle diesel fuel" and meet the 15 ppm standard, as well

as the standards for aromatics and cetane (see Section 80.2(y) of the regulatory language following this preamble). This classification for highway fuel use may be made by the fuel's refiner or may be made by a downstream party at the point when that party chooses to use the kerosene in its possession for highway fuel use.

To help ensure that only distillates that comply with the 15 ppm highway diesel fuel standard are blended into 15 ppm highway diesel fuel, today's rule has adopted the proposed requirement that kerosene meeting the 15 ppm standard and distributed by the transferring party for use in motor vehicles, must be accompanied by PTDs accurately stating that the product meets the 15 ppm sulfur standard (See Section VII.E.5. below).

As a general matter, any party who blends kerosene, or any blendstock, into motor vehicle diesel fuel, or who produces motor vehicle diesel fuel by mixing blendstocks, is a refiner and would be subject the requirements and prohibitions applicable to refiners under the rule. However, under today's rule, in deference to the longstanding and widespread practice of blending kerosene into diesel fuel at downstream locations, downstream parties who only blend kerosene into motor vehicle diesel fuel will not be subject to the requirements applicable to refiners, provided that they do not alter the fuel in any other way. Further, downstream parties choosing to blend kerosene into 15 ppm highway diesel fuel will be entitled to the 2 ppm adjustment factor for both the kerosene and the diesel fuel into which it is blended at downstream locations, provided that the kerosene had been transferred to the party with a PTD indicating compliance with that standard. Sulfur test results from downstream locations of parties who do not have such a PTD for their kerosene will not be subject to this adjustment factor, either for the kerosene itself, or for the highway diesel fuel into which it is blended.

In order to ensure the continued compliance of 15 ppm fuel with the 15 ppm standard, downstream parties choosing to blend kerosene into 15 ppm highway diesel fuel are required by the final rule to either have a PTD for that kerosene indicating compliance with the 15 ppm standard, or to have test results for the kerosene establishing such compliance.

Any party who causes the sulfur level of 15 ppm highway diesel fuel to exceed 15 ppm by blending kerosene into highway diesel fuel, or by using high sulfur kerosene as highway diesel fuel, would be subject to liability for

violating the sulfur standard. Similarly, parties who cause the sulfur level of 500 ppm highway diesel fuel to exceed that standard by blending kerosene into the fuel, would also be subject to liability.

The rule does not require refiners or importers of kerosene to produce or import kerosene meeting the 15 ppm sulfur standard. However, we believe that refiners will produce low sulfur kerosene in the same refinery processes that they use to produce low sulfur highway diesel fuel, and that the market will drive supply of low sulfur kerosene for those areas where, and during those seasons when, the product is needed for blending with highway diesel fuel. Comments to the NPRM regarding this provision generally supported this approach.

### 5. Use of Diesel Fuel Additives

Diesel fuel additives include corrosion inhibitors, cold-operability improvers, and static dissipaters. Use of such additives is distinguished from the use of kerosene by the low concentrations at which they are used and their relatively more complex chemistry.<sup>211</sup> We proposed that diesel fuel additives used in highway diesel fuel meet the same cap on sulfur content required for the fuel itself. Additive manufacturers commented<sup>212</sup> that there was no need to impose a 15 ppm sulfur cap on such additives in order to effectively limit the sulfur content of finished diesel fuel. They asserted that imposing such a cap would result in unjustified costs and disruptions to the producers and users of diesel additives. Additive manufacturers also stated that for certain additives, such as static dissipaters needed to prevent explosion hazards at terminal facilities, there are currently no effective alternatives that comply with a 15 ppm cap on sulfur content.

Additive manufacturers suggested an approach whereby shipments of additives that have a sulfur content above 15 ppm would be accompanied by a product transfer document (PTD) that includes information on additive sulfur content, maximum recommended treatment rate, and the potential impact

<sup>211</sup> Diesel fuel additives are used at concentrations commonly expressed in parts per million. Diesel fuel additives can include specially-formulated polymers and other complex chemical components. Kerosene is used at much higher concentrations, expressed in volume percent. Unlike diesel fuel additives, kerosene is a narrow distillation fraction of the range of hydrocarbons normally contained in diesel fuel. See Section VII.C.4 above regarding the requirements associated with the addition of kerosene to diesel fuel.

<sup>212</sup> See comments of the American Chemistry Council, Docket Item IV-D-183 in Docket A-99-06 associated with this rule.

on the sulfur content of the fuel when the additive is used at the maximum recommended treatment rate. Under such an approach, they suggested that the use of diesel additives should be permitted to result in an increase in the sulfur content of the finished fuel of less than 0.5 ppm, such that fuel would effectively be required to meet a sulfur cap of 15.5 ppm.

In response to these comments, we are allowing the use of diesel fuel additives with a sulfur content greater than 15 ppm. However, we believe that this can be accomplished without allowing the 15 ppm cap on fuel sulfur content to be exceeded. The 15 ppm cap is based on our understanding of the level that is necessary to ensure the durability and proper operation of the emissions control hardware that will be used to comply with the emissions standards in today's rule. We believe that it is most appropriate for the market to determine how best to accommodate increases in the fuel sulfur content from the refinery gate to the end user, while maintaining the 15 ppm cap, and whether such increases result from contamination in the distribution system or diesel additive use. By providing this flexibility, we anticipate that market forces will encourage an optimal balance between the competing demands of manufacturing fuel lower than the 15 ppm sulfur cap, limiting contamination in the distribution system, and limiting the additive contribution to fuel sulfur content.

Our review of data submitted by additive and fuel manufacturers to comply with EPA's Fuel and Fuel Additive Registration requirements (40 CFR Part 79) indicates that additives to meet every purpose (including static dissipation) are currently in common use which meet a 15 ppm cap on sulfur content (see Chapter IV.D. of the RIA for more information on additives). Since such low-sulfur additives are currently in use side-by-side with high-sulfur additives, it is reasonable to conclude that there is not a significant difference in their cost. Even if not yet available for certain purposes, we believe that it is reasonable to assume that low-sulfur additives will become available before this rule is implemented in 2006. The ability of industry to provide low-sulfur additives is supported by the fact that diesel fuel meeting a 10 ppm cap on sulfur content has been marketed in Sweden for some time, and ARCO Petroleum recently began marketing fuel meeting a 15 ppm sulfur cap in California.

The unusually high sulfur content of a few additives may discourage their use in diesel fuel that meets a 15 ppm sulfur

cap. However, it will generally continue to be possible for additive manufacturers to market additives that contain greater than 15 ppm sulfur for use in highway diesel fuel. Such additives can also continue to be used in nonroad diesel fuel. Additive manufacturers that market such additives and blenders that use them in highway diesel fuel will have additional requirements to ensure that the 15 ppm sulfur cap on highway diesel fuel is not exceeded. Although today's rule may encourage the gradual retirement of additives that do not meet a 15 ppm sulfur cap for use in highway diesel fuel, we do not anticipate that this will result in disruption to additive users and producers or a significant increase in cost. Additive manufacturers commonly reformulate their additives on a periodic basis as a result of competitive pressures. We anticipate that any reformulation that might need to occur to meet a 15 ppm sulfur cap will be substantially accommodated within this normal cycle.

Today's rule limits the continued use in highway diesel fuel of diesel fuel additives that exceed 15 ppm sulfur to additives that are used at concentrations of less than one volume percent. We believe that this limitation is appropriate and will not cause any undue burden because the diesel fuel additives for which this flexibility was included are always used today at concentrations well below one volume percent. Further, one volume percent is the threshold above which the blender of an additive becomes subject to all the requirements applicable to a refiner (40 CFR 79.2(d)(1)).

The specific requirements in today's rule regarding the use of diesel fuel additives are as follows:

- Additives that have a sulfur content at or below 15 ppm must be accompanied by a PTD that states: "The sulfur content of this additive does not exceed 15 ppm."
- Additives that exceed 15 ppm sulfur may continue to be used in highway diesel fuel provided that they are used at a concentration of less than one volume percent and their transfer is accompanied by a PTD that lists the following:

- (1) The additive's maximum sulfur concentration
- (2) The maximum recommended concentration for use of the additive in diesel fuel, and
- (3) The contribution to the sulfur level of the fuel that would result if the additive is used at the maximum recommended concentration.

Blenders of additives that exceed 15 ppm in sulfur content will be held liable

if their actions cause the sulfur content of the finished fuel to exceed 15 ppm. In some cases, blenders may not find it feasible to conduct testing, or otherwise obtain information on the sulfur content of the fuel either before or after additive blending, without incurring substantial cost. We anticipate that blenders will manage the risk associated with the use of additives above 15 ppm in sulfur content under such circumstances with actions such as the following:

- Selecting an additive with minimal sulfur content above 15 ppm that is used at a low concentration, and
- Working with their upstream suppliers to provide fuel of sufficiently low sulfur content to accommodate the small increase in sulfur content which results from the use of the additive.

This is similar to the way distributors will manage contamination from their distribution hardware (tank trucks, etc.). Distributors will not necessarily test for fuel sulfur content after each opportunity for contamination, but rather will rely on mechanisms set up to minimize the contamination, and to obtain fuel sufficiently below the standard to accommodate the increase in sulfur content from the contamination.

The recordkeeping, reporting, and PTD provisions associated with these requirements are discussed in Section VII.E below. The liability provisions are discussed in Section VII.G below.

#### *D. What Are the Testing and Sampling Methods and Requirements?*

##### **1. Diesel Fuel Testing Requirements and Test Methods**

As part of the diesel fuel sulfur program adopted today, EPA is designating the test method that we will use in determining compliance for samples collected at all points in the distribution system. This designated method is called "Test Method for Total Sulfur in Liquid Aromatic Hydrocarbons and Their Derivatives by Oxidative Combustion and Electrochemical Detection," or ASTM D 6428-99.

In the notice of proposed rulemaking, we proposed to designate ASTM D 2622-98 with minor modifications as the designated test method for quantifying the sulfur content of diesel fuel. This designated test method would be the one that EPA would utilize in its own laboratory in order to determine whether a given sample taken at any point in the distribution system is in compliance with the appropriate diesel sulfur standard or not. We proposed to apply this designated test method not

just to this final rule, which will be effective in 2006, but also to the existing diesel sulfur requirements, which are currently in effect. The modifications were designed to ensure appropriate precision at low sulfur levels below 15 ppm. Specifically, the modifications consisted of substitution of a measurement blank that more closely resembles the boiling point range and density of diesel fuel and a change to the calibration line to ensure that it goes through zero.<sup>213</sup>

We received several comments related to the proposed test method. Some parties suggested further modifications to ASTM D 2622–98 and others recommended that we select ASTM D 5453–00 entitled, “Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Ultraviolet Fluorescence” as the designated test method in the regulation. We have considered the comments carefully and agree that it is desirable to choose an accepted ASTM method as our designated test method. However, we do not believe that ASTM D 5453 is capable of measuring all sulfur containing compounds. Specifically, we do not believe that it will measure sulfonates, which are found in certain diesel additives typically added at terminals. Because of the stringent 15 ppm sulfur standard adopted today, the sulfonate compounds in these additives may become significant contributors to the overall sulfur level of the fuel.

Under this final rule, there is no requirement for every-batch testing for refiners or importers. However, because the diesel sulfur standard will be enforced at all points in the fuel distribution system, we believe that refiners and importers will engage in such testing, because satisfactory test results may be used to form the basis for an affirmative defense in the event of a violation. Downstream fuel suppliers such as truck loading terminals that blend additives to highway diesel fuel may not find it practical to engage in testing every time they blend additives into diesel fuel. As described in the previous section, manufacturers of fuel additives will be required to provide appropriate information about how to blend the additive properly (the treatment rate) and will be required to retain samples of additive batches for the prescribed time period in order to demonstrate compliance with this regulation, as discussed in the previous section.

<sup>213</sup> For a detailed description of the proposed modifications to ASTM D 2622–98, see 65 FR 35530–35531 (June 2, 2000).

We believe that there is more than one test method that may be used to determine the sulfur content of diesel fuel at low levels and believe that it is appropriate to allow alternative analytical test methods as long as they are correlated to the designated test method to be used by EPA. The ASTM methods that are allowed as alternative test methods under this rule are ASTM D 3120–96, “Standard Test Method for Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Microcoulometry.” and ASTM D 4045–99, “Standard Test Method for Sulfur in Petroleum Products by Hydrogenolysis and Rateometric Colorimetry.” Furthermore, we will allow the use of the modified form of ASTM D 2622, which was proposed to be the designated test method, as an alternative test method. As stated above, results from the use of all alternative analytical test methods must be correlated to the designated test method.

We believe that choosing an appropriate ASTM method as our designated test method for enforcement testing purposes and allowing the use of these alternative test methods furthers the purposes of the “National Technology Transfer and Advancement Act of 1995” (NTTAA), section 12(d) of Public Law 104–113, and Office of Management and Budget (OMB) Circular A–119. Both of these documents are designed to encourage the adoption of standards developed by “voluntary consensus bodies” and to reduce reliance on government-unique standards where such consensus standards would suffice. In the future, we plan to adopt a performance based test method approach that would address the use of these alternative methods, including “in-house” test methods developed by individual refiners and importers. We also intend to continue working with the industry and ASTM in the future to develop and improve sulfur test methods, and will consider modifications to today’s rule as developments warrant.

We also received comments indicating that there would not be any field test equipment for 15 ppm diesel fuel available by 2006. With regard to field testing, we believe that the technology that will enable the development of appropriate equipment or modifications to existing equipment exists or will be developed in response to the requirements of this rule.

In the NPRM, we discussed a comment received in response to the ANPRM that ASTM D 2622–98 may not be suitable for determining the sulfur content of biodiesel fuel, or mixtures of

biodiesel and conventional diesel fuel. In response to the NPRM, we received comment indicating that significant modifications would be required to ASTM D 2622–98 in order to adapt it for use with biodiesel and biodiesel blends. We believe the selected method, ASTM D 6428–99, is appropriate for use with biodiesel and biodiesel blends. However, depending on the product, any of the test methods allowed by this rule may require some adaptation by the operator.

The test method for determination of sulfur in motor oil is ASTM D 4297–96, entitled, “Standard Test Methods for Elemental Analysis of Lubricant and Additive Components—Barium, Calcium, Phosphorus, Sulfur, and Zinc by Wavelength-Dispersive Fluorescence Spectroscopy.” This method uses the same apparatus as ASTM D 2622–98, but includes specific methodology to compensate for interferences caused by additives present in motor oil. Consistent with the goals of the NTTAA and OMB Circular A–119, and in order to provide greater flexibility for regulated parties, we recognize that ASTM D 5453–00 may be selected by regulated parties as an appropriate alternative analytical test method for the purpose of measuring sulfur in motor oil.

## 2. Diesel Fuel Sampling Methods

The final rule adopts the proposed sampling methods. There were no negative comments regarding these technical changes. The requirement to use these methods is effective June 1, 2001. These same methods were adopted for use in the Tier 2/Gasoline Sulfur rule.<sup>214</sup> These sampling methods are ASTM D 4057–95 (manual sampling) and D 4177–95 (automatic sampling from pipelines/in-line blending). We are requiring the use of these ASTM methods instead of the methods currently provided in 40 CFR part 80, Appendix G, for determining compliance under both the new 15 ppm sulfur standard, and the 500 ppm standard currently in place. That is because these methods have been updated by ASTM, and the updates have provided clarification and have eliminated certain requirements that are not necessary for sampling petroleum products such as diesel fuel.

<sup>214</sup> 65 FR 6833–34 (Feb. 10, 2000). These methods are also proposed for use under the RFG and CG rules. See 62 FR 37337 *et seq.* (July 11, 1997).

*E. What Are the Recordkeeping, Reporting and Product Transfer Document Requirements?*

1. Registration of Refiners and Importers

a. All Refiners and Importers

By December 31, 2001, refiners and importers that may produce or supply highway diesel fuel by 2006 must register with EPA. Specifically, refiners and importers that are either currently producing or supplying highway diesel fuel, or that expect to do so by June 1, 2006, must register. The registration must include the following information:

- Corporate name and address of the refiner or importer and any parent companies and a contact person
- Name and address of all refineries or import facilities (including, for importers, the port of entry and PADD)
- A contact person.
- Location of records
- Business activity (refiner or importer)
- Capacity of each refinery in barrels of crude oil per calendar day

b. Prospective Small Refiners

In addition to the basic registration requirements above, a refiner seeking status as a small refiner needs to apply for this status as a part of their registration and provide the average number of employees for all pay periods from January 1, 1999 to January 1, 2000, for the company, all parent companies, and all subsidiaries or joint ventures. The application also must include which small refiner option the refiner expects to use at each of its refineries.

c. Refiners Seeking an Extension of the GPA Gasoline Sulfur Standards

In addition to the basic registration requirements above, a refiner or importer seeking an extension of the special GPA gasoline sulfur standards (see Section IV.B above) must apply for such an extension in their registration.

2. Pre-Compliance Reports

a. All Refiners

As discussed in Section IV above, by June 1, 2003, all refiners and importers must report to EPA on their progress toward compliance with the highway diesel fuel sulfur standards adopted today. Subsequently, these pre-compliance reports are also due on June 1 of 2004 and 2005. EPA will maintain the confidentiality of information submitted in pre-compliance reports. We will present generalized data from the reports on a PADD basis in annual reports following the receipt of each year's pre-compliance reports. These reports are for information purposes

only and, while refiners must truthfully report on their projected plans in order for this provision to have any value, we will not hold refiners liable if their actual actions deviate from these reports. We fully expect that refiners' plans may change, which is why we are requiring these reports to be updated annually through 2005.

In their pre-compliance reports, refiners and importers need to include the following information:

- Any changes in their basic corporate or facility information since registration.
- Estimates of the volumes (in gallons) of 15 ppm fuel and, if applicable, 500 ppm fuel to be produced from crude oil in each refinery, as well as the volumes of each grade of highway diesel fuel produced from other sources.
- For entities expecting to participate in the credit program, estimates of numbers of credits to be earned and/or used.
- Information regarding engineering plans (e.g., design and construction), the status of obtaining any necessary permits, and capital commitments for making the necessary modifications to produce low sulfur highway diesel fuel, and actual construction progress. The pre-compliance reports due in 2004 and 2005 must provide an update of the progress in each of these areas.

b. Small Refiners

In addition to the information required for all refiners above, small refiners must provide additional information in their pre-compliance reports. The information required varies according to which small refiner option the refiner plans to use, as discussed in Section IV.C above. The following paragraphs summarize the supplementary information required for each small refiner option.

*500 ppm Option*

The pre-compliance report for a refiner planning use the 500 ppm Option must make a showing that sufficient sources of 15 ppm fuel will likely exist in the area. If after 2003 the sources of 15 ppm fuel decrease, the pre-compliance reports for 2004 and/or 2005 must identify this change and must include a supplementary showing that the sources of 15 ppm fuel are still sufficient.

*Small Refiner Credit Option*

Pre-compliance reporting for small refiners choosing this Small Refiner Credit option is identical to that for the 500 ppm option (that is, if the small refiner is also producing 500 ppm

highway diesel fuel), with the additional requirement that the refiner also report on any credits it expects to generate and sell.

*Diesel/Gasoline Compliance Date Option*

Pre-compliance reports from any small refiners expecting to use the Diesel/Gasoline Compliance Date Option must provide information showing that diesel desulfurization plans are on track. In addition to the information about the expansion of desulfurization capacity required above for all refiners, the pre-compliance reports for small refiners expecting to use this option need to reasonably show that the refiner will be in a position by June 1, 2006 to produce of 100 percent of the refiners highway diesel fuel at 15 ppm sulfur at a volume at least 85 percent of its baseline highway diesel volume.

c. GPA Refiners

As with small refiners expecting to use the Diesel/Gasoline Compliance Date Option above, pre-compliance report from any refiners or importers expecting to use the extension of the GPA gasoline sulfur standards must provide information showing that diesel desulfurization plans are on track. In addition to the information about the expansion of desulfurization capacity required above for all refiners, the pre-compliance reports for prospective GPA refiners need to reasonably show that the refiner will be in a position by June 1, 2006 to produce of 100 percent of the refiners highway diesel fuel at 15 ppm sulfur at a volume at least 85 percent of its baseline highway diesel volume.

3. Annual Compliance Reports

a. All Refiners

After the highway diesel sulfur requirements begin June 1, 2006, refiners and importers will be required to submit annual compliance reports that demonstrate compliance with the requirements of this final rule. The first annual compliance report will be due by the end of February 2007 (for the period of June 1, 2006 through December 31, 2006) and would be required annually through February 2011. A refiner's annual compliance reports must include the following information, for each refinery:

- The volumes of 15 ppm and 500 ppm sulfur highway diesel fuel produced from crude oil during the compliance period, as well as the volumes of each grade of highway diesel fuel produced from other sources.

—The number of credits, if any, used to demonstrate compliance with the 80 percent requirement for 15 ppm sulfur fuel, and their source(s).

—The number of credits, if any generated.

#### b. Small Refiners

As with pre-compliance reports, small refiners must supply additional information related to the small refiner option they are using in their annual compliance reports.

##### *500 ppm Option and Small Refiner Credit Option*

In their annual compliance reports, small refiners choosing the 500 ppm Option or the Small Refiner Credit Option need to show that the volume they produce of highway diesel fuel meeting the 500 ppm sulfur standard meets the lesser of the following values: (1) 105 percent of the average highway diesel volume it produced in calendar years 1998 and 1999 or (2) the average highway diesel volume it produced from crude oil in calendar years 2004 and 2005.

##### *Diesel/Gasoline Compliance Date Option*

A small refiner using this option needs to confirm in each annual compliance report that it continues to produce 100 percent of its highway diesel fuel at 15 ppm sulfur and that its highway diesel volume continues to be at least 85 percent of its baseline volume.

