

## BACKGROUND

### U.S. EPA Engine Emissions Standards: *A Main driver for Oil Quality Changes*

Federal Smoke Opacity Standards			
Year	Acceleration	Lugging	Peak
All	20 Percent	15 Percent	50 Percent

EPA Off-Road Standards					
Output (HP)	HC	CO	NOX	PM	Date
>175 to <750	1.0	8.5	6.9	0.4	1996
>100 to <175	--	--	6.9	--	1997
>50 to <100	--	--	6.9	--	1998
>750	1.0	8.5	6.9	0.40	2000

**Note:** *The emission limits shown here are condensed and summarized for easier presentation. A significantly more detailed description of HD Diesel emission limits can be found at:*

<http://www.dieselnet.com/standards/us/hd.html>