

# MEMORANDUM

**To: All MODA Members**  
**From: Jamie Py – Document below provided to MODA by PMAA**  
**Date: Feb 16, 2005**

**Subject: Overview of Federal Diesel Sulfur Rule Implementation.**

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## INTRODUCTION

EPA issued its diesel sulfur rule affecting highway fuel in early 2001. Just last year, EPA finalized the diesel sulfur rule for non-road fuel. Preparing for these rules is well under way upstream; now is the time for petroleum marketers and convenience store/gas station retailers to begin their planning. This document summarizes key provisions of the highway and non-road rules affecting the jobber and retail segments of the petroleum industry. It is intended to provide a broad overview of the rules for planning purposes. As we approach the implementation dates and EPA provides additional guidance, more detailed information will be provided.

EPA's highway rule involves a phase-in of ultra low sulfur diesel (ULSD) by requiring that, beginning in 2006, 80 percent of highway fuel produced be 15-ppm sulfur; twenty percent will be at the current 500-ppm standard. In 2010, all highway diesel will be 15-ppm. The non-road rule utilizes a "two step" approach, phasing non-road fuel to 500 ppm initially, then to 15-ppm in 2010 in conjunction with the highway diesel requirements.

Compliance with this rule downstream is further complicated by the fact that the rules contain some "hardship provisions" that will allow a few very small refiners to continue producing off-spec diesel for several years, particularly non-road fuel. At this time, it is unclear how many small refiners will be taking advantage of those provisions. As that becomes more clear in the coming months, we will provide additional information on how those provisions will affect petroleum marketers and retailers. It is expected that areas of the country (mostly in the western U.S.) that were part of EPA's geographic phase in for gasoline sulfur may take advantage of the hardship provisions and produce off-spec diesel for the next few years.

EPA's rules, particularly the non-road rule, have a built in transition period where off-spec fuel will be diverted to heating oil, locomotive and marine uses. EPA is allowing this to provide an outlet for refineries' off-spec or contaminated product that will not meet the new strict standards. We recognize that these flexibilities tend to confuse downstream parties who believe their responsibility is to comply with the new standards (15-ppm or 500-ppm). However, the non-road rule states that due to flexibilities, including credit provisions, small refinery provisions, and downstream off-spec fuel provisions: "...during the transition years, we are not able to simply enforce the sulfur standards downstream based on a single sulfur level of the new standard... As

these transition flexibilities expire, however, we are able to streamline our downstream enforcement provisions."

There are a number of issues related to these changes that PMAA will be working on over the next year. Contamination is one of those issues, particularly with respect to truck transportation. A limited amount of testing of tank trucks has been conducted with mixed results, revealing that there is a great potential for contamination of ULSD in transport trucks. Hopefully over the next year, PMAA can work with other industry groups to develop some recommendations on how marketers can avoid contamination problems. Another area of concern relates to liability issues. With so much potential up and down the distribution system for contamination, and with EPA's approach of holding all parties in the distribution responsible for violations, a quality assurance program is a marketer's defense with respect to possible violations. A key element in the quality assurance program is diesel sampling and testing. There has been much discussion about potential new diesel testing procedures that could make a quality assurance program more effective and easier to implement. As we approach implementation dates, PMAA will have some recommendations to make on developing an effective quality assurance program.

### **DIESEL SULFUR TIMELINE**

There are numerous important dates and deadlines incorporated in the highway and non-road rules.

**NRLM**- Non-road Locomotive Marine  
**NR** – Non-road  
**LM** – Locomotive Marine  
\*\*\* Wholesale/Retail Compliance Date\*\*\*

- **June 1, 2006** - 80 percent of the highway diesel **produced by refineries** will be required to be 15-ppm sulfur highway diesel (ULSD); the remaining 20 percent will be 500-ppm. Pump labeling requirements begin.
- **\*\*\*September 1, 2006\*\*\*** - **Retailers and wholesale purchaser-consumers** are brought into the program. Those carrying 15-ppm diesel will have to have completely turned over their diesel inventory by that date to avoid potential contamination.
- **June 1, 2007** - **Refiners** will be required to produce NRLM diesel fuel with a maximum sulfur content of 500-ppm. All NRLM must be designated or classified and must comply with the designation on the Product Transfer Document or pump label. Any diesel with a sulfur content greater than 500-ppm must be designated and sold as heating oil.
- **June 1, 2010** –
  1. All highway diesel and **most** non-road diesels produced by **refineries** will be 15 ppm. All NRLM produced by refineries must meet at least a 500- ppm standard.
  2. All 500 ppm LM diesel and all 500-ppm NR diesel must be designated at the refinery or importer and tracked through the distribution system to the terminal. A "marker" must be added to heating oil distributed from all terminals located outside of the Northeast/Mid-Atlantic area and Alaska (see "Heating Oil Marker" for a list of excluded areas).
- **\*\*\*October 1, 2010\*\*\*** – Any **wholesale purchaser-consumer facilities, bulk plants and any retail stations** carrying NRLM diesel fuel must meet the 500 ppm standard.