#### 4. Initial Confirmation of 15 ppm Fuel Production

Small refiners using the Diesel/Gasoline Compliance Date Option and refiners using the extension of the GPA gasoline sulfur standard must confirm to EPA by July 1, 2006 that they began on June 1, 2006 producing 100 percent of their highway diesel fuel at 15 ppm sulfur.

#### 5. Product Transfer Documents (PTDs)

##### a. Diesel Fuel

We are adopting the proposed requirements that refiners and importers provide information on commercial PTDs that identifies diesel fuel distributed for use in motor vehicles and that states the fuel complies with the 15 ppm sulfur standard. Since today's rule adopts provisions for production and sale of diesel fuel having a sulfur content of 500 ppm for use in pre-2007 model year vehicles, the rule also adopts provisions requiring PTDs to identify such fuel and state that its use in motor vehicles is limited to

pre-2007 motor vehicles.<sup>215</sup> We believe this additional information on commercial PTDs is necessary because of the importance of preventing commingling of highway diesel fuel with high sulfur distillate products, avoiding contamination of 15 ppm highway diesel fuel with 500 ppm highway diesel fuel, and preventing misfueling of model year 2007 and later vehicles with any fuel having a sulfur content greater than 15 ppm. In addition, we are requiring that each PTD include the volume of fuel delivered (for each grade, 15 ppm and 500 ppm), that is necessary to demonstrate compliance with the fuel downgrading restrictions discussed in Section VII.C.2.b above.

Except for transfers to truck carriers, retailers and wholesale purchaser-consumers, product codes may be used to convey the information. More explicit language on PTDs to these parties is necessary since employees of such parties are less likely to be aware of the meaning of product codes. PTDs are not required for transfers of product into motor vehicles at retail outlets or wholesale purchaser-consumer facilities.

To assure that downstream parties can determine whether kerosene, or other distillates, distributed for use for blending into highway diesel fuel to reduce viscosity in cold weather meets the 15 ppm sulfur standard, today's rule adopts the proposed requirement for PTD identification of distillates distributed for such use as meeting the 15 ppm standard.

Today's rule adopts the proposal to retain the current diesel rule's PTD requirement regarding the identification of dyed, tax-exempt highway diesel fuel. This provision is useful for wholesale purchaser-consumers that need to know that the diesel fuel they purchase is appropriate for tax exempt motor vehicle use despite the presence of red dye.<sup>216</sup>

##### b. Additives

The NPRM proposed that PTDs for additives for use in highway diesel fuel would be required to state that the additive complies with the 15 ppm sulfur standard. Today's rule has been modified to allow the sale of additives, for use by fuel terminals or other parties in the diesel fuel distribution system, that have a sulfur content greater than 15 ppm under specified conditions. As a result, under today's rule the PTD

<sup>215</sup> Such fuel can also be used in nonroad vehicles, whose fuel is currently unregulated.

<sup>216</sup> The federal tax code requires the use of red dye in both off-highway distillate fuels and in highway diesel fuel sold for tax exempt use.

provisions for such additives are modified as follows:

For additives that have a sulfur content not exceeding 15 ppm, the PTD must state: "The sulfur content of this additive does not exceed 15 ppm."

For additives that may have a sulfur content exceeding 15 ppm, the additive manufacturer's PTD, and PTDs accompanying all subsequent transfers, must provide: a warning that the additive's sulfur content exceeds 15 ppm; the maximum sulfur content of the additive; the appropriate amount of additive to blend to highway diesel fuel, stated as gallon of additive per gallon of diesel fuel; and the increase in sulfur concentration of the fuel the additive will cause when used at the specified concentration.

The proposed provisions for consumer additives for use in diesel motor vehicles are slightly modified in the final rule due to concerns that additives designed for nonroad engines could accidentally be introduced into motor vehicle engines if they have no label stating appropriate use. Under today's rule consumer additives for use in any diesel engines must be accompanied by information that states that the additive either: complies with the sulfur content requirements for diesel motor vehicles; or that it has a sulfur content exceeding 15 ppm and is not for use in model year 2007 or later motor vehicles. This information is necessary for consumers to determine if an additive is appropriate for diesel motor vehicle use.

#### 6. Recordkeeping Requirements

Refiners that produce (or importers that import) both 500 ppm highway diesel fuel and 15 ppm highway diesel fuel under the temporary compliance option or any hardship program, or that produce only 15 ppm sulfur content diesel fuel and that wish to generate credits (including early credits), must maintain records for each batch of highway diesel fuel produced, of the batch designations and the batch volumes. The refiner must maintain records regarding credit generation, use, transfer, purchase, or termination.

In general, refiners and importers participating in the temporary compliance option or any hardship program must keep records of the following information, as applicable for each refinery (and in the case of foreign refiners, separately by refinery and by PADD of import), or for importers, for each PADD:

—The total volume of highway diesel fuel produced or imported;



- The total volume of highway diesel fuel produced or imported meeting the 500 ppm; sulfur standard;
- The total volume of highway diesel fuel produced or imported meeting the 15 ppm sulfur standard;
- For small refiners or GPA refiners using the gasoline sulfur program extensions, a statement of the baseline volume and whether the volume of 15 ppm produced or imported fuel is at least equal to 85 percent of the baseline volume;
- The percentage of highway diesel fuel produced or imported meeting the 15 ppm sulfur standard before inclusion of credits;
- The volume of 15 ppm highway diesel fuel represented by credits;
- The percentage of 15 ppm highway diesel fuel produced or imported that is represented by credits;
- The number of credits in the refinery's or importer's possession at the beginning of the compliance period, separately by early credits and all other credits;
- The number of credits generated during the compliance period;
- The number of credits used, separately by early credits and all other credits;
- If any credits were obtained from or transferred to other parties, for each other party, its name, its EPA refiner or importer registration number, and the number of credits obtained from or transferred to the other party, provided separately for early credits and all other credits;
- The percentage of compliance with the 15 ppm motor vehicle diesel 80 percent volume requirement by use of credits (provided separately for early credits and all other credits);
- The number of credits that will carry over to the next averaging period, provided separately for early credits and all other credits;
- Records regarding test results, including mandatory quality assurance tests; and
- Contracts or other commercial documents that establish each transfer of credits.

Refiners approved for temporary hardship relief due to extreme unforeseen circumstances or extreme financial hardship must include certain information in their application for relief. The required information, and the factors we will consider in determining what relief, if any, is appropriate, are discussed in Section IV.B.3. Such refiners will also have reasonable recordkeeping and reporting requirements, which will be fashioned on a case-by-case basis depending on

the nature of any temporary waiver approved.

#### 7. Record Retention

Today's rule adopts the NPRM proposal that the retention period for all records required to be kept by the rule is 5 years. This is the same period of time required in other fuels rules, and it coincides with the applicable statute of limitations. We believe that for other reasons, most parties in the distribution system would maintain some or all of these records for this length of time even without the requirement.

This retention period applies to PTDs, records of any test results performed by any regulated party for quality assurance purposes or otherwise, along with supporting documentation such as date of sampling and testing, batch number, tank number, and volume of product. Business records regarding actions taken in response to any violations discovered are also required to be maintained for 5 years.

All records required to be maintained by refiners participating in the temporary compliance option or hardship options (or by importers of diesel fuel produced by a foreign refiner approved for the temporary compliance option or a hardship option), including small refiner and farmer cooperative and GPA options, are also covered by the retention requirement.

#### F. Are There Any Exemptions From the Highway Diesel Fuel Requirements?

##### 1. Research and Development

Today's rule exempts from the sulfur standards diesel fuel used for research, development and testing purposes (R & D), as was proposed in the NPRM. We recognize that there may be legitimate research programs that require the use of highway diesel fuel with higher sulfur levels than allowed under today's proposed rule. As a result, today's rule contains provisions for obtaining an exemption from the prohibitions for persons distributing, transporting, storing, selling, or dispensing highway diesel fuel that exceeds the standards, where such diesel fuel is necessary to conduct a research, development, or testing program.

Under the rule, parties seeking an R&D exemption are required to submit to EPA an application for exemption that describes the purpose and scope of the program and the reasons that the use of the higher-sulfur diesel fuel is necessary. Upon presentation of the required information, an exemption may be granted at the discretion of the Administrator, with the condition that EPA may withdraw the exemption *ab*

*initio* in the event the Agency determines the exemption is not justified. Fuel subject to this exemption is exempt from the other provisions of today's rule, provided certain requirements are met. These requirements include the segregation of the exempt fuel from non-exempt highway diesel fuel, identification of the exempt fuel on product transfer documents, pump labeling, and where appropriate, the replacement, repair, or removal from service of emission systems damaged by the use of the high sulfur fuel.

##### 2. Racing Vehicles

Today's rule adopts the NPRM proposal to provide no exemption from the sulfur content standard and other requirements of today's rule for diesel fuel used in racing vehicles. In the NPRM, we requested comment on whether such an exemption is needed and we received no comments supporting the need for such exemption. As we stated in the NPRM, we see no advantage for racing vehicles to use fuel having higher sulfur levels (or lower cetane or higher aromatic levels) than are required by today's rule, and we are concerned about the potential for misfueling of motor vehicles that could result from having a high sulfur (*e.g.*, 3,000 ppm) automotive fuel available in the marketplace. Consequently, the rule does not provide an exemption from the highway diesel fuel requirements for vehicles used in racing.

##### 3. Military Fuel

Based on EPA's existing definition of diesel fuel, we previously concluded that JP-8 military fuel is not subject to EPA's existing requirements for diesel fuel. Today's rule revises the definition of diesel fuel so that JP-5 and JP-8 military fuel that is used or intended for use in highway diesel motor vehicles will be subject to all of the requirements applicable to diesel fuel under today's rule.<sup>217</sup> However, today's rule also exempts JP-5 and JP-8 fuels from EPA's diesel fuel requirements if it is used in tactical military vehicles that have a national security exemption or if it is used in tactical military vehicles that are not covered by a national security exemption but for national security reasons, such as the need to be ready for immediate deployment overseas, need to be fueled on the same fuel as motor

<sup>217</sup> Any JP-5, JP-8, or other distillate product that is not designated by the refiner or importer as motor vehicle diesel fuel, and that does not otherwise meet the definition of motor vehicle diesel fuel, would not be included by the refiner or importer in any computation of motor vehicle diesel fuel volume for baseline or other purposes.

vehicles with a national security exemption. Use of JP-5 and JP-8 fuel not meeting the highway diesel fuel standards in a motor vehicle other than the tactical military vehicles described above is prohibited under today's rule.

Due to national security considerations, EPA's existing regulations allow the military to request and receive national security exemptions (NSE) for their motor vehicles from emissions regulations if the operational requirements for such vehicles warrant such an exemption. These provisions have worked successfully in the past to enable us to meet both our national air quality and security goals simultaneously. Today's rule does not change these provisions.

In discussions with the Department of Defense (DOD), DOD stated that certain tactical military vehicles must be ready to be shipped overseas quickly in response to an emergency and must be ready to be fueled on whatever fuel is available under tactical conditions (typically JP-8). To avoid problems experienced in the past when switching between fuel types in tactical vehicles, JP-8 has been selected as the common tactical fuel for use by the military in the U.S. and overseas. Thus, the use of the high sulfur fuel, which is normally supplied overseas under tactical situations, is expected to continue after the implementation of this rule. However, use of the high sulfur fuel in these engines equipped with the aftertreatment technology, necessary to meet the emissions requirements of today's rule could result in engine failure, driveability problems, and permanently destroy the emission control system.

Therefore, it appears that requiring tactical military vehicles that may be used outside of the U.S. to comply with the emissions requirements in today's rule is not compatible with the operational requirements for such vehicles. In their comments on the proposed rule, DOD stated that it would be appropriate for EPA to cover the tactical military vehicles that would otherwise be subject to the emissions regulations in today's rule under a national security exemption. We recognize the national security concerns raised by DOD, and will address this issue using the Agency procedures established for this purpose.<sup>218</sup> These guidelines are contained in EPA's "Guidelines for National Security Exemptions of Motor Vehicles and

<sup>218</sup> These guidelines are contained in EPA's "Guidelines for National Security Exemptions of Motor Vehicles and Motor Vehicle Engines—Guidelines for Tactical Vehicles/Engines"

Motor Vehicle Engines—Guidelines for Tactical Vehicles/Engines."

We also recognize that there are tactical military vehicles manufactured before the requirements of today's rule become effective that for national security purposes need to continue to be operated on JP-5 or JP-8 fuel while in the U.S. to facilitate their readiness to be fueled on whatever fuel is available overseas. Consistent with an exemption for certain military vehicles, EPA is also exempting diesel fuel from the sulfur standard in this rule, where the fuel is used in vehicles exempted from the emissions standards in this rule (pursuant to 40 CFR 85.1708) or in tactical motor vehicles that are not covered by a national security exemption but for national security reasons need to be fueled on the same fuel as motor vehicles with a national security exemption. To more clearly identify the tactical motor vehicles to be covered by the diesel fuel exemption the Department of Defense will submit a notification to EPA describing the rationale and supporting data for the request and a description of the covered tactical motor vehicles. The one-time notification should be sent to EPA by December 15, 2003 in order to provide sufficient time for EPA to review the information as well as lead time to the Department of Defense for logistics planning purposes. EPA will then respond to DOD identifying all vehicles that are covered by the fuel exemption. Based on data provided by the Department of Defense to date, EPA believes that providing an exemption for JP-5 and JP-8 fuel used in tactical motor vehicles does not have any significant environmental impact.

### *G. Liability and Penalty Provisions for Noncompliance*

#### 1. General

The liability and penalty provisions of the diesel sulfur rule are similar to the liability and penalty provisions found in the gasoline sulfur rule, RFG rule and other EPA fuels regulations.<sup>219</sup> Regulated parties are subject to prohibitions which are typical in EPA fuels regulations, such as selling or distributing fuel that does not comply with the standard, and causing others to commit prohibited acts. Liability also arises under the diesel rule for

<sup>219</sup> See section 80.5 (penalties for fuels violations); section 80.23 (liability for lead violations); section 80.28 (liability for volatility violations); section 80.30 (liability for diesel violations); section 80.79 (liability for violation of RFG prohibited acts); section 80.80 (penalties for RFG/CG violations); section 80.395 (liability for gasoline sulfur violations); section 80.405 (penalties for gasoline sulfur regulations).

prohibited acts specific to the diesel sulfur control program, such as introducing diesel fuel not meeting the 15 ppm sulfur standard into diesel motor vehicles of model year 2007 and later. In addition, parties will be liable for a failure to meet certain requirements, such as the recordkeeping, reporting, or PTD requirements, or causing others to fail to meet such requirements.

Under today's rule, the party in the diesel fuel's distribution system that controls the facility where the violation occurred, and other parties in that fuel's distribution system (such as the refiner, reseller, and distributor), are presumed to be liable for the violation.<sup>220</sup> As in the Tier 2 gasoline sulfur rule ("Tier 2 sulfur rule"), today's diesel sulfur rule explicitly prohibits causing another person to commit a prohibited act or causing non-conforming diesel fuel to be in the distribution system. Non-conforming means: (1) Diesel fuel with sulfur content above 15 ppm incorrectly designated as appropriate for model year 2007 and above motor vehicles or (2) diesel fuel with sulfur content above 500 ppm incorrectly designated as appropriate for any model year motor vehicle. Parties outside the diesel fuel distribution system, such as diesel additive manufacturers and distributors, would also be subject to liability for those diesel rule violations which could have been caused by their conduct.

Affirmative defenses are provided for each party deemed presumptively liable for a violation, and all presumptions of liability are rebuttable. In general, in order to rebut the presumption of liability, parties are required to establish that: (1) The party did not cause the violation; (2) PTD(s) exist which establish that the fuel or diesel additive was in compliance while under the party's control; and (3) the party conducted a quality assurance sampling and testing program. Diesel fuel refiners, diesel fuel additive manufacturers, and blenders of high sulfur additives into diesel fuel, would also be required to provide test results establishing the conformity of the product prior to leaving that party's control.<sup>221</sup> Branded

<sup>220</sup> An additional type of liability, vicarious liability, is also imposed on branded refiners under these fuels programs.

<sup>221</sup> The requirement of conforming test results was not included in the NPRM as an affirmative defense element for the fuel refiner. However, under both the NPRM and today's final rule, refiners need to establish that they didn't cause the violation. As a practical matter, refiners generally establish their lack of causation using such test results. The Agency believes that it is nonetheless important to require these test results as an affirmative defense element for refiners because under today's final rule, refiners are given the

refiners have additional affirmative defense elements to establish. The defenses under the diesel sulfur rule are similar to those available to parties for violations of the RFG, volatility, and the Tier 2 sulfur regulations. Today's final rule also clarifies that parent corporations are liable for violations of subsidiaries, in a manner consistent with the Tier 2 sulfur rule. Finally, the final diesel sulfur rule mirrors the Tier 2 sulfur rule by clarifying that each partner to a joint venture will be jointly and severally liable for the violations at the joint venture facility or by the joint venture operation.

As is the case with the other EPA fuels regulations, today's final diesel sulfur rule applies the provisions of section 211(d)(1) of the Clean Air Act (Act) for the collection of penalties. These penalty provisions subject any person that violates any requirement or prohibition of the diesel sulfur rule to a civil penalty of up to \$27,500 for every day of each such violation and the amount of economic benefit or savings resulting from the violation. A violation of a diesel sulfur cap standard constitutes a separate day of violation for each day the diesel fuel giving rise to the violation remains in the fuel's distribution system. Under the regulation, the length of time the diesel fuel in question remains in the distribution system is deemed to be twenty-five days unless there is evidence that the fuel remained in its distribution system a lesser or greater amount of time—the same time presumption that is incorporated in the RFG and Tier 2 sulfur rules. The penalty provisions are similar to the penalty provisions for violations of the RFG and the Tier 2 sulfur regulations.

EPA has included in today's rule two prohibitions for "causing" violations: (1) Causing another to commit a violation; and (2) causing non-complying diesel fuel to be in the distribution system. These causation prohibitions are like similar prohibitions included in the Tier 2

ability to produce high sulfur highway diesel fuel as well as low sulfur product. This makes the possibility of refiner causation of violations much more likely, and the production of conforming test results—the one most convincing piece of evidence which would establish the refiner's lack of causation—much more essential. Further, conducting such testing should not be a significant burden for refiners to comply with. Refiners typically already test their batches to assure component quality for commercial reasons, and refiners are usually the party in the distribution system with the most resources—both financial and analytical—to conduct quality testing. In any case, refiners may choose not to conduct this testing, since it is merely an affirmative defense element, and the tests would only become relevant once a violation is discovered.

gasoline sulfur regulations, and, as discussed in the preamble to that rule, EPA believes they are consistent with EPA's implementation of prior motor vehicle fuel regulations. See the liability discussion in the preamble to the Tier 2 final rule, at 65 FR 6812 et seq.

The prohibition against causing another to commit a violation would apply where one party's violation is caused by the actions of another party. For example, EPA may conduct an inspection of a terminal and discover that the terminal is offering for sale highway diesel fuel designated as complying with the 15 ppm sulfur standard, while it, in fact, had an actual sulfur content greater than the standard.<sup>222</sup> In this scenario, parties in the fuel's distribution system, as well as parties in the distribution system of any diesel additive that had been blended into the fuel, would be presumed liable for causing the terminal to be in violation. Each party, of course, would have the right to present an affirmative defense to rebut this presumption.

The prohibition against causing non-complying diesel fuel to be in the distribution system would apply, for example, if a refiner transfers non-complying diesel fuel to a pipeline. This prohibition could encompass situations where evidence shows high sulfur diesel fuel was transferred from an upstream party in the distribution system, but EPA may not have test results to establish that parties downstream also committed violations with this fuel.

The Agency intends to enforce the liability scheme of the diesel sulfur rule in the same manner that we have enforced the similar liability schemes in our prior fuels regulations. As in other fuels programs, we will attempt to identify the party most responsible for causing the violation in determining that party that should primarily be liable for penalties for the violation.

## 2. What Is the Liability That Additive Manufacturers and Distributors, and Parties That Blend Additives Into Diesel Fuel, Are Subject To?

### a. General

In the NPRM, the Agency did not propose that additive manufacturers or distributors would be presumed liable for any violations of the diesel regulation. Only parties that were in the diesel fuel distribution system were to be presumed liable for diesel fuel

<sup>222</sup> The violation would occur if EPA's test result showed a sulfur content of greater than 17 ppm, which takes into account the two ppm adjustment factor for testing reproducibility for downstream parties.

violations. Parties in the additive distribution system would only be subject to liability for fuels violations where the Agency established that they caused others (such as fuel distributors or retailers) to be in violation. This approach was followed because the NPRM prohibited the downstream blending into highway diesel fuel of any additive whose sulfur content exceeded the 15 ppm standard. This limitation reduced the potential that the additive could be the cause of sulfur non-compliance in fuel within the diesel distribution system.

Various additive manufacturers provided comments regarding the need for certain diesel fuel additives that may exceed the 15 ppm sulfur standard. Today's final rule, therefore, permits the blending of diesel additives with sulfur content in excess of 15 ppm into 15 ppm highway diesel fuel under limited circumstances, in response to those comments. As more fully discussed in section VII(C)(5) of this preamble, today's rule permits downstream parties to blend into 15 ppm highway diesel fuel additives having a sulfur content exceeding 15 ppm, provided that: (1) The blending of the additive does not cause the diesel fuel's sulfur content to exceed the 15 ppm sulfur standard; (2) the additive is added in an amount no greater than one volume percent of the blended product; and (3) the downstream party obtained from its additive supplier a product transfer document ("PTD") with the additive's sulfur content and the recommended treatment rate, and that it complied with such treatment rate, as appropriate.

Since the final rule permits the limited use in highway diesel fuel of additives with high sulfur content, the Agency believes it is now more likely that a diesel fuel sulfur violation could be caused by the use of high sulfur additives. This could result from the additive manufacturer's misrepresentation or inaccurate statement of the additive's sulfur content or recommended treat rate on the additive's PTD, or an additive distributor's contamination of low sulfur additives with high sulfur additives during transportation. The increased probability that parties in the additive distribution system could cause a violation of the sulfur standard warrants the imposition by the Agency of increased liability for such parties under the final rule. As one example of this, the final rule explicitly makes parties in the additive distribution system liable for the sale of nonconforming diesel fuel additives, even if such additives have not yet been blended into diesel fuel. In addition, the

final rule imposes presumptive liability on parties in the additive distribution system if diesel fuel into which the additive has been blended is determined to have a sulfur level in excess of its permitted concentration. This presumptive liability differs depending on whether the blended additive was designated as meeting the 15 ppm sulfur standard (a "15 ppm additive") or designated as a greater than 15 ppm sulfur additive (a "high sulfur additive"), as discussed below.

**b. Liability When the Additive Is Designated as Complying With the 15 ppm Sulfur Standard**

With the sole exception of diesel additives blended into highway diesel fuel at a concentration no greater than one percent by volume of the blended fuel, any additive blended into diesel fuel downstream of the refinery must have a sulfur content no greater than 15 ppm, and must be accompanied by PTD(s) accurately identifying them as complying with the 15 ppm sulfur standard.

All parties in the fuel and additive distribution systems are subject to presumptive liability if the blended fuel exceeds the sulfur standard (with the two ppm downstream adjustment applied when EPA tests the fuel subject to the 15 ppm sulfur standard). Low sulfur additives present a less significant threat to diesel fuel sulfur compliance than would occur with the use of additives designated as possibly exceeding 15 ppm sulfur. Thus, parties in the additive distribution system of the low sulfur additive will be permitted to rebut the presumption of liability by showing the following: (1) Additive distributors will only be required to produce PTDs asserting that the additive complies with the 15 ppm sulfur standard (2) additive manufacturers will also be required to produce PTDs complying in an accurate manner with the regulatory requirements, as well as producing test results (or retained samples on which tests could be run) establishing the additive's compliance with the 15 ppm sulfur standard prior to leaving the manufacturer's control. Once their presumptive liability would be refuted by producing such documentation in a convincing manner, these additive system parties would only be held responsible for the diesel fuel non-conformity in situations in which EPA can establish that the party actually caused the violation.

Under today's final rule, parties in the diesel fuel distribution system will have the typical presumptive liability defenses as proposed. For parties

blending an additive into their diesel fuel, the requirement of producing PTDs showing that the product complied with the regulatory standards will necessarily include PTDs for the additive that was used, affirming the additive's compliance as well as the fuel's.

**c. Liability When the Additive Is Designated as Having a Possible Sulfur Content Greater Than 15 ppm**

Under today's rule, if an additive manufacturer produces an additive for use in 15 ppm highway diesel fuel at a concentration no greater than one volume percent of the blended fuel, then the additive is permitted to have a maximum sulfur content above 15 ppm. However, if highway diesel fuel containing that additive is found by EPA to have high sulfur content, then all the parties in both the additive's and the fuel's distribution chain will be presumed liable for causing the diesel fuel violation. Since this type of high sulfur additive presents a much greater probability of causing diesel fuel non-compliance, parties in the additive's distribution system will have to satisfy an additional element to establish an affirmative defense. In addition to the elements of an affirmative defense described above, parties in the distribution system for such a high sulfur additive must also establish that they did not cause the violation, an element of an affirmative defense that is typically required in EPA fuel programs to rebut presumptive liability.

Parties in the diesel fuel's distribution system will essentially have to establish the same affirmative elements as proposed, with one addition. Blenders of high sulfur additives into 15 ppm sulfur diesel fuel, by the act of blending such an additive into that fuel, subject themselves to the need for establishing a more rigorous quality control program than would exist without the addition of such a high sulfur additive. The Agency believes that parties blending high sulfur additives into their 15 ppm sulfur diesel fuel should be required to produce test results establishing that the blended fuel was in compliance with the 15 ppm sulfur standards after being blended with the high sulfur additive. This additional defense element is required as an added safeguard to ensure diesel fuel compliance, since the blender has voluntarily chosen to use an additive which increases the risk of diesel fuel non-compliance.

**H. How Will Compliance With the Sulfur Standards Be Determined?**

In the NPRM, EPA proposed that compliance with the diesel sulfur standards would be determined based

on the sulfur level of the diesel fuel, as measured using the regulatory testing methodology. We further proposed that any evidence from any source or location could be used to establish the diesel fuel sulfur level, provided that such evidence is relevant to whether the level would have been in compliance if the regulatory sampling and testing methodology had been correctly performed. In today's action, consistent with the approach taken under the Tier 2 sulfur rule, EPA is adopting the proposed regulatory provisions.

The final regulations provide that the primary determinant of compliance with the standards will be the specified regulatory test method.<sup>223</sup> Additionally, other information may be used under the rule, including test results using non-designated test methods, if the evidence is relevant to determining whether the sulfur level would meet applicable standards had compliance been determined using the specified test methodology. Moreover, since evidence other than regulatory test results must be relevant to compliance using the regulation test method, EPA believes that the rule enables parties to rely with confidence on the proper use of the regulatory method.

For example, the Agency might not have sulfur results derived from the regulatory test method for diesel fuel sold by a terminal, yet the terminal's own test results, based on testing using methods other than those specified and approved in the regulations, could reliably show an exceedance of the sulfur standard. Under today's rule, evidence from the non-regulatory test method could be used to establish the diesel fuel's sulfur level that would have resulted if the regulatory test method had been conducted. This type of evidence is available for use by either the EPA or the regulated party, and could be used to show either compliance or noncompliance. Similarly, absent the existence of sulfur test results using the regulation method, commercial documents asserting the sulfur level of diesel fuel or additive could be used as some evidence of that sulfur level if the product would have been tested using the regulatory method.<sup>224</sup>

<sup>223</sup> Under today's final rule, several specified alternative test methods are also permitted, provided they have been properly correlated with the regulatory method.

<sup>224</sup> The ability to use such evidence is in addition to the presumption established under the final rule, that when a mandated product transfer document asserts that diesel fuel complies with the 500 ppm sulfur standard, the fuel accompanied by that transfer document will be presumed to comply with the 500 standard and not to comply with the 15

The Agency believes that the same statutory authority for EPA to adopt the Tier 2 sulfur rule's evidentiary provisions (Clean Air Act section 211(c)), provides appropriate authority for our adoption of the evidentiary provisions of today's diesel rule. For a fuller explanation of this statutory authority, see Section VI(I) of the Tier 2 final rule preamble, 65 FR 6815, February 10, 2000.

### VIII. Standards and Fuel For Nonroad Diesel Engines

Although this program covers only highway diesel engines and highway diesel fuel, our potential plans for nonroad diesel engines, and especially the sulfur content of nonroad diesel, fuel are clearly related. For example, depending on whether and how nonroad diesel fuel is regulated, factors including the costs, leadtime, environmental impacts, and impacts on competitive relationships in the marketplace associated with this program could be affected. We would need to address these factors in any future regulatory action on nonroad diesel fuel.

Because of these factors, various stakeholders inquired during the public comment period about the potential requirements that could apply to nonroad diesel fuel. Several states, environmental organizations, and other commenters urged us to take action on nonroad because of the nonroad contribution to air quality problems. The remainder of this section summarizes the background behind this issue and our current thinking about the future regulation of nonroad diesel engines and fuel.

After establishing an initial set of emission standards for nonroad diesel engines in 1994, we proposed in 1997, and finalized in 1998, a comprehensive program of emission standards for most diesel engines designed for nonroad use.<sup>225</sup> This program established NMHC + NO<sub>x</sub> and PM standards that are phasing in over the 1999–2006 time frame, with engines of different horsepower ranges coming into the program in different years. At the same time, we set long-term (“Tier 3”) NMHC + NO<sub>x</sub> standards, but not PM standards, for medium and high horsepower engines, to begin in 2006. This rule also included a plan to reassess the Tier 3 NMHC + NO<sub>x</sub> standards and to establish a PM test cycle and associated standards in the 2001 time frame. In addition, the

1998 rule anticipated an EPA reassessment of the NMHC + NO<sub>x</sub> standards for the smaller engines (less than 50 horsepower), which are to be phased in beginning in 2004 (referred to as nonroad “Tier 2” standards).

We did not include regulations on nonroad diesel fuel in the first diesel fuel sulfur control program which was established in 1993 for highway diesel fuel. We estimate that the average sulfur content for nonroad diesel fuel is currently around 3000 ppm,<sup>226</sup> as compared to the cap for highway diesel fuel of 500 ppm.<sup>227</sup>

We believe that any specific new requirements for nonroad diesel fuel would need to be carefully considered in the context of a proposal for further nonroad diesel engine emission standards. For the nonroad program, we expect to use the same systems-based approach as we used for the Tier 2/ Gasoline Sulfur program and today's highway diesel fuel and heavy-duty engine standards program. This is because of the close interrelationship between fuels and engines—the best emission control solutions may not come through either fuel changes or engine improvements alone, but perhaps through an appropriate balance between the two. This is especially significant given that engine manufacturers and diesel fuel refiners would need to address potential challenges such as capital cost, leadtime, and engineering and construction resources, of simultaneously meeting the highway standards under this program with the nonroad standards that may be implemented. Thus we need to address issues in both the fuel and engine arenas together.

The many issues connected with any rulemaking for nonroad engines and fuel warrant serious attention, and we believe it would be premature today for us to attempt to raise potential resolutions to them. We plan to initiate action in the future to formulate thoughtful proposals covering both nonroad diesel fuel and engines.

### IX. Public Participation

A wide variety of interested parties participated in the rulemaking process that culminates with this final rule. The formal comment period and five public hearings associated with the NPRM provided additional opportunities for public input. EPA also met with a variety of stakeholders, including

environmental and public health organizations, oil company representatives, auto company representatives, emission control equipment manufacturers, and states at various points in the process.

We prepared a detailed Response to Comments document that describes the comments received on the NPRM and presents our response to each of these comments. The Response to Comments document is available in the docket for this rule and on the Office of Transportation and Air Quality internet home page. Comments and our responses are also included throughout this preamble for several key issues.

### X. Administrative Requirements

#### A. Administrative Designation and Regulatory Analysis

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the Agency is required to determine whether this regulatory action will be “significant” and therefore subject to review by the Office of Management and Budget (OMB) and the requirements of the Executive Order. The order defines a “significant regulatory action” as any regulatory action that is likely to result in a rule that may:

- Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or,
- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, EPA has determined that this rule is a “significant regulatory action” because the engine standards, diesel fuel sulfur standards, and other regulatory provisions will have an annual effect on the economy in excess of \$100 million. Accordingly, we have prepared a Final Regulatory Impact Analysis (RIA) which is available in the docket for this rulemaking and at the internet address listed under **ADDRESSES** above. This action was submitted to the Office of Management and Budget (OMB) for review as required by Executive Order 12866. Written comments from OMB on today's action

ppm standard, unless the party can establish otherwise.

<sup>225</sup> See the final rule, 63 FR 56968, October 23, 1998 for more about the history of these regulations.

<sup>226</sup> National Institute for Petroleum and Energy Research (NIPER) report, Diesel Fuel Oils, 1996.

<sup>227</sup> Information from recent national fuel surveys by NIPER and the Alliance of Automobile Manufacturers.

and responses from EPA to OMB comments are in the public docket for this rulemaking.

### B. Regulatory Flexibility Analysis

EPA has decided to prepare a Final Regulatory Flexibility Analysis in connection with this final rule. For purposes of assessing the impact of today's rule on small entities, small entities are defined as described under section X.B.3 below.

In accordance with section 603 of the RFA, EPA prepared an initial regulatory flexibility analysis (IRFA) for the proposed rule and convened a Small Business Advocacy Review Panel to obtain advice and recommendations of representatives of the regulated small entities in accordance with section 609(b) of the RFA (see 65 FR 35541, June 2, 2000). A detailed discussion of the Panel's advice and recommendations is found in the Panel Report contained in the docket for this rulemaking. A summary of the Panel's recommendations is presented at 65 FR 35541.

We have also prepared a final regulatory flexibility analysis (FRFA) for today's final rule. The FRFA addresses the issues raised by public comments on the IRFA, which was part of the proposal of this rule. The FRFA is available for review in the docket and is summarized below.<sup>228</sup> The key elements of the FRFA include:

- The need for, and objectives of, the rule;
- The significant issues raised by public comments on the Initial RFA, a summary of the Agency's assessment of those issues, and a statement of any changes made to the proposed rule as a result of those comments;
- The types and number of small entities to which the rule will apply;
- The reporting, recordkeeping, and other compliance requirements of the rule, including the classes of small entities that will be affected and the type of professional skills necessary to prepare the report or record;
- The steps taken to minimize the significant impact on small entities consistent with the stated objectives of the applicable statute, including a statement of the factual, policy and legal reasons why the Agency selected the alternatives we did, and why other significant alternatives to the rule which affect the impact on small entities were rejected.

We summarize the key elements of the FRFA below. A fuller discussion of

each of these elements can be found in the FRFA (Chapter VIII of the RIA).

#### 1. Need for and Objectives of the Rule

Section I of this preamble provides a summary of the need for and objectives of this rule. As discussed in detail in Section II of this preamble, emissions from heavy-duty vehicles contribute greatly to a number of serious air pollution problems, and would have continued to do so into the future absent further controls to reduce these emissions. Although the air quality problems caused by diesel heavy-duty vehicles are challenging, we believe they can be resolved through the application of high-efficiency emissions control technologies. Based on the Clean Air Act requirements discussed in Section I.B.3, we are setting stringent new emission standards that will result in the use of these diesel exhaust emission control devices (see Section III). We are also finalizing changes to diesel fuel sulfur standards in order to enable these high-efficiency technologies (Section IV). In consideration of the impacts that sulfur has on the efficiency, reliability, and fuel economy impact of diesel engine exhaust emission control devices, we believe that controlling the sulfur content of highway diesel fuel to the 15 ppm level is necessary, feasible and cost effective. The standards will result in substantial benefits to public health and welfare and the environment through significant reductions in emissions of nitrogen oxides, particulate matter, nonmethane hydrocarbons, carbon monoxide, sulfur oxides, and air toxics.

#### 2. Summary of Significant Public Comments on the IRFA

EPA received many comments from small refiners and others pertaining to the options for hardship relief described in the NPRM. In general, many small refiners commented on the financial difficulty their refinery would face in complying with the proposed diesel sulfur program, and encouraged EPA to provide hardship relief. Many small refiners acknowledged that there was not one single hardship relief option to best suit the needs of all small refiners, and thus supported a menu of options. Section IV.C of the preamble discusses the three hardship relief options available to small refiners under today's program. These three options are based on concepts which were considered by the SBAR Panel and on which we requested and received comment in the proposal. A summary of the comments pertaining to regulatory alternatives for small refiners, and our response to them, is contained in the Response to

Comments document contained in the docket.

#### 3. Types and Number of Small Entities

Today's program, which establishes new emission standards for heavy-duty engines and new standards for the sulfur content of highway diesel fuel, will directly affect manufacturers of heavy-duty engines and petroleum refiners that produce highway diesel fuel, respectively. In addition, but to a lesser extent, the program will directly affect diesel distributors and marketers.

We have not identified any manufacturers of heavy-duty engines that meet SBA's definition of a small business. However, we have identified several petroleum refiners that produce highway diesel fuel and meet the SBA's definitions for a small business for the industry category. According to the SBA's definition of a small business for a petroleum refining company (Standard Industrial Classification (SIC) 2911), which we have used for purposes of assessing the impact of today's rule on small entities, a company must have 1500 or fewer employees to qualify as an SBA small business. Of the approximately 158 refineries in the U.S. today, we estimate that approximately 24 refiners (owning 27 refineries) would meet the SBA definition and produce highway diesel fuel. We estimate that these 24 refiners produce approximately five percent of highway diesel fuel nationwide.

EPA also has identified several thousand businesses in the diesel distribution and marketing industry that meet SBA's definitions of small business. More information about these industries is contained in the Final RFA. The low sulfur diesel fuel rule contains certain downstream compliance and enforcement provisions, for all parties in the diesel fuel distribution system downstream of the refinery gate, to prevent (1) contamination of highway diesel fuels with fuels containing higher levels of sulfur and (2) misfueling of motor vehicles with high sulfur fuels.

Under this rule, distributors and retailers may choose to handle 500 ppm diesel fuel, 15 ppm diesel fuel, or both (as permitted under the temporary compliance option and small refiner hardship provisions described in the preamble). However, distributors and marketers will have to segregate low sulfur diesel fuel from other distillates just as they do today with 500 ppm diesel fuel. Retailers and wholesale purchaser-consumers will be responsible for ensuring that only low sulfur diesel fuel is sold for use in model year 2007 and later heavy-duty

<sup>228</sup> The Final RFA is contained in Chapter VIII of the RIA.

vehicles. Under the temporary compliance option for refiners and small refiner hardship provisions (described in Section IV), where two grades of highway diesel fuel are allowed for the initial years of the program, some distributors and marketers may voluntarily decide (presumably based on economics) to add tankage or make additional modifications to accommodate two grades of highway diesel fuel. We have taken such costs into account in our diesel fuel cost analysis (described in more detail in Chapter V of the RIA).

The low sulfur diesel fuel rule also includes a product downgrading restriction that is designed to discourage the intentional downgrading of 15 ppm diesel fuel to 500 ppm diesel fuel in the distribution system during the initial years of the program when the optional compliance provision is in effect. This provision and its impacts on affected entities is discussed more in Section VII of this preamble and in the FRFA. This provision does not require any new recordkeeping or reporting requirements beyond those required of the rest of the program.

#### 4. Reporting, Recordkeeping and Other Compliance Requirements

As with all refiners complying with the highway diesel fuel program, small refiners will be subject to registration, pre-compliance reporting, annual compliance reporting, and product transfer document requirements. In addition, the low sulfur diesel fuel program contains several hardship options to assist small refiners in producing low sulfur diesel fuel. Under these options, small refiners may be subject to additional reporting and recordkeeping requirements to help ensure compliance with the options and the integrity of the low sulfur diesel fuel as it moves from the refinery gate to the retail outlet. For example, all refiners producing diesel fuel are required to provide us with basic data on their progress toward compliance in 2003–2005 under the pre-compliance reporting requirements described in Section IV.A. As a part of their pre-compliance reports, small refiners must provide a limited amount of additional information specific to the option they choose. However, we believe the benefits of these hardship options will far outweigh any burdens imposed by their associated recordkeeping and reporting requirements.

The low sulfur diesel fuel program does not impose any new reporting requirements for small diesel marketers or distributors. However, this program does impose new record keeping

requirements for such parties, specifically product transfer documents that track transfers of diesel fuel. Such transfer records are currently maintained by most parties for business and/or tax reasons. In addition, the record keeping requirements for downstream parties are fairly consistent with those in place today under other EPA fuel programs, including the current highway diesel fuel program. Therefore, we expect that the new record keeping requirements for downstream parties will not impose a significant burden.

These recordkeeping, reporting and compliance requirements are discussed in more detail in Sections IV and VII of this preamble and in the FRFA.

#### 5. Regulatory Alternatives To Minimize Impact on Small Entities

The Small Business Advocacy Review Panel was convened by EPA on November 12, 1999. The Panel consisted of representatives of the Small Business Administration (SBA), the Office of Management and Budget (OMB) and EPA. During the development of the proposal to this rule, EPA and the Panel were in contact with representatives from the small businesses that will be subject to the provisions in today's rule. In addition to verbal comments from industry noted by the Panel at meetings and teleconferences, written comments were received from each of the affected industry segments or their representatives. The Panel report contains a summary of these comments and the Panel's recommendations on options that could mitigate the adverse impacts on small businesses.

The Panel considered a range of options and regulatory alternatives for providing small businesses with flexibility in complying with new sulfur standards for highway diesel fuel. As part of the process, the Panel requested and received comment on several ideas for flexibility that were suggested by small entity representatives (SERs) and Panel members. The Panel's recommendations are discussed in detail in the Panel Report, contained in the docket. In the NPRM, EPA sought public comment on several ideas that stemmed from the Panel's recommendations, as well as on the Panel's recommendations. Taking into consideration the comments received on these ideas, as well as additional business and technical information gathered about potentially affected small entities, we are finalizing certain of those options today, as discussed in detail in Section IV above.

In addition to our participation in the SBREFA process, we conducted our

own outreach, fact-finding, and analysis of the potential impacts of our regulations on small businesses. Some of the small refiners with whom we and the Panel met indicated their belief that their businesses may close due to the substantial costs, capital and other impacts of meeting the 15 ppm diesel fuel standard without either additional time or flexibility with respect to gasoline sulfur compliance. Based on these discussions and analyses, the Panel and we agree that small refiners would likely experience a significant and disproportionate financial hardship in reaching the objectives of our diesel fuel sulfur program. However, the Panel also noted that the burden imposed upon the small refiners by our sulfur requirements varied from refiner to refiner and could not be alleviated with a single provision. We agree with the Panel and are offering qualifying small refiners three options to choose from in moving toward compliance with the low sulfur diesel fuel requirements.