High sulfur diesel (greater than 500-ppm) may no longer exist anywhere in the fuel distribution system on this date.

- **December 1, 2010** – All highway diesel in end user tanks storing highway diesel must meet 15-ppm standard.
- **June 1, 2012** – Most LM fuel will meet 15-ppm standard; but limited production of 500-ppm LM may continue beyond 2014.
- **\*\*\*October 1, 2014\*\*\*** - Any **wholesale purchaser-consumer facilities, bulk plants and any retail stations** carrying NR diesel fuel must meet the 15-ppm standard. NR 500-ppm diesel may no longer exist anywhere in the fuel distribution system on this date.
- **December 1, 2014** – All NR diesel fuel, including fuel in end-user tanks, must comply with the 15-ppm sulfur standard.

### **ENGINE COMPLIANCE DATES**

- **Automobile:** Model Year 2007 diesel engines must have new emissions control equipment requiring the use of 15-ppm diesel.
- **Non-road:** Model Year 2011 diesel engines must have new emissions control equipment requiring the use of 15-ppm diesel.

### **HEATING OIL**

EPA's rule does not regulate the production of heating oil, except to require a chemical marker to be added at the terminal to fuel distributed outside of the Northeastern-Mid-Atlantic U.S. (most areas of PADD 1), to insure that heating oil is not diverted into the off-road market. The following areas are **excluded** from the marker requirement: North Carolina, Virginia, Maryland, Delaware, New Jersey, Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, Maine, Washington, D.C., New York (except for counties Chautauqua, Cattaraugus and Allegany), Pennsylvania (except counties of Erie, Warren, McKean, Potter, Cameron, Elk, Jefferson, Clarion, Forest, Venango, Mercer, Crawford, Lawrence, Beaver, Washington and Greene), and the eight eastern-most counties in West Virginia (namely Jefferson, Berkeley, Morgan, Hampshire, Mineral, Hardy, Grant and Pendleton).

### **DOWNGRADING PROVISIONS**

Many retailers and wholesalers will be facing decisions about whether to carry either 15-ppm highway diesel or 500-ppm highway diesel or both. It is important to note that 2007 model year vehicles will have new low emission engines that require the use of 15-ppm diesel; additionally EPA expressly prohibits use of any diesel other than 15-ppm in the 2007 vehicles. It is also important to note that 15-ppm fuel can be used in **any** diesel vehicle, including older models. Therefore, retailers will have to consider these factors carefully when deciding whether to carry 15 or 500-ppm diesel fuel.

While limits are placed upstream with respect to downgrading fuel, there is a little more flexibility at the retail level. Only the party who has custody or title to the motor vehicle diesel fuel may downgrade it. Retailers and wholesale purchaser-consumers who sell both 15-ppm and 500-ppm diesel may downgrade the 15-ppm to 500-ppm as necessary. **However, retailer and wholesale purchaser-consumers who sell only 500-ppm may only downgrade 20 percent of their product annually.** If any product is downgraded, the PTD must reflect that the change has been

made. Downgrading provisions do not apply to parties who sell only 15-ppm. The downgrading provisions are in effect through May 31, 2010.

Records will be required to be maintained to assure that the volume balance is achieved. EPA has stated they will provide clear and comprehensive guidance on those requirements in the future.

Because product will be dyed, taxed and/or marked at the terminal, it is not expected that marketers downstream of the terminal will shift product from the highway pool to the off-road pool and vice versa.

### **PRODUCT TRANSFER DOCUMENTS (PTDs)**

Product transfer documents are required each time fuel is transferred throughout the distribution chain, except for when fuel is dispensed into motor vehicles at a retail location or wholesale purchaser-consumer facility. PTDs must provide specific information including:

- The name and address of the transferor and transferee;
- The volume of the diesel being transferred;
- The designation of the fuel (i.e. for use in motor vehicles; nonroad equipment; locomotive, marine equipment; as appropriate);
- The sulfur content of the fuel.

Note that while product codes are allowed on PTDs upstream, codes are not allowed on PTDs that accompany transfers of product to truck carriers, retailers and wholesale purchaser-consumers. Additionally, the PTD language may include identification of dyed, tax-exempt highway diesel fuel.

### **RECORD RETENTION**

PTDs must be retained for five years. Additionally any other records must be retained for five years, including the following: records of any test results performed for quality assurance or other purposes; supporting documentation related to the tests such as date of sampling and testing, batch number, tank number and volume of product. Also business records regarding actions taken in response to any violations discovered are required to be maintained for five years.

### **ADDITION OF USED MOTOR OIL TO DIESEL FUEL BANNED**

The diesel sulfur rule bans the practice on introducing used motor oil into ULSD, whether through the practice of blending it into the vehicle fuel tank or the fuel storage tank.