For today's action, we have structured a selection of temporary flexibilities for qualifying small refiners, both domestic and foreign, based on the factors described below. Generally, we structured these provisions to address small refiner hardship while expeditiously achieving air quality benefits and ensuring that the low sulfur diesel fuel coincides with the introduction of 2007 model year diesel vehicles. First, the compliance deadlines in the program, combined with flexibility for small refiners, will quickly achieve the air quality benefits of the program, while helping to ensure that small refiners will have adequate time to raise capital for new or revamped equipment. Second, we believe that allowing time for refinery sulfur-reduction technologies to be proven out by larger refiners before small refiners have to put them in place will likely allow for lower costs of these improvements in desulfurization technology (*e.g.*, better catalyst technology or lower-pressure hydrotreater technology). Third, providing small refiners more time to comply will increase the availability of engineering and construction resources. Since most large and small refiners must install additional processing equipment to meet the sulfur requirements, there will be a tremendous amount of competition for technology services, engineering manpower, and construction management and labor. Finally, because the gasoline and diesel sulfur requirements will occur in approximately the same time frame, small refiners that produce both fuels

will have a greater difficulty than most other refiners in securing the necessary financing. Hence, any effort that increases small refiners' ability to stagger investments for low sulfur gasoline and diesel will facilitate compliance with the two programs. These factors are discussed further in Section IV.C.

Providing these options to assist small refiners experiencing hardship circumstances enables us to go forward with the 15 ppm sulfur standard beginning in 2006. Without this flexibility, the benefits of the 15 ppm standard would possibly not be achieved as quickly. By providing temporary relief to those refiners that need additional time, we are able to adopt a program that expeditiously reduces diesel sulfur levels in feasible manner for the industry as a whole. In addition, we believe the volume of diesel that will be affected by this hardship provision is marginal. We estimate that small refiners contribute approximately five percent of all domestic highway diesel fuel production.

The Final RFA evaluates the financial impacts of today's program on small entities. EPA believes that the regulatory alternatives finalized in this rule will provide substantial relief to qualifying small businesses from the potential adverse economic impacts of complying with today's rule. The three hardship options available to small refiners under today's rule are summarized below, and are discussed in more detail in Section IV.C and the FRFA.

**500 ppm Option.** A small refiner may continue to produce and sell diesel fuel meeting the current 500 ppm sulfur standard for four additional years, until May 31, 2010, provided that it reasonably ensures the existence of sufficient volumes of 15 ppm fuel in the marketing area(s) that it serves.

**Small Refiner Credit Option.** A small refiner that chooses to produce 15 ppm fuel prior to June 1, 2010 may generate and sell credits under the broader temporary compliance option. Since a small refiner has no requirement to produce 15 ppm fuel under this option, any fuel it produces at or below 15 ppm sulfur will qualify for generating credits.

**Diesel/Gasoline Compliance Date Option.** For small refiners that are also subject to the Tier 2/Gasoline sulfur program (40 CFR Part 80), the refiner may choose to extend by three years the duration of its applicable interim gasoline standards, provided that it also produces all its highway

diesel fuel at 15 ppm sulfur beginning June 1, 2006.

One alternative for which we sought public comment, but are not finalizing today, is an option of allowing small refiners to produce highway diesel fuel meeting a less stringent sulfur standard (e.g., 50 ppm). Some small refiners, and other refiners, commented that the costs of meeting a 50 ppm sulfur cap would be significantly less than those to meet a 15 ppm cap. However, we are not adopting less stringent sulfur standards for small refiners today, because the new diesel exhaust emissions control devices require diesel fuel with a sulfur content capped at 15 ppm in order to be viable and capable to meeting the 2007 emission standards. The need for 15 ppm sulfur diesel fuel is discussed in detail in Section III. Additional discussion of this issue can be found in the Response to Comments document. Additional information on the factual, policy, and legal reasons for the selection of alternatives considered for small refiners, and on any rejected alternatives, can be found in the FRFA, as well as in appropriate sections of the Preamble, RIA, and RTC.

As required by Section 212 of SBREFA, EPA also is preparing a small entity compliance guide to help small entities comply with this rule. Once available, small businesses will be able to obtain a copy through our web site at <http://www.epa.gov/otaq>.

#### C. Paperwork Reduction Act

This action establishes a standard for low sulfur diesel fuel that will become effective in 2006 and that involves the collection of information under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information, unless it displays a currently valid OMB control number. The OMB control numbers for our regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

For 500 ppm diesel fuel standards currently in effect, the existing ICR is "Regulations of Fuel and Fuel Additives; Fuel Quality Regulations for Highway Diesel Sold in 1993 and Later Calendar Years; Recordkeeping Requirements," OMB Control Number 2060-0308, EPA ICR Number 1718.12 (expires July 31, 2001). Copies of this ICR may be obtained from Delores Evans, Office of Policy, Regulatory Information Division, U.S. Environmental Protection Agency (Mail Code 2137), 1200 Pennsylvania Avenue, NW., Washington, DC 20460. Please mark requests, "Attention: Desk Officer

for EPA" and include the ICR in any correspondence.

The Paperwork Reduction Act stipulates that ICR documents estimate the burden of activities that will be required of regulated parties within a three year time period. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

The information collection requirements (ICR) for this rule as it relates to low sulfur (15 ppm) diesel fuel will undergo any required public notice and comment and be submitted for approval to OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* prior to any required information collection.

#### D. Intergovernmental Relations

##### 1. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for federal agencies to assess the effects of their regulatory actions on state, local, and tribal governments, and the private sector. Under Section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "federal mandates" that may result in expenditures to state, local, and tribal governments, in the aggregate, or to the private sector, of \$100 million or more for any single year. Before promulgating a rule, for which a written statement is needed, Section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of Section 205 do not apply when they are inconsistent with applicable law. Moreover, Section 205 allows EPA to adopt an alternative that is not the least costly, most cost effective, or least burdensome



alternative if EPA provides an explanation in the final rule of why such an alternative was adopted.

Before we establish any regulatory requirement that may significantly or uniquely affect small governments, including tribal governments, we must develop a small government plan pursuant to Section 203 of the UMRA. Such a plan must provide for notifying potentially affected small governments, and enabling officials of affected small governments to have meaningful and timely input in the development of our regulations with significant federal intergovernmental mandates. The plan must also provide for informing, educating, and advising small governments on compliance with the regulatory requirements.

This rule contains no federal mandates for state, local, or tribal governments as defined by the provisions of Title II of the UMRA. The rule imposes no enforceable duties on any of these governmental entities. Nothing in this rule will significantly or uniquely affect small governments.

EPA has determined that this rule contains federal mandates that may result in expenditures of more than \$100 million to the private sector in any single year. EPA considered and evaluated a wide range of regulatory alternatives before arriving at the program finalized today. EPA believes that today's final rule represents the least costly, most cost effective approach to achieve the air quality goals of the rule. The cost-benefit analysis required by the UMRA is discussed in Section V above and in the RIA. See the "Administrative Designation and Regulatory Analysis" Section (XI.A.) in today's preamble for further information regarding these analyses.

## 2. Executive Order 13084: Consultation and Coordination With Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian Tribal governments, and that imposes substantial direct compliance costs on those communities, unless the federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to the OMB, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature

of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments "to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities."

Today's rule does not significantly or uniquely affect the communities of Indian Tribal governments. The engine emissions, diesel fuel, and other related requirements for private businesses in today's rule will have national applicability, and thus will not uniquely affect the communities of Indian Tribal Governments. Further, no circumstances specific to such communities exist that will cause an impact on these communities beyond those discussed in the other sections of this rule. Thus, EPA's conclusions regarding the impacts from the implementation of today's rule discussed in the other sections of this preamble are equally applicable to the communities of Indian Tribal governments. Accordingly, the requirements of Section 3(b) of Executive Order 13084 do not apply to this rule.

## E. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Section 12(d) of Public Law 104-113, directs EPA to use voluntary consensus standards in its regulatory activities unless it would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This rule references technical standards adopted by the Agency through previous rulemakings. No new technical standards are established in today's rule. The standards referenced in today's rule involve the measurement of diesel fuel parameters and engine emissions. The measurement standards for diesel fuel parameters referenced in today's rule are all voluntary consensus standards. The engine emissions measurement standards referenced in today's rule are government-unique standards that were developed by the Agency through previous rulemakings.

These standards have served the Agency's emissions control goals well since their implementation and have been well accepted by industry. EPA is not aware of any voluntary consensus standards for the measurement of engine emissions. Therefore, the Agency is using the existing EPA-developed standards found in 40 CFR part 86 for the measurement of engine emissions.

## F. Executive Order 13045: Children's Health Protection

Executive Order 13045, "Protection of Children from Environmental Health Risks and Safety Risks" (62 FR 19885, April 23, 1997) applies to any rule that (1) is determined to be "economically significant" as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, Section 5-501 of the Order directs the Agency to evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This rule is subject to the Executive Order because it is an economically significant regulatory action as defined by Executive Order 12866 and it concerns in part an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children.

This rulemaking will achieve significant reductions of various emissions from heavy-duty engines, including NO<sub>x</sub>, PM, VOCs and air toxics. These pollutants raise concerns regarding environmental health or safety risks that EPA has reason to believe may have a disproportionate effect on children, such as impacts from ozone, PM and certain toxic air pollutants. See Section II and the RIA for a further discussion of these issues.

The effects of ozone and PM on children's health were addressed in detail in EPA's rulemaking to establish the NAAQS for these pollutants, and EPA is not revisiting those issues here. The emission reductions from the strategies in this rulemaking will further reduce air toxics and the related adverse impacts on children's health. In a separate rulemaking under Section 202(l) of the Act, EPA addresses the emissions of hazardous air pollutants from motor vehicles and fuels, and the appropriate level of control of HAPs from these sources. It is important to note that the air toxics reductions that the Agency expects to achieve based on

today's action are an integral part of the Agency's comprehensive strategy to address air toxics from motor vehicles under section 202(l).

In this rule, EPA has evaluated several regulatory strategies for reductions in emissions from heavy-duty engines. (See Section III of this rule as well as the RIA.) For the reasons described there, EPA believes that the strategies are preferable under the CAA to other potentially effective and reasonably feasible alternatives considered by the Agency, for purposes of reducing emissions from these sources as a way of helping areas achieve and maintain the NAAQS for ozone and PM. Moreover, EPA believes that it has selected for this rule the most stringent and effective control reasonably feasible at this time, in light of the technology and cost requirements of the Act.

#### G. Executive Order 13132: Federalism

Executive Order 13132, entitled "Federalism" (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government."

Under Section 6 of Executive Order 13132, EPA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or EPA consults with State and local officials early in the process of developing the regulation. EPA also may not issue a regulation that has federalism implications and that preempts State law, unless the Agency consults with State and local officials early in the process of developing the regulation.

Section 4 of the Executive Order contains additional requirements for rules that preempt State or local law, even if those rules do not have federalism implications (i.e., the rules will not have substantial direct effects on the States, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government). Those requirements include providing all

affected State and local officials notice and an opportunity for appropriate participation in the development of the regulation. If the preemption is not based on express or implied statutory authority, EPA also must consult, to the extent practicable, with appropriate State and local officials regarding the conflict between State law and Federally protected interests within the agency's area of regulatory responsibility.

This rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. Section 211(d)(4)(A) of the CAA prohibits states from prescribing or attempting to enforce controls or prohibitions respecting any fuel characteristic or component if EPA has prescribed a control or prohibition applicable to such fuel characteristic or component under Section 211(c)(1) of the Act. This rule merely modifies existing EPA diesel fuel and heavy-duty vehicle standards and therefore will merely continue an existing preemption of State and local law as discussed in Section VI. Thus, Executive Order 13132 does not apply to this rule.

Although Section 6 of Executive Order 13132 does not apply to this rule, EPA did consult with representatives of various State and local governments in developing this rule. In particular EPA consulted with the State of Alaska in the design of the program as it applies to them, as discussed in Section IV. EPA also talked to representatives from the State of California as well as representatives from STAPPA/ALAPCO, which represents state and local air pollution officials.

#### H. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This rule is a "major rule" as defined by 5 U.S.C. 804(2).

## XI. Statutory Provisions and Legal Authority

Statutory authority for the engine controls finalized in this document can be found in Sections 202, 203, 206, 207, 208, and 301 of the CAA, as amended, 42 U.S.C. 7521, 7522, 7525, 7541, 7542, and 7601.

Statutory authority for the fuel controls finalized in this notice comes from Section 211(c) and 211(i) of the CAA, which allows EPA to regulate fuels that either contribute to air pollution which endangers public health or welfare or which impair emission control equipment which is in general use or has been in general use. Additional support for the procedural and enforcement-related aspects of the fuel's controls in today's rule, including the record keeping requirements, comes from Sections 114(a) and 301(a) of the CAA.

### List of Subjects

#### 40 CFR Part 69

Environmental protection, Air pollution control.

#### 40 CFR Part 80

Environmental protection, Fuel additives, Gasoline, Imports, Incorporation by reference, Labeling, Motor vehicle pollution, Penalties, Reporting and recordkeeping requirements.

#### 40 CFR Part 86

Environmental protection, Administrative practice and procedure, Confidential business information, Incorporation by reference, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements.

Dated: December 21, 2000.

**Carol M. Browner,**  
*Administrator.*

For the reasons set forth in the preamble, we amend parts 69, 80 and 86 of title 40 of the Code of Federal Regulations to read as follows:

### **PART 69—SPECIAL EXEMPTIONS FROM THE REQUIREMENTS OF THE CLEAN AIR ACT**

1. The authority citation for part 69 is revised to read as follows:

**Authority:** 42 U.S.C. 7545(c), (g) and (i), and 7625–1.

#### **Subpart E—Alaska**

2. Section 69.51 of subpart E is revised to read as follows:

##### **§ 69.51 Motor vehicle diesel fuel.**

(a) Diesel fuel that is designated for use only in Alaska and is used only in

Alaska, is exempt from the sulfur standard of 40 CFR 80.29(a)(1) and the dye provisions of 40 CFR 80.29(a)(3) and 40 CFR 80.29(b) until the implementation dates of 40 CFR 80.500, provided that:

(1) The fuel is segregated from non-exempt diesel fuel from the point of such designation; and

(2) On each occasion that any person transfers custody or title to the fuel, except when it is dispensed at a retail outlet or wholesale purchaser-consumer facility, the transferor must provide to the transferee a product transfer document stating:

This diesel fuel is for use only in Alaska. It is exempt from the federal low sulfur standards applicable to highway diesel fuel and red dye requirements applicable to non-highway diesel fuel only if it is used in Alaska.

(b) Beginning on the implementation dates in 40 CFR 80.500, diesel fuel that is designated for use in Alaska or is used in Alaska, is subject to the applicable provisions of 40 CFR Part 80, Subpart I, except as provided under paragraph (c) of this section. The Governor of Alaska may submit for EPA approval, by April 1, 2002, a plan for implementing the sulfur standard in Alaska as an alternative to the temporary compliance option provided under §§ 80.530–80.532. If EPA approves an alternative plan, the provisions as approved by EPA under that plan shall apply to the diesel fuel subject to this paragraph (b).

(c) If such diesel fuel is designated as fuel that does not comply with the standards and requirements for motor vehicle diesel fuel under 40 CFR Part 80, Subpart I, it is exempt from the dye presumption of 40 CFR 80.520(b)(2) provided that:

(1) The fuel is segregated from all motor vehicle diesel fuel.

(2) On each occasion that any person transfers custody or title to the fuel, except when it is dispensed at a retail outlet or wholesale purchaser-consumer facility, the transferor must provide to the transferee a product transfer document complying with the requirements of 40 CFR 80.590(a) through (d) and (g), and stating:

This diesel fuel is for use only in Alaska and is not for use in highway vehicles. It is exempt from the red dye requirement applicable to non-highway diesel fuel only if it is used in Alaska.

(3) Any pump dispensing the fuel must comply with the labeling requirements in 40 CFR 80.570(c).

## PART 80—REGULATION OF FUELS AND FUEL ADDITIVES

3. The authority citation for part 80 is revised to read as follows:

**Authority:** 42 U.S.C. 7414, 7545, and 7601(a).

4. Section 80.2 is amended by revising paragraphs (x) and (y) and adding paragraphs (bb), (nn), and (xx) to read as follows:

### § 80.2 Definitions.

\* \* \* \* \*

(x) *Diesel fuel* means any fuel sold in any state or Territory of the United States and suitable for use in diesel motor vehicles, diesel motor vehicle engines or diesel nonroad engines, and which is commonly or commercially known or sold as diesel fuel.

(y) *Motor vehicle diesel fuel* means any diesel fuel, or any distillate product, that is used, intended for use, or made available for use, as a fuel in diesel motor vehicles or diesel motor vehicle engines.

\* \* \* \* \*

(bb) *Sulfur percentage* is the percentage of sulfur in diesel fuel by weight, as determined using the applicable sampling and testing methodologies set forth in § 80.580.

\* \* \* \* \*

(nn) *Batch of motor vehicle diesel fuel* means a quantity of diesel fuel which is homogeneous with regard to those properties that are specified for motor vehicle diesel fuel under subpart I of this part.

\* \* \* \* \*

(xx) *Motor vehicle diesel fuel additive* means any substance not composed solely of carbon and/or hydrogen, or of diesel blendstocks, that is added, intended for adding, used, or offered for use in motor vehicle diesel fuel subsequent to the production of diesel fuel by processing crude oil from refinery processing units, or in diesel motor vehicle fuel systems.

\* \* \* \* \*

5. Section 80.29 is amended by revising paragraphs (a) and (b), to read as follows:

### § 80.29 Controls and prohibitions on diesel fuel quality.

(a) *Prohibited activities.* Beginning October 1, 1993 and continuing until the implementation dates for subpart I of part 80 as specified in § 80.500, except as provided in 40 CFR 69.51, no person, including but not limited to, refiners, importers, distributors, resellers, carriers, retailers or wholesale purchaser-consumers, shall manufacture, introduce into commerce,

sell, offer for sale, supply, store, dispense, offer for supply or transport any diesel fuel for use in motor vehicles, unless the diesel fuel:

(1) Has a sulfur percentage, by weight, no greater than 0.05 percent;

(2)(i) Has a cetane index of at least 40;

or  
(ii) Has a maximum aromatic content of 35 volume percent; and

(3) Is free of visible evidence of the dye solvent red 164; unless it is used in a manner that is tax-exempt as defined under section 4082 of the Internal Revenue Code (26 U.S.C. 4082).

(b) *Determination of compliance.* (1) Any diesel fuel which does not show visible evidence of being dyed with dye solvent red 164 (which has a characteristic red color in diesel fuel) shall be considered to be available for use in diesel motor vehicles and motor vehicle engines, and shall be subject to the prohibitions of paragraph (a) of this section.

(2) Compliance with the sulfur, cetane, and aromatics standards in paragraph (a) of this section shall be determined based on the level of the applicable component or parameter, using the sampling methodologies specified in § 80.330(b), as applicable, and the appropriate testing methodologies specified in § 80.580(a) for sulfur, § 80.2(w) for cetane index, and § 80.2(z) for aromatic content. Any evidence or information, including the exclusive use of such evidence or information, may be used to establish the level of the applicable component or parameter in the diesel fuel, if the evidence or information is relevant to whether that level would have been in compliance with the standard if the appropriate sampling and testing methodology had been correctly performed. Such evidence may be obtained from any source or location and may include, but is not limited to, test results using methods other than the compliance methods in this paragraph (b), business records, and commercial documents.

(3) Determination of compliance with the requirements of this section other than the standards described in paragraph (a) of this section, and determination of liability for any violation of this section, may be based on information obtained from any source or location. Such information may include, but is not limited to, business records and commercial documents.

\* \* \* \* \*

6. Section 80.30 is amended by revising paragraphs (g)(2)(ii) and (g)(4)(i), and adding paragraph (h), to read as follows:

**§ 80.30 Liability for violations of diesel fuel controls and prohibitions.**

\* \* \* \*

(g) *Defenses.* \* \* \*

\* \* \* \*

(2) \* \* \*

(ii) Test results, performed in accordance with the applicable sampling and testing methodologies set forth in §§ 80.2(w), 80.2(z), 80.2(bb), and 80.580, which evidence that the diesel fuel determined to be in violation was in compliance with the diesel fuel standards of § 80.29(a) when it was delivered to the next party in the distribution system;

\* \* \* \*

(4) \* \* \*

(i) Test results, performed in accordance with the applicable sampling and testing methodologies set forth in §§ 80.2(w), 80.2(z), 80.2(bb), and 80.580, which evidence that the diesel fuel determined to be in violation was in compliance with the diesel fuel standards of § 80.29(a) when it was delivered to the next party in the distribution system;

\* \* \* \*

(h) *Detection of violations.* In paragraphs (a) through (f) of this section, the term "is detected at" means that the violation existed at the facility in question, and the existence of the violation at that facility may be established through evidence obtained or created at that facility, at any other location, and by any party.

7. Section 80.215 is amended by revising paragraph (b) to read as follows:

**§ 80.215 What is the scope of the geographic phase-in program?**

\* \* \* \*

(b) *Duration of the program.* (1) The geographic phase-in program applies to the 2004, 2005, and 2006 annual averaging periods, except as provided in paragraph (b)(2) of this section.

(2) Subject to the provisions of § 80.540, the geographic phase-in program shall also apply to the 2007 and 2008 annual averaging period for refiners approved for GPA standards in 2007 and 2008 under § 80.540.

\* \* \* \*

8. Section 80.220 is amended by adding paragraph (c) to read as follows:

**§ 80.220 What are the downstream standards for GPA gasoline?**

\* \* \* \*

(c) Notwithstanding paragraph (a) of this section, the sulfur content standard of 326 ppm at any downstream location may be extended as provided under § 80.540(m).

9. Section 80.240 is amended by adding paragraph (e), to read as follows:

**§ 80.240 What are the small refiner gasoline sulfur standards?**

\* \* \* \*

(e) Notwithstanding paragraph (a) of this section, the temporary sulfur standards for small refiners may be extended as provided under § 80.553.

10. Subpart I is added to part 80 to read as follows:

**Subpart I—Motor Vehicle Diesel Fuel****General Information**

Sec.