### **USE OF KEROSENE IN DIESEL FUEL**

Blending kerosene with diesel fuel is a common practice during winter. This practice is not prohibited by the rule, however, kerosene used for blending with 15-ppm highway diesel must meet the 15-ppm standard, as well as standards for aromatics and cetane. Kerosene blending with the 15-ppm diesel must be accompanied by product transfer documents (PTD) that indicate that the product meets the 15-ppm standard.

Normally, EPA views parties who engage in blending the same way they view refiners, and subjects them to the same requirements that refiners are subjected to. However, in deference to the long-standing downstream practice of blending kerosene with diesel fuel, EPA has made an exception. Downstream parties who blend kerosene into 15-ppm diesel are not subject to the

refiner requirements provided they do not alter the fuel in any other way. Downstream parties who engage in this blending must have either a PTD or test results for the kerosene which establishes compliance. Additionally, parties who blend kerosene into 15-ppm highway diesel will be entitled to the 2-ppm adjustment factor for both the kerosene and the diesel fuel, provided that the kerosene has been transferred to the party with a PTD indicating compliance with the 15-ppm standard. Sulfur test results from downstream locations of parties who do not have a PTD for their kerosene will not be subject to this adjustment factor, either for the kerosene or the diesel into which it is blended.

### **USE OF DIESEL FUEL ADDITIVES**

Diesel fuel additives may be blended with diesel fuel. The rule requires that additive be accompanied by PTDs which state the sulfur content of the additive. Additives that exceed 15-ppm are limited by the rule as far as their use for blending with 15-ppm highway diesel and may be used in concentrations no greater than "one volume percent." PTDs accompanying higher sulfur additives must contain specific information that includes the maximum sulfur concentration of the additive, the maximum recommended concentration for use of the additive in diesel fuel and the concentration to the sulfur level that would result if the additive is used at the maximum concentration.

### **PUMP LABELING REQUIREMENTS**

Following are pump labeling requirements that are effective in the first years of the program. The labels will change as the fuel specifications change through 2014. Since there is a possibility that EPA could revise label wording in later years, for now we are providing the first stage of labeling requirements. We will provide updates as label specifications change.

Labels should be posted in a conspicuous place on the dispenser, with legible block letters in a color that contrasts with the background color. Also, EPA recommends a 36-point bold font.

- **HIGHWAY FUEL PUMP LABELS**

For pumps dispensing 15-ppm highway diesel, the following label is required from June 1, 2006-May 31, 2010:

**ULTRA LOW SULFUR DIESEL FUEL (15-ppm Sulfur Maximum)**

*Required* for use in all model year 2007 and later highway diesel vehicles and engines.

Recommended for use in all diesel vehicles and engines.

For pumps dispensing 500-ppm diesel highway fuel, beginning June 1, 2006, labels should read as follows:

**LOW-SULFUR HIGHWAY DIESEL FUEL  
(500-ppm Sulfur Maximum)  
WARNING**

Federal law *prohibits* use in model year 2007 and later vehicles and engines. Its use may damage these vehicles and engines.

This label may no longer be posted after September 30, 2010, as dispensing 500-ppm diesel will be prohibited at that time.

- **OFF-ROAD PUMP LABELS**

The label on pumps dispensing off-road diesel fuel that does not meet motor vehicle fuel standards is required **from June 1, 2006 until May 31, 2007** and should read as follows:

**NON-HIGHWAY DIESEL FUEL (May exceed 500-ppm Sulfur)  
WARNING**

Federal Law prohibits use in any highway vehicle or engine.

Its use may damage these vehicles and engines.

**The following off-road pump labeling requirements are effective beginning June 1, 2007:**

For pumps dispensing NRLM Diesel Fuel subject to 500-ppm standard:

**LOW-SULFUR NON-HIGHWAY DIESEL FUEL (500-ppm Sulfur Maximum)  
WARNING**

Federal law *prohibits* use in any highway vehicle or engine.

For pumps dispensing 15 ppm sulfur diesel for use in NRLM engines:

**ULTRA-LOW SULFUR NON-HIGHWAY DIESEL FUEL (15-ppm Sulfur  
Maximum)**

*Required* for use in all model year 2011 and newer non-road diesel engines.

Recommended for use in all nonroad, locomotive and marine diesel engines.

**WARNING**

Federal Law *prohibits* use in any highway vehicle or engine.

For pumps dispensing diesel fuel having a sulfur content greater than 500-ppm (for use in older non-road, locomotive and marine diesel engines), the following label is required:

**HIGH-SULFUR NON-HIGHWAY DIESEL FUEL (May exceed 500 ppm Sulfur)  
WARNING**

Federal law *prohibits* use in highway vehicles or engines.

May damage non-road, diesel engines required to use low-sulfur or ultra-low sulfur diesel fuel.

- **HEATING OIL PUMP LABELS**

Beginning June 1, 2007, the following label is required on heating oil pumps:

**HEATING OIL (May Exceed 500-ppm Sulfur)  
WARNING**

Federal law *prohibits* use in highway vehicles or engines, or in nonroad, locomotive or marine engines. Its use may damage these diesel engines.