80.500 What are the implementation dates for the diesel fuel sulfur control program?

80.501 What diesel fuel is subject to the provisions of this subpart?

80.502–80.519 [Reserved]

**Motor Vehicle Diesel Fuel Standards and Requirements**

80.520 What are the standards and dye requirements for motor vehicle diesel fuel?

80.521 What are the standards and identification requirements for motor vehicle diesel fuel additives?

80.522 May used motor oil be dispensed into diesel motor vehicles?

80.523 What diesel fuel designation requirements apply to refiners and importers?

80.524 What sulfur content standard applies to motor vehicle diesel fuel downstream of the refinery or importer?

80.525 What requirements apply to kerosene blenders?

80.526 [Reserved]

80.527 Under what conditions may motor vehicle diesel fuel subject to the 15 ppm sulfur standard be downgraded as motor vehicle diesel fuel subject to the 500 ppm sulfur standard?

80.528–80.529 [Reserved]

**Temporary Compliance Option**

80.530 Under what conditions can 500 ppm motor vehicle diesel fuel be produced or imported?

80.531 How are motor vehicle diesel fuel credits generated?

80.532 How are credits used and transferred?

80.533–80.539 [Reserved]

**Geographic Phase-In Provisions**

80.540 How may a refiner be approved to produce gasoline under the GPA gasoline sulfur standards in 2007 and 2008?

80.541–80.549 [Reserved]

**Small Refiner Hardship Provisions**

80.550 What is the definition of a small refiner under this subpart?

80.551 How does a refiner obtain approval as a small refiner under this subpart?

80.552 What compliance options are available to small refiners?

80.553 Under what conditions may the small refiner gasoline sulfur standards be

extended for a small refiner of motor vehicle diesel fuel?

80.554–80.559 [Reserved]

**Other Hardship Provisions**

80.560 How can a refiner seek temporary relief from the requirements of this subpart in case of extreme hardship circumstances?

80.561 How can a refiner or importer seek temporary relief from the requirements of this subpart in case of extreme unforeseen circumstances?

80.562–80.569 [Reserved]

**Labeling Requirements**

80.570 What labeling requirements apply to retailers and wholesale purchaser-consumers of motor vehicle diesel fuel?

80.571–80.579 [Reserved]

**Sampling and Testing**

80.580 What are the sampling and testing methods for sulfur?

80.581–80.589 [Reserved]

**Recordkeeping and Reporting Requirements**

80.590 What are the product transfer document requirements for motor vehicle diesel fuel?

80.591 What are the product transfer document requirements for additives to be used in motor vehicle diesel fuel?

80.592 What records must be kept?

80.593 What are the reporting and registration requirements for refiners and importers of motor vehicle diesel fuel subject to temporary refiner relief standards?

80.594 What are the pre-compliance reporting requirements?

80.595 How does a refiner apply for a motor vehicle diesel fuel volume baseline?

80.596 How is a refinery motor vehicle diesel fuel volume baseline calculated?

80.597 What are the registration requirements?

80.598–80.599 [Reserved]

**Exemptions**

80.600 What are the requirements for obtaining an exemption for motor vehicle diesel fuel used for research, development or testing purposes?

80.601 What requirements apply to motor vehicle diesel fuel for use in the Territories?

80.602 What exemption applies to diesel fuel used in vehicles having a national security exemption from motor vehicle emissions standards?

80.603–80.609 [Reserved]

**Violation Provisions**

80.610 What acts are prohibited under the diesel fuel sulfur program?

80.611 What evidence may be used to determine compliance with the prohibitions and requirements of this subpart and liability for violations of this subpart?

80.612 Who is liable for violations of this subpart?

80.613 What defenses apply to persons deemed liable for a violation of a prohibited act?

80.614 What penalties apply under this subpart?

**80.615–80.619 [Reserved]****Provisions for Foreign Refiners and Importers for Motor Vehicle Diesel Fuel Subject to a Temporary Compliance Option or Hardship Provision****80.620 What are the additional requirements for motor vehicle diesel fuel produced by foreign refineries subject to a temporary refiner compliance option or hardship provisions?****Subpart I—Motor Vehicle Diesel Fuel****General Information****§ 80.500 What are the implementation dates for the diesel fuel sulfur control program?**

The implementation dates for standards for motor vehicle diesel fuel and diesel fuel additives, and for other provisions of this subpart, are as follows:

(a) *Implementation date for standards applicable to production or importation of motor vehicle diesel fuel, and to motor vehicle diesel fuel additives.*

Except as provided in paragraph (d) of this section, beginning June 1, 2006:

(1) The standards and requirements under § 80.520(a) and (b) shall apply to any motor vehicle diesel fuel produced or imported by any refiner or importer; and

(2) The standards and requirements under § 80.521 shall apply to any motor vehicle diesel fuel additive.

(b) *Implementation date for standards applicable to motor vehicle diesel fuel downstream of the refinery or importer.*

Except as provided in paragraphs (c) and (d) of this section, beginning July 15, 2006, the standards and requirements under § 80.520(a) and (b) shall apply to any motor vehicle diesel fuel at any downstream location.

(c) *Implementation date for standards applicable to motor vehicle diesel fuel at retail outlets and wholesale purchaser-consumer facilities.*

Except as provided in paragraph (d) of this section, beginning September 1, 2006, the standards and requirements under § 80.520(a) and (b) shall apply to any motor vehicle diesel fuel at any retail outlet or wholesale purchaser-consumer facility.

(d) *Implementation date for motor vehicle diesel fuel subject to the 500 ppm sulfur content standard in § 80.520(c).* (1) Beginning June 1, 2006, the sulfur content standard of § 80.520(c) shall apply to motor vehicle diesel fuel, but only where authorized under, and subject to, an applicable provision of this Subpart.

(2) Beginning June 1, 2010, the sulfur content standard of § 80.520(c) shall no longer apply to any motor vehicle diesel

fuel produced or imported by any refiner or importer.

(3) Beginning October 1, 2010, the sulfur content standard of § 80.520(c) shall no longer apply to any motor vehicle diesel fuel at any downstream location other than a retail or wholesale purchaser-consumer facility.

(4) Beginning December 1, 2010, the sulfur content standard of § 80.520(c) shall no longer apply to any motor vehicle diesel fuel.

(e) *Other provisions.* All other provisions of this subpart apply beginning June 1, 2006, unless another date is specified.

(f) For purposes of this subpart, the term “downstream location” shall mean any point in the diesel fuel distribution system downstream from refineries and import facilities, including diesel fuel at facilities of distributors, carriers, retailers, kerosene blenders, and wholesale purchaser-consumers.

**§ 80.501 What diesel fuel is subject to the provisions of this subpart?**

(a) *Included fuel and additives.* The provisions of this subpart apply to motor vehicle diesel fuel as defined in § 80.2(y), motor vehicle diesel fuel additives as defined in § 80.2(xx), and motor oil that is used as or intended for use as fuel in diesel motor vehicles or is blended with diesel fuel for use in diesel motor vehicles at any downstream location, as provided in § 80.500(f).

(b) *Excluded fuel.* The provisions of this subpart do not apply to motor vehicle diesel fuel that is designated for export outside the United States, and identified for export by a transfer document as required under § 80.590.

**§§ 80.502–80.519 [Reserved]****Motor Vehicle Diesel Fuel Standards and Requirements****§ 80.520 What are the standards and dye requirements for motor vehicle diesel fuel?**

(a) *Standards.* All motor vehicle diesel fuel is subject to the following per-gallon standards:

(1) *Sulfur content.* 15 parts per million (ppm) maximum, except as provided in paragraph (c) of this section;

(2) *Cetane index and aromatic content.* (i) A minimum cetane index of 40; or

(ii) A maximum aromatic content of 35 volume percent.

(b) *Dye requirements.* (1) All motor vehicle diesel fuel shall be free of visible evidence of dye solvent red 164 (which has a characteristic red color in diesel fuel), except for motor vehicle diesel fuel that is used in a manner that

is tax exempt under section 4082 of the Internal Revenue Code.

(2) Any diesel fuel that does not show visible evidence of dye solvent red 164 shall be considered to be motor vehicle diesel fuel and subject to all the requirements of this subpart for motor vehicle diesel fuel, except for diesel fuel designated or classified for use only in:

(i) The State of Alaska as provided under 40 CFR 69.51; or

(ii) Jet aircraft, a research and development testing program exempted under 80.600, or motor vehicles covered by an exemption under § 80.602.

(c) Pursuant and subject to the provisions of §§ 80.530–80.532, 80.552(a), 80.560–80.561, and 80.620, only motor vehicle diesel fuel produced or imported in full compliance with the requirements of those provisions is subject to the following per-gallon standard for sulfur content: 500 ppm maximum.

(d) Kerosene and any other distillate product, that meets the definition of motor vehicle diesel fuel, is subject to the standards and requirements under this section.

**§ 80.521 What are the standards and identification requirements for motor vehicle diesel fuel additives?**

(a) Except as provided in paragraph (b) of this section, any motor vehicle diesel fuel additive that is added, intended for adding, used, or offered for use in motor vehicle diesel fuel subject to the 15 ppm sulfur content standard, at any downstream location must:

(1) Have a sulfur content not exceeding 15 ppm; and

(2) Be accompanied a product transfer document pursuant to § 80.591 indicating that the additive complies with the 15 ppm standard for motor vehicle diesel fuel, except for those diesel fuel additives which are only sold in containers for use by the ultimate consumer of motor vehicle diesel fuel and which are subject to the requirements of § 80.591(d).

(b) Any motor vehicle diesel fuel additive that is added, intended for adding, used, or offered for use in motor vehicle diesel fuel subject to the 15 ppm sulfur content standard may have a sulfur content exceeding 15 ppm provided that:

(1) The additive is added or used in the motor vehicle diesel fuel in a quantity less than 1% by volume of the resultant additive/diesel fuel mixture;

(2) The product transfer document pursuant to § 80.591 indicates that the additive may exceed the 15 ppm sulfur standard, that improper use of the additive may result in non-complying fuel, and that the additive complies

with the sulfur information requirements of § 80.591(b)(3); and

(3) The additive is not used or intended for use by an ultimate consumer in diesel motor vehicles.

**§ 80.522 May used motor oil be dispensed into diesel motor vehicles?**

No person may introduce used motor oil, or used motor oil blended with diesel fuel, into the fuel system of model year 2007 or later diesel motor vehicles, unless both of the following requirements have been met:

(a) The vehicle or engine manufacturer has received a Certificate of Conformity under 40 CFR Part 86 and the certification of the vehicle or engine configuration is explicitly based on emissions data with the addition of motor oil; and

(b) The oil is added in a manner and rate consistent with the conditions of the Certificate of Conformity.

**§ 80.523 What diesel fuel designation requirements apply to refiners and importers?**

Any refiner or importer shall accurately and clearly designate all fuel it produces or imports for use in diesel motor vehicles as either motor vehicle diesel fuel meeting the 15 ppm sulfur standard under § 80.520(a)(1) or as motor vehicle diesel fuel meeting the 500 ppm sulfur standard under § 80.520(c).

**§ 80.524 What sulfur content standard applies to motor vehicle diesel fuel downstream of the refinery or importer?**

(a) Except as provided in paragraph (b) of this section or otherwise in the provisions of this Subpart I, the 15 ppm sulfur content standard of § 80.520(a) shall apply to all motor vehicle diesel fuel at any downstream location.

(b) Prior to the October 1, 2010 and December 1, 2010 dates specified in § 80.500(d)(3) and (4), the 500 ppm sulfur content standard of § 80.520(c) shall apply to motor vehicle diesel fuel at any downstream location, provided the following conditions are met:

(1) The product transfer documents comply with the requirements of § 80.590, including indicating that the fuel complies with the 500 ppm sulfur standard for motor vehicle diesel fuel and is for use only in model year 2006 and older diesel motor vehicles, or the fuel is downgraded pursuant to the provision of § 80.527 to motor vehicle diesel fuel subject to the 500 ppm sulfur standard;

(2) The motor vehicle diesel fuel is not represented or intended for sale or use as subject to the 15 ppm sulfur content standard, and is not dispensed, or intended to be dispensed, into model

year 2007 and later motor vehicles by a retailer or wholesale purchaser-consumer; and

(3) For retailers or wholesale purchaser-consumers, the pump labeling requirements of § 80.570(a) are satisfied.

**§ 80.525 What requirements apply to kerosene blenders?**

(a) For purposes of this subpart, a kerosene blender means any refiner who produces motor vehicle diesel fuel by adding kerosene to motor vehicle diesel fuel downstream of the refinery that produced the motor vehicle diesel fuel or of the import facility where the motor vehicle diesel fuel was imported, without altering the quality or quantity of the motor vehicle diesel fuel in any other manner.

(b) Kerosene blenders are not subject to the requirements of this subpart applicable to refiners of motor vehicle diesel fuel, but are subject to the requirements and prohibitions applicable to downstream parties.

(c) For purposes of compliance with § 80.524(b)(1), the product transfer documents must indicate that the fuel to which kerosene is added complies with the 500 ppm sulfur standard for motor vehicle diesel fuel and is for use only in model year 2006 and older diesel motor vehicles, or the fuel is properly downgraded pursuant to the provisions of § 80.527 to motor vehicle diesel fuel subject to the 500 ppm sulfur standard.

(d) Kerosene that a kerosene blender adds or intends to add to motor vehicle diesel fuel subject to the 15 ppm sulfur content standard must meet the 15 ppm sulfur content standard, and the following requirements:

(1) The product transfer document received by the kerosene blender indicates that the kerosene is motor vehicle diesel fuel that complies with the 15 ppm sulfur content standard; or

(2) The kerosene blender has test results indicating the kerosene complies with the 15 ppm sulfur standard.

**§ 80.526 [Reserved]**

**§ 80.527 Under what conditions may motor vehicle diesel fuel subject to the 15 ppm sulfur standard be downgraded as motor vehicle diesel fuel subject to the 500 ppm sulfur standard?**

(a) *Definition.* As used in this section, *downgrade* means changing the classification of motor vehicle diesel fuel subject to the 15 ppm sulfur standard under § 80.520(a)(1) to motor vehicle diesel fuel subject to the 500 ppm sulfur standard under § 80.520(c). A *downgrade* occurs when the change in classification takes place. Changing the classification of motor vehicle diesel

fuel subject to the 15 ppm sulfur standard under § 80.520(a)(1) to any fuel that is not motor vehicle diesel fuel is not a *downgrade* for purposes of this section and is not limited by the provisions of this section.

(b) *Who may downgrade.* Any person in the motor vehicle diesel fuel distribution system who has custody or title to motor vehicle diesel fuel may downgrade it.

(c) *Downgrading limitation.* (1) Except as provided in paragraphs (d) and (e) of this section, a person described in paragraph (c)(4) of this section may not downgrade a total of more than 20% of the motor vehicle diesel fuel (by volume) that is subject to the 15 ppm sulfur standard of § 80.520(a)(1) while such person has title to or custody of such fuel. In addition, a refiner or importer may only downgrade (subject to the 20% limit) motor vehicle diesel fuel designated under § 80.523 as subject to 15 ppm sulfur standard under § 80.520(a)(1) after it has been so designated and after it has been moved from the refinery's, or import facility's, storage tank or other vessel where the diesel fuel batch was designated as subject to the sulfur standard of § 80.520(a) under § 80.523.

(2) The limitation of paragraph (c)(1) of this section applies separately to each person who has custody or title of the fuel when it is downgraded.

(3) Compliance with the limitation of paragraph (c)(1) of this section shall be on an annual, calendar year basis (except in 2006 compliance shall be for the period June 1, 2006 through December 31, 2006, and in 2010 compliance shall be for the period January 1 through May 31).

(4) The limitation of this section applies to persons who sell, offer for sale, dispense, supply, store or transport diesel fuel. The limitation does not apply to persons who are transferred custody or title to motor vehicle diesel fuel when it is dispensed into motor vehicles at retail outlets.

(d) *Diesel fuel in violation of the 15 ppm standard.* Where motor vehicle diesel fuel subject to the sulfur standard of § 80.520(a)(1) is found to be in violation of any standard under § 80.520(a) and is consequently downgraded, the person, or persons, having custody and title to the fuel at the time it is found to be in violation must include the volume of such fuel toward its 20% volume limitation under paragraph (c)(1) of this section, unless the person, or persons, demonstrates that it did not cause the violation.

(e) *Special provisions for retail outlets and wholesale purchaser-consumer facilities.* Notwithstanding the

provisions of paragraph (c)(1) of this section, retailers and wholesale purchaser-consumers shall comply with the downgrading limitation as follows:

(1) Retailers and wholesale purchaser-consumers who sell, offer for sale, or dispense motor vehicle diesel fuel that is subject to the 15 ppm sulfur standard under § 80.520(a)(1) are exempt from the volume limitations of paragraph (c)(1) of this section.

(2) A retailer or wholesale purchaser-consumer who does not sell, offer for sale, or dispense motor vehicle diesel fuel subject to the 15 ppm sulfur standard under § 80.520(a)(1) may not downgrade a volume of motor vehicle diesel fuel classified as subject to the 15 ppm sulfur standard greater than 20% of the total volume of motor vehicle diesel fuel that it sells, offers for sale, or dispenses annually.

(f) *Product transfer documents.* If the custody or title to any motor vehicle diesel fuel that is downgraded under this section is transferred, the product transfer documents under § 80.590 for such fuel must reflect the change in classification to motor vehicle diesel fuel subject to the 500 ppm sulfur standard.

(g) *Recordkeeping requirement.* Any person subject to the provisions of this section, as described in paragraph (c)(4) of this section, who downgrades any motor vehicle diesel fuel previously classified as subject to the 15 ppm sulfur standard under § 80.520(a)(1) during any calendar year, must make and maintain records sufficient to show compliance with the requirements and limitations of this section.

(h) *Termination of downgrading limitations.* The provisions of this section shall not apply after May 31, 2010.

#### §§ 80.528–80.529 [Reserved.]

#### Temporary Compliance Option

##### § 80.530 Under what conditions can 500 ppm motor vehicle diesel fuel be produced or imported?

(a) Beginning June 1, 2006, a refiner or importer may produce or import motor vehicle diesel fuel subject to the 500 ppm sulfur content standard of § 80.520(c) if all of the following requirements are met:

(1) Each batch of motor vehicle diesel fuel subject to the 500 ppm sulfur content standard must be designated by the refiner or importer as subject to such standard, pursuant to § 80.523.

(2) The refiner or importer must meet the requirements for product transfer documents in § 80.590 for each batch subject to the 500 ppm sulfur content standard.

(3)(i) The volume  $V_{500}$  of diesel fuel that is produced or imported during a compliance period, as provided in paragraph (a)(5) of this section, may not exceed the following volume limit:

(A) For compliance periods prior to 2010, 20% of the volume  $V_t$  of diesel fuel that is produced or imported during a compliance period plus an additional volume of motor vehicle diesel fuel represented by credits properly generated and used pursuant to the requirements of §§ 80.531 and 80.532.

(B) For the compliance period of January 1, 2010 through May 31, 2010, the volume of motor vehicle diesel fuel represented by credits properly generated and used pursuant to the requirements of §§ 80.531 and 80.532.

(ii) The terms  $V_{500}$  and  $V_t$  have the meaning specified in § 80.531(a)(2).

(4) Compliance with the volume limit in paragraph (a)(3) of this section must be determined separately for each refinery. For an importer, such compliance must be determined separately for each Credit Trading Area (as defined in § 80.531) into which motor vehicle diesel fuel is imported. If a party is both a refiner and an importer, such compliance shall be determined separately for the refining and importation activities.

(5) Compliance with the volume limit in paragraph (a)(3) of this section shall be determined on a calendar year basis, where the calendar year period is from January 1st through December 31st. For the year 2006, compliance shall be determined for the period June 1, 2006 through December 31, 2006. For the year 2010, compliance shall be determined for the period of January 1, 2010 through May 31, 2010.

(6) Any motor vehicle diesel fuel produced or imported above the volume limit in paragraph (a)(3) of this section shall be subject to the 15 ppm sulfur content standard. However, for any compliance period prior to and including 2009, a refiner or importer may exceed the volume limit in paragraph (a)(3) of this section by no more than 5 percent of the volume  $V_t$  of diesel fuel produced or imported during the compliance period, provided that for the immediately following calendar year:

(i) The refiner or importer complies with the volume limit in paragraph (a)(3) of this section; and

(ii) The refiner or importer produces or imports a volume of motor vehicle diesel fuel subject to the 15 ppm sulfur standard, or obtains credits properly generated and used pursuant to the requirements of §§ 80.531 and 80.532 that represent a volume of motor vehicle diesel fuel, equal to the volume of the

exceedence for the prior compliance period.

(b) After May 31, 2010, no refiner or importer may produce or import motor vehicle diesel fuel subject to the 500 ppm sulfur content standard pursuant to this section.

##### § 80.531 How are motor vehicle diesel fuel credits generated?

(a) *Generation of credits from June 1, 2006 through December 31, 2009.* (1) A refiner or importer may generate credits during the period June 1, 2006 through December 31, 2009, for motor vehicle diesel fuel produced or imported that is designated as subject to the 15 ppm sulfur content standard under § 80.520(a)(1). Credits may be generated only if the volume of motor vehicle diesel fuel designated under § 80.523 as subject to the 15 ppm sulfur standard of § 80.520(a) exceeds 80% of the total volume of diesel fuel produced or imported as described in paragraph (a)(2) of this section.

(2) The number of credits generated shall be calculated for each compliance period (as specified in § 80.530(a)(5)) as follows:

$$C = V_{15} - (0.80 \times V_t)$$

Where:

$C$  = the positive number of credits generated, in gallons.

$V_{15}$  = the total volume in gallons of motor vehicle diesel fuel produced or imported that is designated under § 80.523 as subject to the standards of § 80.520(a) during the compliance period.

$V_{500}$  = the total volume in gallons of motor vehicle diesel fuel produced or imported that is designated under § 80.523 as subject to the 500 ppm sulfur standard under § 80.520(c) plus the total volume of any other diesel fuel (not including  $V_{15}$ , or diesel fuel that is dyed in accordance with § 80.520(b) at the refinery or import facility where the diesel fuel is produced or imported) represented as having a sulfur content not exceeding 500 ppm.

$$V_t = V_{15} + V_{500}$$

(3) Credits shall be generated and designated as follows:

(i) Credits shall be generated separately for each refinery of a refiner.

(ii) Credits shall be generated separately for each credit trading area (CTA), as defined in paragraph (a)(5) of this section, into which motor vehicle diesel fuel is imported by an importer.

(iii) Credits shall be designated separately by year of generation and by CTA of generation. In the case of a refiner, credits shall also be designated by refinery, and in the case of an importer, credits shall also be designated by port of import.

(iv) Credits may not be generated by both a foreign refiner and by an importer for the same motor vehicle diesel fuel.

(4) Credits shall be generated by a foreign refiner as provided in § 80.620(c) and this section.

(5) For purposes of this subpart, the CTAs are:

(i) PADDs 1, 2, 3 and 4, as described in § 80.41(r), except as provided in paragraph (a)(5)(iv) of this section. The CTAs shall be designated as CTA 1, 2, 3, and 4, respectively, and correspond to PADD 1, 2, 3, and 4, respectively;

(ii) CTA 5 shall correspond to PADD 5, as described in § 80.41(r), except as provided in paragraphs (a)(5)(iii) and (iv) of this section;

(iii) The states of Hawaii and Alaska shall each be treated as a separate CTA and not a part of CTA 5. Alaska shall be CTA 6. Hawaii shall be CTA 7;

(iv) If any state (through a waiver of federal preemption under Section 211(c)(4) of the Clean Air Act, 42 U.S.C. 7545(c)(4)) implements a law or regulation that requires a greater volume of motor vehicle diesel fuel to meet a sulfur standard of less than or equal to 15 ppm than the volume that is required under this subpart, no motor vehicle diesel fuel produced in that state or imported directly into that state may generate credits under this subpart, effective on the implementation date of the sulfur program under the state statute or regulation that implements the more stringent state requirements.

(6) No credits may be generated under this paragraph (a) after December 31, 2009.

(7) No refinery may generate credits under both this paragraph (a) and under paragraph (e) of this section.

(b) *Generation of early credits from June 1, 2001 through May 31, 2005.* (1) Beginning June 1, 2001, a refiner or importer may generate one credit for each gallon of motor vehicle diesel fuel meeting the sulfur content standard in § 80.520(a)(1) that is used in vehicles with engines that are certified to meet the model year 2007 heavy duty engine PM standard under 40 CFR 86.007–11, or vehicles with retrofit technologies that achieve emission levels equivalent to the 2007 NO<sub>x</sub> or PM emission standard verified as part of a retrofit program administered by EPA or a state. Such refiners and importers must comply with the requirements of paragraphs (b) and (d) of this section.

(2)(i) Any refiner or importer planning to generate credits under this paragraph must provide notice of intent to generate early credits at least 120 calendar days prior to the date it begins generating credits under this paragraph by submitting such notice to Attn: Early Diesel Credits Notice, at the address in § 80.595.

(ii) The notice shall include a detailed plan that demonstrates that the motor vehicle diesel fuel meeting the 15 ppm sulfur standard of § 80.520(a)(1) for which credits are generated under this paragraph will be used in vehicles with engines that are certified to meet the model year 2007 heavy duty engine PM standard under 40 CFR 86.007–11 or in vehicles with retrofit technologies that achieve emission levels equivalent to the 2007 NO<sub>x</sub> or PM emission standard verified as part of a retrofit program administered by EPA or a state. The notice must include the refiner's or importer's detailed plan for ensuring that all motor vehicle diesel fuel that generates early credits under this paragraph will be segregated from all other motor vehicle diesel fuel not meeting the sulfur standard under § 80.520(a)(1), from the refinery or import facility to its ultimate use in motor vehicles.

(3) No credits may be generated under this paragraph (b) after May 31, 2005.

(4) A refiner or importer may generate credits under this paragraph and also generate credits under paragraph (a) of this section, and a small refiner, as defined under § 80.550, may generate credits under this paragraph (b) and paragraph (e) of this section.

(c) *Generation of early credits from June 1, 2005 through May 31, 2006.* (1) Beginning June 1, 2005, a refiner or importer may generate one credit for each gallon of motor vehicle diesel fuel that is dispensed at retail outlets or at wholesale-purchaser consumer facilities exclusively as motor vehicle diesel fuel meeting the 15 ppm sulfur standard in § 80.520(a)(1). Such refiners and importers must comply with the requirements of this paragraph (c) and paragraph (d) of this section.

(2)(i) Any refiner or importer planning to generate credits under this paragraph must provide notice of intent to generate early credits at least 120 calendar days prior to the date it begins generating credits under this paragraph (c).

(ii) The notice shall include a detailed plan that demonstrates that the motor vehicle diesel fuel meeting the sulfur standard under § 80.520(a)(1) will be dispensed exclusively at retail outlets or at wholesale-purchaser consumer facilities as 15 ppm sulfur content motor vehicle diesel fuel. The plan must demonstrate that the refiner or importer will assure that all motor vehicle diesel fuel that generates early credits under this paragraph (c) will be segregated from all other motor vehicle diesel fuel from the refinery or import facility to its ultimate use in motor vehicles.

(3) No credits may be generated under this paragraph after May 31, 2006.

(4) A refiner or importer may generate credits under this paragraph (c) and also generate credits under paragraph (a) of this section, and a small refiner, as defined under § 80.550, may generate credits under this paragraph (c) and paragraph (e) of this section.

(d) *Additional requirements for early credits.* Early credits generated under paragraphs (b) and (c) of this section are subject to the following additional requirements:

(1) The designation requirements of § 80.523, and all recordkeeping and annual reporting requirements of §§ 80.592, 80.593 and 80.594.

(2) Credits generated under paragraphs (b) and (c) of this section shall be generated separately by CTA as defined in paragraph (a)(5) of this section and must be designated by CTA of generation, and by the refiner and refinery, or by importer and port of import, as applicable.

(3) Credits may not be generated for the same fuel by both a foreign refiner and an importer.

(4) The plan under paragraph (b)(2)(ii) or (c)(2)(ii) of this section must include provisions to include information on product transfer documents and on pump stands dispensing the fuel identifying the fuel as 15 ppm sulfur content motor vehicle diesel fuel. The plan must also identify the specific retail outlets or wholesale purchaser-consumer facilities that the fuel will be provided to. The Administrator may require a refiner or importer to submit additional information, as needed.

(5) In addition to the reporting requirements under paragraph (d)(1) of this section, the refiner or importer must submit a report to the Administrator no later than the last day of February for the prior calendar year period (or for the period June 1, 2001 through December 31, 2001, the period June 1, 2005 through December 31, 2005, or the period January 1, 2006 through May 31, 2006, as applicable) demonstrating that all the motor vehicle diesel fuel produced or imported for which credits were generated met the applicable requirements of paragraph (b), (c), or (d)(4) of this section. If the Administrator finds that such credits did not in fact meet the requirements of paragraphs (b)(1) and (c)(1) of this section, as applicable, or if the Administrator determines that there is insufficient information to determine the validity of such credits, the Administrator may deny the credits submitted in whole or in part.

(e) *Credits generated by small refiners.* (1) Notwithstanding the provisions of paragraph (a) of this section, a small refiner that is approved by the EPA as



a small refiner under § 80.551(g) may generate credits under § 80.552(b). Such a small refiner may generate one credit for each gallon of motor vehicle diesel fuel produced that is designated under § 80.523 as subject to the 15 ppm sulfur standard under § 80.520(a)(1).

(2)(i) Credits may be generated under this paragraph (e) and § 80.552(b) only during the compliance periods beginning June 1, 2006 and ending on May 31, 2010. Credits shall be designated separately by refinery, separately by CTA of generation, and separately by annual compliance period. The annual compliance period for 2006 shall be June 1, 2006 through December 31, 2006. The annual compliance period for 2010 shall be January 1, 2010 through May 31, 2010.

(ii) The small refiner must meet the requirements of paragraphs (d)(1), (d)(2) and (d)(3) of this section, and the recordkeeping and reporting requirements of §§ 80.592, 80.593 and 80.594.

(iii) In addition, a foreign refiner that is approved by the Administrator to generate credits under § 80.552(b) shall comply with the requirements of § 80.620.

#### **§ 80.532 How are credits used and transferred?**

(a) *Credit use.* Credits generated under § 80.531 may be used to meet the volume limit of § 80.530(a)(3) provided that:

(1) The credits were generated and reported according to the requirements of this subpart; and

(2) The requirements of paragraphs (b), (c), (d), and (e) of this section are met.

(b) Credits generated under § 80.531 may be used by a refinery or by an importer to comply with section 80.530 by applying one credit for every gallon of motor vehicle diesel fuel needed to meet compliance with the volume limit of § 80.530(a)(3).

(c) Credits generated may be banked for use or transfer in a later compliance period or may be transferred to another refinery or importer for use as provided in paragraph (d) of this section.

(d) *Credit transfers.* (1) Credits obtained from another refinery or from another importer, including early credits and small refiner credits as described in § 80.531 (b), (c) (d), and (e), may be used to satisfy the volume limit of § 80.530(a)(3) if all the following conditions are met:

(i) The credits were generated in the same CTA as the CTA in which credits are used to achieve compliance;

(ii) The credits are used in compliance with the time period limitations for credit use in this subpart;

(iii) Any credit transfer takes place no later than the last day of February following the compliance period when the credits are used;

(iv) No credit may be transferred more than twice, as follows: The first transfer by the refiner or importer who generated the credit may only be made to a refiner or importer who intends to use the credit; if the transferee cannot use the credit, it may make a second and final transfer only to a refiner or importer who intends to use the credit. In no case may a credit be transferred more than twice before being used or terminated;

(v) The credit transferor must apply any credits necessary to meet the transferor's annual compliance requirements before transferring credits to any other refinery or importer;

(vi) No credits may be transferred that would result in the transferor having a negative credit balance; and

(vii) Each transferor must supply to the transferee records indicating the year the credits were generated, the identity of the refiner (and refinery) or importer who generated the credits, the CTA of credit generation, and the identity of the transferring party, if it is not the same party who generated the credits.

(2) In the case of credits that have been calculated or created improperly, or are otherwise determined to be invalid, the following provisions apply:

(i) Invalid credits cannot be used to achieve compliance with the transferee's volume requirements regardless of the transferee's good faith belief that the credits were valid.

(ii) The refiner or importer who used the credits, and any transferor of the credits, must adjust their credit records, reports and compliance calculations as necessary to reflect the proper credits.

(iii) Any properly created credits existing in the transferor's credit balance after correcting the credit balance, and after the transferor applies credits as needed to meet the compliance requirements at the end of the compliance period, must first be applied to correct the invalid transfers before the transferor trades or banks the credits.

(e) *Limitations on credit use.* (1) Credits may not be used to achieve compliance with any requirements of this subpart other than the volume limit of § 80.530(a)(3), unless specifically approved by the Administrator pursuant to a hardship relief petition under § 80.560 or § 80.561.

(2) A refiner or importer possessing credits must use all credits in its

possession prior to applying the credit deficit provisions of § 80.530(a)(6).

(3) No credits may be used to meet compliance with this subpart subsequent to the compliance period ending May 31, 2010.

#### **§§ 80.533–80.539 [Reserved]**

#### **Geographic Phase-In Provisions**

#### **§ 80.540 How may a refiner be approved to produce gasoline under the GPA gasoline sulfur standards in 2007 and 2008?**

(a) A refiner that has been approved by EPA under § 80.217 for the geographic phase-in area (GPA) gasoline sulfur content standards under § 80.216 may apply to EPA for approval to produce gasoline subject to the GPA standards in 2007 and 2008. Such application shall be submitted to EPA, at the address provided in § 80.595(b), by December 31, 2001. A foreign refiner must apply under the provisions of paragraph (n) of this section.

(b) The refiner must submit an application in accordance with the provisions of §§ 80.595 and 80.596. The application must also include information, as provided in § 80.594(c), demonstrating that starting no later than June 1, 2006, all motor vehicle diesel fuel produced by the refinery for United States use will comply with the 15 ppm sulfur content standard under § 80.520(a)(1), and that the volume of motor vehicle diesel fuel produced will comply with the volume requirements of paragraph (e) of this section.

(c) The Administrator may approve a refiner's application to produce gasoline subject to the GPA gasoline sulfur content standards in 2007 and 2008 if the provisions of paragraph (b) of this section are satisfied. In approving an application, the Administrator shall establish a motor vehicle diesel fuel volume baseline under §§ 80.595 and 80.596.

(d) Starting June 1, 2006, and continuing through December 31, 2008, all motor vehicle diesel fuel produced by a refiner that has been approved under paragraph (c) of this section to produce gasoline subject to the GPA gasoline sulfur content standards in 2007 and 2008, must be accurately designated under § 80.523 as meeting the 15 ppm sulfur content standard of § 80.520(a)(1).

(e) The total volume of motor vehicle diesel fuel produced for use in the United States and designated as meeting the 15 ppm sulfur content standard under paragraph (d) of this section must meet or exceed 85% of the baseline volume established under paragraph (c) of this section, except that for the year

2006, the total volume must meet or exceed 50% of the baseline volume.

(f) Compliance with the volume requirements in paragraph (e) of this section shall be determined on a calendar year basis, except that for the year 2006 compliance shall be determined for the period June 1, 2006 through December 31, 2006.

(g) If a refiner fails to comply with the requirements of paragraph (d) of this section, or if the approval of the application, including the baseline, was based on false or inaccurate information, the approval to produce gasoline subject to the GPA gasoline sulfur content standards under this section during the years 2007 and 2008 shall be void ab initio, and gasoline produced for use in the GPA must meet the gasoline sulfur content standards of subpart H of this Part as if there had been no approval to produce gasoline subject to the GPA gasoline sulfur content standards in 2007 and 2008.

(h) If for any compliance period a refiner fails to meet the volume requirements in paragraph (e) of this section, the approval to produce gasoline subject to the GPA gasoline sulfur content standards shall be void for that compliance period and for all succeeding compliance periods, and gasoline produced for use in the GPA must meet the gasoline sulfur standards under subpart H of this subpart as if there had been no approval to produce gasoline subject to the GPA gasoline sulfur content standards under this section in 2007 and 2008.

(i) A refiner that is approved for production of gasoline subject to the GPA gasoline sulfur standards under this section in 2007 and 2008 must meet all applicable recordkeeping and reporting requirements of §§ 80.592, 80.593, and 80.594, and shall meet all the recordkeeping and reporting requirements under §§ 80.219, 80.365 and 80.370.

(j) A refiner approved to produce gasoline subject to the GPA gasoline sulfur standards under this section in 2007 and 2008 may not generate or use credits under § 80.531(a) or (e), or § 80.532 unless the approval is vacated as provided in paragraph (k) of this section.

(k) A refiner may petition the Administrator to vacate approval to produce gasoline subject to the GPA gasoline sulfur content standards in 2007 and 2008. EPA may grant such a petition, effective January 1 of the compliance period following EPA's receipt of such petition (or effective June 1, in 2006, if applicable). Upon such effective date and thereafter, gasoline produced for use in the GPA

must meet the gasoline sulfur content standards under subpart H of this Part as if there had been no approval to produce gasoline subject to the GPA gasoline sulfur content standards under this section in 2007 and 2008. Upon such effective date, the refiner shall not be subject to the requirements of this section.

(l) The provisions of this section shall apply separately for each refinery of a refiner.

(m) If any refinery is approved for production of gasoline subject to GPA gasoline sulfur content standards under this section in 2007 and 2008, the GPA downstream gasoline sulfur standard under § 80.220(a)(2) shall apply as follows:

(1) During the period of February 1, 2005 through January 31, 2009, the sulfur content of GPA gasoline at any downstream location other than at a retail outlet or wholesale purchaser-consumer facility shall not exceed 326 ppm.

(2) During the period of March 1, 2005 through February 28, 2009, the sulfur content of GPA gasoline at any downstream location shall not exceed 326 ppm.

(n) A foreign refiner may apply to the Administrator to produce gasoline that is subject to the gasoline sulfur standards for GPA gasoline under § 80.216 for the compliance years 2007 and 2008. Such application must be submitted to the EPA, at the address in § 80.595(b), by December 31, 2001.

(1) The Administrator may approve such interim GPA gasoline sulfur standards for the foreign refiner provided that the foreign refiner applies for a gasoline sulfur baseline under paragraph (n)(2) of this section and complies with:

(i) The requirements of paragraphs (b) through (l) of this section;

(ii) The requirements for the import of motor vehicle diesel fuel under § 80.620; and

(iii) All applicable gasoline requirements for refiners under subpart H of this Part, including the foreign refiner requirements under § 80.410, the attest requirements of § 80.415, the recordkeeping and reporting requirements of §§ 80.365 and 80.370, the designation and product transfer document requirements of § 80.219, the sampling and testing requirements of § 80.330, and the sample retention requirements of § 80.335.

(2) The refiner must submit an application for a gasoline sulfur baseline under the provisions of §§ 80.216(a), 80.295, and 80.410(b).

(3) After review of the foreign refiner's individual refinery gasoline sulfur

baseline, its individual refinery motor vehicle diesel fuel baseline, and other information submitted with the application, the Administrator may approve such baselines and the application for GPA gasoline sulfur standards for 2007 and 2008.

(o) An importer is not eligible for approval to import gasoline subject to the GPA standards in 2007 or 2008 under this section.

#### §§ 80.541—80.549 [Reserved]

#### Small Refiner Hardship Provisions

##### § 80.550 What is the definition of a small refiner under this subpart?

(a) A small refiner is defined as any person, as defined by 42 U.S.C. 7602(e), who:

(1) Produces diesel fuel at a refinery by processing crude oil through refinery processing units;

(2) Employed an average of no more than 1,500 people, based on the average number of employees for all pay periods from January 1, 1999, to January 1, 2000; and

(3) Had an average crude capacity less than or equal to 155,000 barrels per calendar day (bpcd) for 1999.

(b) For the purpose of determining the number of employees and crude capacity under paragraph (a) of this section, the refiner shall include the employees and crude capacity of any subsidiary companies, any parent company and subsidiaries of the parent company in which the parent has 50% or greater ownership, and any joint venture partners.

(c) The definition under paragraph (a) of this section applies to domestic and foreign refiners. For any refiner owned by a governmental entity, the number of employees as specified in paragraph (a) of this section shall include all employees and total crude capacity of the governmental entity of which the governmental entity is a part.

(d) Notwithstanding the provisions of paragraph (a) of this section, a refiner that acquires a refinery after January 1, 2000, or reactivates a refinery that was shutdown or was non-operational between January 1, 1999, and January 1, 2000, may apply for small refiner status in accordance with the provisions of § 80.551(c)(1)(ii).

(e) *Ineligible parties.* The following are ineligible for the small refiner provisions:

(1) Refiners or refineries built or started up after January 1, 2000;

(2) Persons who exceed the employee or crude oil capacity criteria under this section on January 1, 2000, but who meet these criteria after that date, regardless of whether the reduction in

employees or crude oil capacity is due to operational changes at the refinery or a company sale or reorganization;

(3) Importers; and

(4) Refiners who produce motor vehicle diesel fuel other than by processing crude oil through refinery processing units.

(f)(1) Refiners who qualify as small refiners under this section and who subsequently employ more than 1500 people as a result of merger with or acquisition of another entity, are disqualified as small refiners. If this occurs, the refiner shall notify EPA in writing no later than 20 days following this disqualifying event.

(2) Any refiner whose status changes under this paragraph shall comply with the sulfur standard of § 80.520(a)(1) beginning January 1 of the calendar year following the disqualifying event in paragraph (f)(1) of this section.

(g) Notwithstanding the criteria in paragraph (a) of this section, any small refiner that has been approved by EPA as a small refiner under § 80.235 and meets the criteria of paragraph (a)(1) of this section, will be considered a small refiner under this section as well, for as long as they are a small refiner under § 80.225. The provisions of paragraph (f) of this section apply to any such refiner.

**§ 80.551 How does a refiner obtain approval as a small refiner under this subpart?**

(a)(1) Applications for small refiner status must be submitted to EPA by December 31, 2001 as part of the refiner's registration under § 80.597.

(2) In the case of a refiner who acquires a refinery after January 1, 2000, or reactivates a refinery that was shutdown between January 1, 1999, and January 1, 2000, the application for small refiner status must be submitted to EPA by June 1, 2003.

(b) Applications for small refiner status must be sent via certified mail with return receipt or express mail with return receipt to: U.S. EPA—Attn: Diesel Small Refiner Status (6406J), 1200 Pennsylvania Avenue, NW (6406J), Washington, DC 20460 (certified mail/return receipt) or Attn: Diesel Small Refiner Status, Transportation and Regional Programs Division, 501 3rd Street, NW (6406J), Washington, DC 20001 (express mail/return receipt).

(c) The small refiner status application must contain the following information for the company seeking small refiner status, plus any subsidiary companies, any parent company and subsidiaries of the parent company in which the parent has 50% or greater ownership, and any joint venture partners:

(1)(i) A listing of the name and address of each location where any employee worked during the 12 months preceding January 1, 2000; the average number of employees at each location based upon the number of employees for each pay period for the 12 months preceding January 1, 2000; and the type of business activities carried out at each location; or

(ii) In the case of a refiner who acquires a refinery after January 1, 2000, or reactivates a refinery that was shutdown between January 1, 1999, and January 1, 2000, a listing of the name and address of each location where any employee of the refiner worked since the refiner acquired or reactivated the refinery; the average number of employees at any such acquired or reactivated refinery during each calendar year since the refiner acquired or reactivated the refinery; and the type of business activities carried out at each location.

(2) The total corporate crude capacity of each refinery as reported to the Energy Information Administration (EIA) of the U.S. Department of Energy (DOE) for the most recent 12 months of operation. The information submitted to EIA is presumed to be correct. In cases where a company disagrees with this information, the company may petition EPA with appropriate data to correct the record when the company submits its application for small refiner status. EPA may accept such alternate data at its discretion.

(3) An indication of whether the refiner, for each refinery, is applying for:

(i) The ability to produce motor vehicle diesel fuel subject to the 500 ppm sulfur content standard under § 80.520(c) or generate credits under § 80.531, pursuant to the provisions of § 80.552(a) or (b); or

(ii) An extension of the duration of its small refiner gasoline sulfur standard under § 80.553, pursuant to the provisions of § 80.552(c).

(4) A letter signed by the president, chief operating or chief executive officer of the company, or his/her designee, stating that the information contained in the application is true to the best of his/her knowledge.

(5) Name, address, phone number, facsimile number and e-mail address (if available) of a corporate contact person.

(d) For joint ventures, the total number of employees includes the combined employee count of all corporate entities in the venture.

(e) For government-owned refiners, the total employee count includes all government employees.

(f) Approval of small refiner status for refiners who apply under § 80.550(d)

will be based on all information submitted under paragraph (c) of this section, except as provided in § 80.550(d).

(g) EPA will notify a refiner of approval or disapproval of small refiner status by letter. If disapproved, the refiner must comply with the sulfur standard in § 80.520, except as otherwise provided in this subpart.

(h) If EPA finds that a refiner provided false or inaccurate information on its application for small refiner status, upon notice from EPA the refiner's small refiner status will be void ab initio.

(i) Upon notification to EPA, an approved small refiner may withdraw its status as a small refiner. Effective on January 1 of the year following such notification, the small refiner will become subject to the sulfur standard of § 80.520 unless one of the hardship provisions of this subpart apply.

**§ 80.552 What compliance options are available to small refiners?**

(a) A refiner that has been approved by EPA as a small refiner under § 80.551(g) may produce motor vehicle diesel fuel subject to the 500 ppm sulfur content standard pursuant to the provisions of § 80.530, except that the volume limits of § 80.530(a)(3) shall only apply to that volume V<sup>500</sup> of diesel fuel that is produced or imported during a calendar year that exceeds 105% of the baseline volume established under § 80.595. The calendar year period shall be from January 1st through December 31st. For the period June 1, 2006 through December 31, 2006, the volume limits shall only apply to that volume VV<sup>500</sup> that exceeds 60% of the baseline volume.

(b) A refiner that has been approved by EPA as a small refiner under § 80.551(g) may generate motor vehicle diesel fuel credits pursuant to the provisions of § 80.531, except that for purposes of § 80.531(a) the term Credit shall equal VV<sup>15</sup>, without further adjustment.

(c) A refiner that has been approved by EPA as a small refiner under § 80.551(g) may apply for an extension of the duration of its small refiner gasoline sulfur standards pursuant to § 80.553.

(d) A refiner that produces motor vehicle diesel fuel under the provisions of paragraph (a) of this section or generates credits under the provisions of paragraph (b) of this section may not receive an extension of its small refiner gasoline sulfur standard under the provisions of paragraph (c) of this section. A refiner that receives an extension of its small refiner gasoline

sulfur standard under the provisions of paragraph (c) of this section may not produce motor vehicle diesel fuel under the provisions of paragraph (a) of this section and may not generate credits under the provisions of paragraph (b) of this section.

(e) The provisions of this section shall apply separately for each refinery owned or operated by a small refiner.

**§ 80.553 Under what conditions may the small refiner gasoline sulfur standards be extended for a small refiner of motor vehicle diesel fuel?**

(a) A refiner that has been approved by EPA for small refiner gasoline sulfur standards under § 80.240 may apply, under § 80.551, for an extension of the duration of its small refiner gasoline sulfur standards through the calendar year 2010 annual averaging period.

(b) As part of its application, the refiner must submit an application for a motor vehicle diesel fuel baseline in accordance with the provisions of §§ 80.595 and 80.596. The application must also include information, as provided in § 80.594, demonstrating that starting no later than June 1, 2006, all motor vehicle diesel fuel produced by the refiner will comply with the 15 ppm sulfur content standard under § 80.520(a)(1), and that the volume of motor vehicle diesel fuel produced will comply with the volume requirements of paragraph (e) of this section.

(c) The Administrator may approve an application for extension of the small refiner gasoline sulfur standards if the provisions of paragraph (b) of this section and §§ 80.595 and 80.596 are satisfied. In approving an application for extension, the Administrator shall establish a motor vehicle diesel fuel volume baseline under §§ 80.595 and 80.596.

(d) Beginning June 1, 2006, and continuing through December 31, 2010, all motor vehicle diesel fuel produced by a refiner that has received an extension of its small refiner gasoline sulfur standards under this section must be accurately designated under § 80.523 as meeting the 15 ppm sulfur content standard under § 80.520(a)(1).

(e) The total volume of motor vehicle diesel fuel produced for use in the United States and designated as meeting the 15 ppm sulfur content standard under paragraph (d) of this section must meet or exceed 85% of the baseline volume established under paragraph (c) of this section, except that for the year 2006, the total volume must meet or exceed 50% of the baseline volume.

(f) Compliance with the volume requirements in paragraph (e) of this section shall be determined on a

calendar year basis, except that for the year 2006 compliance shall be determined for the period June 1, 2006 through December 31, 2006.

(g) If a refiner fails to comply with the requirements of paragraph (d) of this section, or if approval of the application, including the baseline, was based on false or inaccurate information, the extension of the applicable small refiner gasoline sulfur standards under this section shall be void ab initio, and all gasoline produced by the refinery must meet the gasoline sulfur standards under subpart H of this Part as if there had been no extension of the small refiner gasoline sulfur standards.

(h) If for any compliance period a refiner fails to meet the volume requirements in paragraph (e) of this section, the extension of the small refiner gasoline sulfur standards shall be void for that compliance period and for all succeeding compliance periods and all gasoline produced by the refinery must meet the gasoline sulfur standards under subpart H of this part as if there had been no extension of the small refiner gasoline sulfur standards under this section for such compliance periods.

(i) A refiner that is approved for an extension of the interim small refiner gasoline sulfur standards under this section must meet all applicable recordkeeping and reporting requirements of §§ 80.592, 80.593, and 80.594, and shall meet all the recordkeeping and reporting requirements under §§ 80.210, 80.365 and 80.370. Any foreign refiner shall meet all additional requirements under §§ 80.620 and 80.410.

(j) A refiner approved for the small refiner gasoline sulfur standards extension under this section may not generate or use credits under § 80.531(a) or (e), or § 80.532.

(k) A refiner may petition the Administrator to vacate an extension of the small refiner gasoline sulfur content standards. EPA may grant such a petition, effective January 1 of the compliance period following receipt of such petition (or effective June 1, 2006, if applicable). Upon such effective date, all gasoline produced by the refiner must meet the gasoline sulfur content standards under subpart H of this Part as if there had been no extension of the small refiner gasoline sulfur content standards under this section. Upon such effective date, the refiner shall not be subject to the requirements of this section.

(l) The provisions of this section shall apply separately for each refinery of a refiner.

**§§ 80.554–80.559 [Reserved]**

**Other Hardship Provisions**

**§ 80.560 How can a refiner seek temporary relief from the requirements of this subpart in case of extreme hardship circumstances?**

(a) EPA may, at its discretion, grant a refiner, for one or more of its refineries, temporary relief from some or all of the provisions of this subpart. Such relief shall be no less stringent than the small refiner compliance options specified in § 80.552. EPA may grant such relief provided that the refiner demonstrates that:

(1) Unusual circumstances exist that impose extreme hardship and significantly affect the refiner's ability to comply by the applicable date; and

(2) It has made best efforts to comply with the requirements of this subpart.

(b) Applications must be submitted to EPA by June 1 2002 to the following address: Applications for small refiner status must be sent via certified mail with return receipt or express mail with return receipt to: U.S. EPA-Attn: Diesel Hardship (6406J), 1200 Pennsylvania Avenue, NW (6406J), Washington, DC 20460 (certified mail/return receipt) or Attn: Diesel Hardship, Transportation and Regional Programs Division, 501 3rd Street, NW (6406J), Washington, DC 20001 (express mail/return receipt). EPA reserves the right to deny applications for appropriate reasons, including unacceptable environmental impact. Approval to distribute motor vehicle diesel fuel not subject to the 15 ppm sulfur standard may be granted for such time period as EPA determines is appropriate, but shall not extend beyond May 31, 2010.

(c) Applications must include a plan demonstrating how the refiner will comply with the requirements of this subpart as expeditiously as possible. The plan shall include a showing that contracts are or will be in place for engineering and construction of desulfurization equipment a plan for applying for and obtaining any permits necessary for construction or operation, projected timeline for beginning and completing construction, and for beginning actual operation of such equipment, and a description of plans to obtain necessary capital, and a detailed estimate of when the requirements of this subpart will be met.

(d) Applicants must provide, at a minimum, the following information:

(1) Detailed description of efforts to obtain capital for refinery investments and efforts made to obtain credits for compliance under § 80.531;

(2) Bond rating of entity that owns the refinery (in the case of joint ventures,

include the bond rating of the joint venture entity and the bond ratings of all partners; in the case of corporations, include the bond ratings of any parent or subsidiary corporations); and

(3) Estimated capital investment needed to comply with the requirements of this subpart by the applicable date.

(e) In addition to the application requirements of paragraph (b) of this section, a refiner's application for temporary relief under this paragraph must also include a compliance plan. Such compliance plan shall demonstrate how the refiner will engage in a quality assurance testing program to ensure that its motor vehicle diesel fuel subject solely to the sulfur standards under § 80.520(c) has not caused motor vehicle diesel fuel subject to the 15 ppm standard § 80.520(a)(1) to fail to comply with that standard. The quality assurance program must at least include periodic sampling and testing at the party's own facilities and at downstream facilities in the refiner's or importer's diesel fuel distribution system, to determine compliance with the applicable sulfur standards for both categories of motor vehicle diesel fuel; examination at the party's own facilities and at applicable downstream facilities, of product transfer documents to confirm appropriate transfers and deliveries of both products; and inspection of retailer and wholesale purchaser-consumer pump stands for the presence of the labels and warning signs required under this section. Any violations that are discovered shall be reported to EPA within 48 hours of discovery.

(f) Applications under this section must be accompanied by:

(1) A letter signed by the president, chief operating or chief executive officer of the company, or his/her designee, stating that the information contained in the application is true to the best of his/her knowledge.

(2) The name, address, phone number, facsimile number and e-mail address of a corporate contact person.

(g) Applicants must also provide any other relevant information requested by EPA.

(h) Refiners who are granted a hardship relief standard for any refinery, and importers of fuel subject to temporary refiner relief standards, may not distribute the diesel fuel subject to the sulfur standard under § 80.520(c) for use in model year 2007 and later vehicles and must comply with all applicable provisions of this subpart, including the provisions of this subpart.

(i) EPA may impose any reasonable conditions on waivers under this section, including limitations on the

refinery's volume of motor vehicle diesel fuel subject to a temporary refiner relief standards.

(j) The provisions of this section are available only to refineries that produce diesel fuel from crude.

(k) The individual refinery sulfur standard and the compliance plan will be approved or disapproved by the Administrator, and approval will be effective when the refiner (or importer, as applicable, in the case of compliance plans) receives an approval letter from EPA. If disapproved, the refiner or importer must comply with the motor vehicle diesel fuel standard under § 80.520(a)(1) by the appropriate compliance date specified in § 80.500.

(l) If EPA finds that a refiner provided false or inaccurate information on its application for small refiner status, upon notice from EPA the refiner's small refiner status will be void ab initio.

**§ 80.561 How can a refiner or importer seek temporary relief from the requirements of this subpart in case of extreme unforeseen circumstances?**

In appropriate extreme, and unforeseen circumstances (e.g., natural disaster or refinery fire) which are clearly outside the control of the refiner or importer and which could not have been avoided by the exercise of prudence, diligence and due care, EPA may permit a refiner or importer, for a brief period, to distribute motor vehicle diesel fuel which does not meet the requirements of this subpart if:

(a) It is in the public interest to do so (e.g., distribution of the nonconforming diesel fuel is necessary to meet projected shortfalls which cannot otherwise be compensated for);

(b) The refiner or importer exercised prudent planning and was not able to avoid the violation and has taken all reasonable steps to minimize the extent of the nonconformity;

(c) The refiner or importer can show how the requirements for motor vehicle diesel fuel will be expeditiously achieved;

(d) The refiner or importer agrees to make up any air quality detriment associated with the nonconforming motor vehicle diesel fuel, where practicable;

(e) The refiner or importer pays to the U.S. Treasury an amount equal to the economic benefit of the nonconformity minus the amount expended pursuant to paragraph (d) of this section, in making up the air quality detriment; and

(f) In the case of motor vehicle diesel fuel distributed under this section that does not meet the 15 ppm sulfur standard under § 80.520(a)(1), such

diesel fuel shall not be distributed for use in model year 2007 or later motor vehicles, and must meet all the requirements and prohibitions of this subpart applicable to diesel fuel meeting the sulfur standard under § 80.520(c), or to diesel fuel that is not motor vehicle diesel fuel, as applicable.

**§§ 80.562–80.569 [Reserved]**

**Labeling Requirements**

**§ 80.570 What labeling requirements apply to retailers and wholesale purchaser-consumers of motor vehicle diesel fuel?**

(a) Any retailer or wholesale purchaser-consumer who sells, dispenses, or offers for sale or dispensing, motor vehicle diesel fuel subject to the 500 ppm sulfur standard of § 80.520(c), must prominently and conspicuously display in the immediate area of each pump stand from which motor vehicle fuel subject to the 500 ppm standard is offered for sale or dispensing, the following legible label, in block letters of no less than 36-point bold type, printed in a color contrasting with the background:

HIGH-SULFUR DIESEL FUEL—  
WARNING

May damage model year 2007 and later highway vehicles.

Federal Law *prohibits* use in these vehicles.

(b) Any retailer or wholesale purchaser-consumer who sells, dispenses, or offers for sale or dispensing, motor vehicle diesel fuel subject to the 15 ppm sulfur standard of § 80.520(a)(1), must affix the following conspicuous and legible label, in block letters of no less than 36-point bold type, and printed in a color contrasting with the background, to each pump stand:

LOW-SULFUR DIESEL FUEL

Recommended for use in all diesel vehicles.

*Required* for model year 2007 and later vehicles.

(c) Any retailer or wholesale purchaser-consumer who sells, dispenses, or offers for sale or dispensing, diesel fuel for nonroad equipment that does not meet the standards for motor vehicle diesel fuel, must affix the following conspicuous and legible label, in block letters of no less than 36-point bold type, and printed in a color contrasting with the background, to each pump stand:

NONROAD DIESEL FUEL—WARNING

May damage or destroy highway engines and their emission controls.

Federal Law *prohibits* use in any highway vehicle.

(d) The labels required by paragraphs (a) through (c) of this section must be placed on the vertical surface of each pump housing and on each side with gallonage and price meters. The labels shall be on the upper two-thirds of the pump, in a location where they are clearly readable by the public.

#### §§ 80.571–80.579 [Reserved]

#### Sampling and Testing

##### § 80.580 What are the sampling and testing methods for sulfur?

(a) *Diesel fuel and diesel fuel additives.* For purposes of §§ 80.520 and 80.521, the sulfur content of diesel and diesel fuel additives is to be determined in accordance with this section.

(1) *Sampling method.* The applicable sampling methodology provided in § 80.330(b).

(2) *Test method for sulfur.* (i) For diesel fuel and diesel fuel additives subject to the 15 ppm sulfur standard of § 80.520(a)(1), the American Society for Testing and Materials (ASTM) standard method D 6428–99, entitled “Test Method for Total Sulfur in Liquid Aromatic Hydrocarbons and Their Derivatives by Oxidative Combustion and Electrochemical Detection.”

(ii) For diesel fuel and diesel fuel additives subject to the 500 ppm sulfur standard of 80.520(c), ASTM standard method D 2622–98, “Standard Test Method for Sulfur in Petroleum Products by X-Ray Spectrometry.”

(3) *Alternative test methods for sulfur.* (i) For diesel fuel and diesel fuel additives subject to the 15 ppm standard of § 80.520(a)(1), sulfur content may be determined using ASTM D 5453–99, entitled “Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Ultraviolet Fluorescence,” or ASTM D 3120–96, entitled “Standard Test Method for Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Microcoulometry,” provided that the refiner or importer test result is correlated with the appropriate method specified in paragraph (a)(2) of this section.

(ii) For diesel fuel and diesel fuel additives subject to the 500 ppm standard of § 80.520(c), sulfur content may be determined using ASTM D 5453–99, “Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Ultraviolet Fluorescence,” or ASTM D 6428–00, entitled “Test Method for Total Sulfur in Liquid Aromatic Hydrocarbons and Their Derivatives by Oxidative Combustion and Electrochemical Detection,” provided that the refiner or importer test result is

correlated with the appropriate method specified in paragraph (a)(2) of this section.

(4) *Adjustment Factor for downstream test results.* An adjustment factor of negative 2 ppm shall be applied to the test results, to account for test variability, but only for testing of motor vehicle diesel fuel identified as subject to the 15 ppm sulfur standard of § 80.520(a)(1), at a downstream location as defined in § 80.500(f).

(b) *Incorporation by reference.* ASTM Standard Methods D 2622–98, “Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry,” D 3120–96, “Standard Test Method for Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Microcoulometry,” D 6428–99, “Test Method for Total Sulfur in Liquid Aromatic Hydrocarbons and Their Derivatives by Oxidative Combustion and Electrochemical Detection,” and D 5453–00, “Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Ultraviolet Fluorescence,” are incorporated by reference. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Dr., West Conshohocken, PA 19428–2959. Copies may be inspected at the Air Docket Section (LE–131), Room M–1500, U.S. Environmental Protection Agency, Docket No. A–99–06, 401 M Street, SW, Washington, DC 20460, or at the Office of the Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC.

#### §§ 80.581–80.589 [Reserved]

#### Recordkeeping and Reporting Requirements

##### § 80.590 What are the product transfer document requirements for motor vehicle diesel fuel?

On each occasion that any person transfers custody or title to motor vehicle diesel fuel, including distillates used or intended to be used as motor vehicle diesel fuel, except when such fuel is dispensed into motor vehicles at a retail outlet or wholesale purchaser-facility, the transferor must provide to the transferee documents identifying the fuel as motor vehicle diesel fuel, and which include the following information:

(a) The name and address of the transferor and transferee.

(b) The volume of motor vehicle diesel fuel which is being transferred.

(c) The location of the motor vehicle diesel fuel at the time of the transfer.

(d) The date of the transfer.

(e) Except as provided in 40 CFR 69.51, an accurate statement, as applicable, that:

(1) “This fuel complies with the 15 ppm low sulfur standard for motor vehicle diesel fuel.”;

(2) “This fuel complies with the 500 ppm high sulfur standard for motor vehicle diesel fuel and is for use only in MY 2006 and older diesel motor vehicles.”;

(3) “This is high sulfur motor vehicle diesel fuel for use only in Guam, American Samoa, or the Northern Mariana Islands.”;

(4) “This diesel fuel is for export use only.”;

(5) “This diesel fuel is for research, development, or testing purposes only.”;

(6) “This diesel fuel is for use in diesel vehicles having an EPA-approved national security exemption only.”.

(f) For motor vehicle diesel fuel that contains visible evidence of the dye solvent red 164, and is intended to be used in a manner that is tax-exempt as defined under section 4082 of the Internal Revenue Code, the following statement:

This fuel is motor vehicle diesel fuel for tax-exempt use only, in accordance with Section 4082 of the Internal Revenue Code.

(g) Except for transfers to truck carriers, retailers or wholesale purchaser-consumers, product codes may be used to convey the information required under this section if such codes are clearly understood by each transferee. Codes used to convey the statement in paragraph (e)(1) of this section must contain the number “15”, and codes used to convey the statement in paragraph (e)(2) of this section must contain the number “500”.

(h) Beginning June 1, 2001 and ending May 31, 2005, any transfer subject to this section, which is also subject to the early credit provisions of § 80.531(b), must comply with all applicable requirements of this section except those in paragraph (e) of this section.

(i) Beginning June 1, 2005 and ending May 31, 2006, any transfer subject to this section, which is also subject to the early credit requirements of § 80.531(c), must comply with all applicable requirements of this section.

##### § 80.591 What are the product transfer document requirements for additives to be used in diesel fuel?

(a) Except as provided in paragraphs (b) and (d) of this section, on each

occasion that any person transfers custody or title to a motor vehicle diesel fuel additive to a party in the additive distribution system or in the motor vehicle diesel fuel distribution system for use downstream of the diesel fuel refiner, the transferor must provide to the transferee documents which identify the additive, and:

(1) Identify the name and address of the transferor and transferee; the date of transfer; the location at which the transfer took place; the volume of additive transferred; and

(2) Indicates compliance with the 15 ppm sulfur standard by inclusion of the following statement:

The sulfur content of this diesel fuel additive does not exceed 15 ppm.

(b) On each occasion that any person transfers custody or title to a motor vehicle diesel fuel additive subject to the requirements of § 80.521(b), to a party in the additive distribution system or in the motor vehicle diesel fuel distribution system for use in diesel fuel downstream of the diesel fuel refiner, the transferor must provide to the transferee documents which identify the additive, and:

(1) Identify the name and address of the transferor and transferee; the date of transfer; the location at which the transfer took place; the volume of additive transferred.

(2) Indicate the high sulfur potential of the additive by inclusion of the following statement:

This motor vehicle diesel fuel additive may exceed the federal 15 ppm sulfur standard. Improper use of this additive may result in non-complying diesel fuel.

(3) Includes the following information:

(i) The additive's maximum sulfur concentration;

(ii) The maximum recommended concentration in volume percent for use of the additive in diesel fuel; and

(iii) The contribution to the sulfur level of the fuel, in ppm, that would result if the additive is used at the maximum recommended concentration.

(c) Except for transfers of motor vehicle diesel fuel additives to truck carriers, retailers or wholesale purchaser-consumers, product codes may be used to convey the information required under paragraphs (a) and (b) of this section, if such codes are clearly understood by each transferee. Codes used to convey the statement in paragraph (a)(2) of this section must contain the number "15" and codes used to convey the statement in paragraph (b)(2) of this section may not contain such number.

(d) For those motor vehicle diesel fuel additives which are sold in containers for use by the ultimate consumer of diesel fuel, each transferor must have displayed on the additive container, in a legible and conspicuous manner, either of the following statements, as applicable:

(1) "This diesel fuel additive complies with the federal low sulfur content requirements for use in diesel motor vehicles."; or

(2) For those additives sold in containers for use by the ultimate consumer, with a sulfur content in excess of 15 ppm: "This diesel fuel additive does not comply with federal low sulfur content requirements for use in model year 2007 and newer diesel motor vehicles."

#### **§ 80.592 What records must be kept?**

(a) *Records that must be kept by parties in the motor vehicle diesel fuel and motor vehicle diesel fuel additive distribution systems.* Beginning June 1, 2006, or for a refiner the first compliance period in which the refiner is generating early credits under § 80.531(b) or (c), whichever is earlier, any person who produces, imports, sells, offers for sale, dispenses, distributes, supplies, offers for supply, stores, or transports motor vehicle diesel fuel subject to the provisions of this subpart, must keep the following records:

(1) The applicable product transfer documents required under §§ 80.590 and 80.591;

(2) For any sampling and testing for sulfur content, cetane index or aromatics content of motor vehicle diesel fuel or motor vehicle diesel fuel additives, conducted as part of a quality assurance program or otherwise:

(i) The location, date, time and storage tank or truck identification for each sample collected;

(ii) The name and title of the person who collected the sample and the person who performed the testing; and

(iii) The results of the tests for sulfur content (including where applicable the test results with and without application of the adjustment factor under § 80.580(a)(4)) or other standard content, and the volume of product in the storage tank or container from which the sample was taken;

(3) The actions the party has taken, if any, to stop the sale or distribution of any motor vehicle diesel fuel found not to be in compliance with the sulfur standards specified in this subpart, and the actions the party has taken, if any, to identify the cause of any noncompliance and prevent future instances of noncompliance.

(b) *Additional records to be kept by refiners and importers of motor vehicle diesel fuel subject to temporary refiner relief standards, small refiner standards, and early credit provisions.* Beginning June 1, 2006, or for a refiner the first compliance period in which the refiner is generating early credits under § 80.531(b) or (c), whichever is earlier, any refiner producing motor vehicle diesel fuel subject to the sulfur standard under § 80.520(a)(1), for each of its refineries, and any importer importing such motor vehicle diesel fuel, shall keep records that include the following information for each batch of motor vehicle diesel fuel produced or imported:

(1) The batch volume.

(2) The batch number, assigned under the batch numbering procedures under § 80.65(d)(3).

(3) The date of production or import.

(4) A record designating the batch as meeting the 500 ppm sulfur standard or the 15 ppm sulfur standard.

(5) For foreign refiners, the designations and other records required to be kept under § 80.620.

(6) In the case of importers, the designations and other records required under § 80.620(o).

(7) Information regarding credits, kept separately for each calendar year compliance period, kept separately for each refinery and in the case of importers, kept separately for imports into each CTA, as follows:

(i) The number of credits in the refiner's or importer's possession at the beginning of the calendar year;

(ii) The number of credits generated;

(iii) The number of credits used;

(iv) If any were obtained from or transferred to other parties, for each such other party, its name, its EPA refiner or importer registration number consistent with § 80.593(d), in the case of credits generated by an importer the port and CTA of import of the diesel fuel that generated the credits, and the number obtained from, or transferred to, the other party;

(v) The number in the refiner's or importer's possession that will carry over into the subsequent calendar year compliance period; and

(vi) Commercial documents that establish each transfer of credits from the transferor to the transferee.

(8) The calculations used to determine compliance with the volume requirements of this subpart.

(9) The calculations used to determine the number of credits generated.

(10) A copy of reports submitted to EPA under § 80.593.

(c) *Additional records importers must keep.* Any importer shall keep records

that identify and verify the source of each batch of certified diesel fuel program foreign refiner (DFR)-Diesel and non-certified DFR-Diesel imported and demonstrate compliance with the requirements under § 80.620.

(d) *Length of time records must be kept.* The records required in this section shall be kept for five years from the date they were created, except that records relating to credit transfers shall be kept by the transferor for 5 years from the date the credits were transferred, and shall be kept by the transferee for 5 years from the date the credits were transferred, used or terminated, whichever is later.

(e) *Make records available to EPA.* On request by EPA the records required in paragraphs (a), (b) and (c) of this section must be made available to the Administrator or the Administrator's authorized representative. For records that are electronically generated or maintained the equipment and software necessary to read the records shall be made available, or if requested by EPA, electronic records shall be converted to paper documents which shall be provided to the Administrator's authorized representative.

**§ 80.593 What are the reporting and registration requirements for refiners and importers of motor vehicle diesel fuel subject to temporary refiner relief standards?**

Beginning with 2006, or the first compliance period during which credits are generated under § 80.531(b) or (c), whichever is earlier, any refiner or importer who produces or imports motor vehicle diesel fuel subject to the 500 ppm sulfur standard under § 80.520(c), or any refiner or importer who generates, uses, obtains or transfers credits under §§ 80.530 through 80.532, and continuing for each year thereafter, must submit to EPA annual reports that contain the information required in this section, and such other information as EPA may require:

(a) *Refiners and importers.* Refiners and importers must report the following information separately for each refinery or CTA, in the case of importers, subject to a phase-in sulfur standard, small refiner standard or temporary refiner relief sulfur standard, or who generates, uses or transfers credits under §§ 80.530 through 80.532:

(1) The refiner's name and the EPA refinery registration number.

(2) For all motor vehicle diesel fuel produced for use in the United States during the compliance period:

(i) The total volume of motor vehicle diesel fuel produced;

(ii) The volume, in gallons, that complied with a sulfur content standard of 500 ppm; and

(iii) The volume, in gallons, that complied with the 15 ppm sulfur content standard.

(3) The percentage of the volume motor vehicle diesel fuel produced during the calendar year that met the 15 ppm sulfur standard and the percentage that met the 500 ppm sulfur standard prior to the application of any volume credits.

(4) The percentage of volume of motor vehicle diesel fuel produced meeting the 15 ppm sulfur standard after the inclusion of any credits.

(5) Information regarding credits, separately for each refinery and for credits or debits related to imported motor diesel fuel, separately by importer and separately by CTA of import as follows:

(i) The CTA of the refiner's refinery or the importer's or the foreign refiner's CTA and port of importation;

(ii) The number of credits at the beginning of the compliance period;

(iii) The number of credits generated;

(iv) The number of credits used;

(v) If any credits were obtained from or transferred to other refineries or import ports, for each other refinery or importer, its name, address (or Port) and CTA, EPA refinery or importer registration number, and the number of credits obtained from or transferred to the other refinery or importer (by import CTA);

(vi) The number of credits, if any, that will carry over to the subsequent compliance period; and

(vii) The number of credits in deficit that must be made up for the following year;

(6) The reporting requirements under § 80.620, if applicable.

(7) For each batch of motor vehicle diesel fuel produced or imported during the compliance period:

(i) The batch number assigned using the batch numbering conventions under § 80.65(d)(3) and the appropriate designation under § 80.523;

(ii) The date the batch was produced; and

(iii) The volume of the batch, in gallons.

(8) When submitting reports under this paragraph (a), any importer shall exclude certified DFR-Diesel.

(b) *Additional reporting requirements for importers.* Importers of motor vehicle diesel fuel subject to the 500 ppm sulfur standard must report the following information:

(1) The importer's name and EPA registration number.

(2) For each foreign refinery from which motor vehicle diesel fuel is

imported that is subject to a sulfur standard under § 80.520(c), the importer must report, for each batch of diesel fuel imported, the information required to be reported under § 80.620(o).

(c) *Report submission.* Any annual report required by this section shall be:

(1) Signed and certified as meeting all the applicable requirements of this subpart by the owner or a responsible corporate officer of the refiner or importer; and

(2) Submitted to EPA no later than the last day of February for the prior calendar year period.

**§ 80.594 What are the pre-compliance reporting requirements?**

(a) Beginning on June 1, 2003, and on June 1, 2004 and June 1, 2005, all refiners and importers planning to produce or import motor vehicle diesel fuel subject to the provisions of this subpart, shall submit the following information to EPA:

(1) Any changes to the information submitted for the company registration;

(2) Any changes to the information submitted for any refinery or import facility registration;

(3) An estimate of the annual production or importation, in gallons, after June 1, 2006, for each refinery and import facility, of 15 ppm motor vehicle diesel fuel produced from crude oil and, if applicable, 500 ppm motor vehicle diesel fuel produced from crude oil, and the volumes of each grade of motor vehicle diesel fuel produced from other sources;

(4) If expecting to participate in the temporary compliance options provisions and the credit trading program, estimates of the number of credits to be generated and/or used each year the program is applicable;

(5) Information regarding engineering plans (e.g., design and construction), the status of obtaining any necessary permits, and capital commitments for making the necessary modifications to produce low sulfur motor vehicle fuel, and actual construction progress. The pre-compliance reports due 2004 and 2005 must provide an update of the progress in each of these areas.

(b) Beginning on June 1, 2003, all approved small refiners shall submit the following additional information to EPA, as applicable:

(1) In the case of a refinery with an approved application under § 80.552(a):

(i) A showing that sufficient sources of 15 ppm motor vehicle diesel fuel will likely be available in its marketing area after June 1, 2006 and through 2010;

(ii) If after 2003 the sources of 15 ppm motor vehicle diesel fuel decrease, the pre-compliance reports for 2004 and/or



2005 must identify this change and must include a supplementary showing that the sources of 15 ppm motor vehicle diesel fuel are still sufficient.

(2) In case of a refinery with an approved application under § 80.552(c), a demonstration that by June 1, 2006 its motor vehicle diesel fuel will be at 15 ppm sulfur at a volume at least 85% of its baseline motor vehicle diesel fuel volume.

(c) For each refiner and importer approved under § 80.540, a demonstration that by June 1, 2006 all of its motor vehicle diesel fuel will be at 15 ppm sulfur at a volume of at least 85% of its baseline motor vehicle diesel fuel volume.

(d) By July 1, 2006, each refiner and importer of motor vehicle diesel fuel shall submit a report to EPA stating that the production or importation of 15 ppm sulfur motor vehicle diesel fuel commenced by June 1, 2006.

#### § 80.595 How does a refiner apply for a motor vehicle diesel fuel volume baseline?

(a) Any small refiner applying for extension of the duration of its small refiner gasoline sulfur standards of § 80.240, under §§ 80.552(c) and 80.553, or any refiner applying for an extension of the duration of the GPA standards under § 80.540 must apply for a motor vehicle diesel fuel volume baseline by December 31, 2001. A separate volume baseline must be sought for each refinery for which application of the provisions of § 80.553 or § 80.540 is sought.

(b) The volume baseline must be sent via certified mail with return receipt or express mail with return receipt to: U.S. EPA-Attn: Diesel Baseline (6406J), 1200 Pennsylvania Avenue, NW (6406J), Washington, DC 20460 (certified mail/return receipt) or Attn: Diesel Baseline, Transportation and Regional Programs Division, 501 3rd Street, NW (6406J), Washington, DC 20001 (express mail/return receipt).

(c) The motor vehicle diesel fuel volume baseline application must include the following information:

(1) A listing of the names and addresses of all refineries owned by the refiner for which the refiner is applying for a motor vehicle diesel fuel volume baseline.

(2) The average annual volume (in gallons) of motor vehicle diesel fuel produced for U.S. use in 1998 and 1999, for each refinery for which the refiner is applying for such baseline, calculated in accordance with § 80.596. The refiner shall follow the procedures, applicable to volume baselines and using motor vehicle diesel fuel instead of gasoline, specified in §§ 80.91 through 80.93 to

establish the volume of motor vehicle diesel fuel that was produced for U.S. use in 1998 and 1999 for purposes of establishing a volume baseline under this section.

(3) A letter signed by the president, chief operating, or chief executive officer of the company, or his/her delegate, stating that the information contained in the volume baseline determination is true to the best of his/her knowledge.

(4) Name, address, phone number, facsimile number, and e-mail address (if available) of a corporate contact person.

(5) The following information for each batch of motor vehicle diesel fuel produced for U.S. use in 1998 and 1999:

(i) Batch number assigned to the batch under procedures such as those in § 80.65(d) or § 80.101(i), or, if unavailable, such other identifying information as is available; and

(ii) Volume of the batch, in gallons.

(6) For a refinery that was not in operation during part or all of the period 1998 and 1999, the information required under this paragraph (c) for the motor vehicle diesel fuel produced for U.S. use during the most recent calendar year that the refinery was in operation after the refinery was reactivated.

(d) Within 120 days of receipt of an application under this section, EPA will notify the refiner of an approval of the refinery's baseline, or of any deficiencies in the application.

(e) If at any time the baseline submitted in accordance with the requirements of this section is determined to be incorrect, EPA will notify the refiner of the corrected baseline. The corrected baseline shall apply to all applicable compliance calculations under this subpart.

(f)(1) If insufficient information is available for the Administrator to establish a baseline under the provisions of paragraph (c) of this section and § 80.596(a), the refiner shall submit additional information sufficient for the Administrator to establish a baseline.

(2) To satisfy the requirements of paragraph (f)(1) of this section, the Administrator may require, and consider, any information pertinent to establish a baseline, including:

(i) Motor vehicle diesel fuel production volumes for other years;

(ii) Crude capacity of the refinery;

(iii) The ratio, or the typical ratio, for other similarly sized or configured refineries, between motor vehicle diesel fuel production and gasoline production.

#### § 80.596 How is a refinery motor vehicle diesel fuel volume baseline calculated?

(a) For purposes of this subpart, a refinery's motor vehicle diesel fuel volume baseline is calculated using the following equation:

$$V_{\text{Base}} = \frac{\sum_{i=1}^n (V_i)}{m/12}$$

Where:

$V_{\text{Base}}$  = Volume baseline value.

$V_i$  = Volume of motor vehicle diesel fuel batch  $i$ .

$n$  = Total number of batches of motor vehicle diesel fuel produced for U.S. use during January 1, 1998 through December 31, 1999 (or the total number of batches of motor vehicle diesel fuel produced during the most recent calendar year the refinery was in operation after being reactivated pursuant to § 80.595(c)(6)); or, for a foreign refinery, the total number of batches of motor vehicle diesel fuel produced and imported into the U.S. during January 1, 1998 through December 31, 1999 (or the total number of batches of motor vehicle diesel fuel produced and imported into the U.S. during the most recent calendar year the refinery was in operation after being reactivated pursuant to § 80.595(c)(6)).

$i$  = Individual batch of motor vehicle diesel fuel produced during January 1, 1998 through December 31, 1999 (or individual batch of motor vehicle diesel fuel produced during the most recent calendar year the refinery was in operation after being reactivated pursuant to § 80.595(c)(6)); or, for a foreign refinery, individual batch of motor vehicle diesel fuel produced and imported into the U.S. during January 1, 1998 through December 31, 1999 (or individual batch of motor vehicle diesel fuel produced and imported into the U.S. during the most recent calendar year the refinery was in operation after being reactivated pursuant to § 80.595(c)(6)).

$m$  = Number of months in the baseline period (24 except in the case of a startup or reactivation).

(b) If insufficient information is available for the Administrator to establish a baseline under paragraph (a) of this section, the baseline may be determined under the provisions of § 80.595(f).

#### § 80.597 What are the registration requirements?

Refiners having any refinery that is subject to a sulfur standard under § 80.520(c), and importers importing such diesel fuel, must provide EPA the information under § 80.76 no later than December 31, 2001, if such information has not been provided under the provisions of this part. In addition, for each import facility, the same identifying information as required for each refinery under § 80.76(c) must be provided.

**§§ 80.598–80.599 [Reserved]****Exemptions****§ 80.600 What are the requirements for obtaining an exemption for motor vehicle diesel fuel used for research, development or testing purposes?**

(a) *Written request for R&D exemption.* Any person may receive an exemption from the provisions of this subpart for motor vehicle diesel fuel used for research, development, or testing (“R&D”) purposes by submitting the information listed in paragraph (c) of this section to:

(1) Director (6406J), Transportation and Regional Programs Division, U.S. Environmental Protection Agency, Ariel Rios Building, 1200 Pennsylvania Avenue, NW., Washington, DC 20460 (postal mail); or

(2) Director (6406J), Transportation and Regional Programs Division, U.S. Environmental Protection Agency, 501 3rd Street, NW., Washington, DC 20001 (express mail/courier); and

(3) Director (2242A), Air Enforcement Division, U.S. Environmental Protection Agency, Ariel Rios Building, 1200 Pennsylvania Avenue, NW., Washington, DC 20460.

(b) *Criteria for an R&D exemption.* For an R&D exemption to be granted, the person requesting an exemption must:

(1) Demonstrate a purpose that constitutes an appropriate basis for exemption;

(2) Demonstrate that an exemption is necessary;

(3) Design an R&D program to be reasonable in scope; and

(4) Exercise a degree of control consistent with the purpose of the program and EPA’s monitoring requirements.

(c) *Information required to be submitted.* To demonstrate each of the elements in paragraphs (b)(1) through (4) of this section, the person requesting an exemption must include the following information in the written request required under paragraph (a) of this section:

(1) A concise statement of the purpose of the program demonstrating that the program has an appropriate R&D purpose.

(2) An explanation of why the stated purpose of the program cannot be achieved in a practicable manner without performing one or more of the prohibited acts under this subpart.

(3) To demonstrate the reasonableness of the scope of the program:

(i) An estimate of the program’s duration in time and, if appropriate, mileage;

(ii) An estimate of the maximum number of vehicles or engines involved in the program;

(iii) The manner in which the information on vehicles and engines used in the program will be recorded and made available to the Administrator upon request; and

(iv) The quantity of diesel fuel which does not comply with the requirements of §§ 80.520 through 80.525.

(4) With regard to control, a demonstration that the program affords EPA a monitoring capability, including:

(i) The site(s) of the program (including facility name, street address, city, county, state, and zip code);

(ii) The manner in which information on vehicles and engines used in the program will be recorded and made available to the Administrator upon request;

(iii) The manner in which information on the diesel fuel used in the program (including quantity, fuel properties, name, address, telephone number and contact person of the supplier, and the date received from the supplier), will be recorded and made available to the Administrator upon request;

(iv) The manner in which the party will ensure that the R&D fuel will be segregated from motor vehicle diesel fuel and fuel pumps will be labeled to ensure proper use of the R&D diesel fuel;

(v) The name, address, telephone number and title of the person(s) in the organization requesting an exemption from whom further information on the application may be obtained; and

(vi) The name, address, telephone number and title of the person(s) in the organization requesting an exemption who is responsible for recording and making available the information specified in this paragraph (c), and the location where such information will be maintained.

(d) *Additional requirements.* (1) The product transfer documents associated with R&D motor vehicle diesel fuel must comply with requirements of § 80.590(b)(5).

(2) The R&D diesel fuel must be designated by the refiner or supplier, as applicable, as R&D diesel fuel.

(3) The R&D diesel fuel must be kept segregated from non-exempt motor vehicle diesel fuel at all points in the distribution system.

(4) The R&D diesel fuel must not be sold, distributed, offered for sale or distribution, dispensed, supplied, offered for supply, transported to or from, or stored by a diesel fuel retail outlet, or by a wholesale purchaser-consumer facility, unless the wholesale purchaser-consumer facility is associated with the R&D program that uses the diesel fuel.

(5) At the completion of the program, any emission control systems or elements of design which are damaged or rendered inoperative shall be replaced on vehicles remaining in service, or the responsible person will be liable for a violation of the Clean Air Act Section 203(a)(3) unless sufficient evidence is supplied that the emission controls or elements of design were not damaged.

(e) *Mechanism for granting of an exemption.* A request for an R&D exemption will be deemed approved by the earlier of sixty (60) days from the date on which EPA receives the request for exemption, (provided that EPA has not notified the applicant of potential disapproval by that time), or the date on which the applicant receives a written approval letter from EPA.

(1) The volume of diesel fuel subject to the approval shall not exceed the estimated amount in paragraph (c)(3)(iv) of this section, unless EPA grants a greater amount in writing.

(2) Any exemption granted under this section will expire at the completion of the test program or three years from the date of approval, whichever occurs first, and may only be extended upon re-application consistent with all requirements of this section.

(3) The passage of sixty (60) days will not signify the acceptance by EPA of the validity of the information in the request for an exemption. EPA may elect at any time to review the information contained in the request, and where appropriate may notify the responsible person of disapproval of the exemption.

(4) In granting an exemption the Administrator may include terms and conditions, including replacement of emission control devices or elements of design, that the Administrator determines are necessary for monitoring the exemption and for assuring that the purposes of this subpart are met.

(5) Any violation of a term or condition of the exemption, or of any requirement of this section, will cause the exemption to be void ab initio.

(6) If any information required under paragraph (c) of this section should change after approval of the exemption, the responsible person must notify EPA in writing immediately. Failure to do so may result in disapproval of the exemption or may make it void ab initio, and may make the party liable for a violation of this subpart.

(f) *Effects of exemption.* Motor vehicle diesel fuel that is subject to an R&D exemption under this section is exempt from other provisions of this subpart provided that the fuel is used in a manner that complies with the purpose of the program under paragraph (c) of