

US EPA ARCHIVE DOCUMENT

H-258
TABLE 7.1.1
NONTAMPERED EXHAUST EMISSION RATES FOR
LOW ALTITUDE
HEAVY DUTY DIESEL POWERED VEHICLES
* BER = ZML + (DR * M)

Pol	Model Years	Zero Mile Emission Level	Deterioration Rate	50,000 Mile Emission Level	100,000 Mile Emission Level
HC	Pre-1967	3.540	0.060	3.840	4.140
	1967-1968	3.660	0.060	3.960	4.260
	1969	3.780	0.060	4.080	4.380
	1970	3.810	0.060	4.110	4.410
	1971-1973	3.910	0.060	4.210	4.510
	1974-1976	3.910	0.060	4.210	4.510
	1977	3.990	0.060	4.290	4.590
	1978	3.920	0.060	4.220	4.520
	1979	3.510	0.000	3.510	3.510
	1980-1981	3.170	0.000	3.170	3.170
	1982	2.780	0.000	2.780	2.780
	1983	2.660	0.000	2.660	2.660
	1984	2.820	0.000	2.820	2.820
	1985	2.590	0.000	2.590	2.590
	1986	2.280	0.000	2.280	2.280
	1987	2.230	0.000	2.230	2.230
	1988-1989	2.180	0.000	2.180	2.180
	1990	2.130	0.000	2.130	2.130
	1991-1997	2.100	0.000	2.100	2.100
	1998-2000	2.100	0.000	2.100	2.100
	2001+	2.100	0.000	2.100	2.100
CO	Pre-1967	10.320	0.140	11.020	11.720
	1967-1968	10.690	0.150	11.440	12.190
	1969	11.040	0.150	11.790	12.540
	1970	11.130	0.150	11.880	12.630
	1971-1973	11.420	0.160	12.220	13.020
	1974-1976	11.420	0.160	12.220	13.020
	1977	11.650	0.160	12.450	13.250
	1978	11.440	0.160	12.240	13.040
	1979	14.040	0.120	14.640	15.240
	1980-1981	12.670	0.110	13.220	13.770
	1982	11.120	0.100	11.620	12.120
	1983	10.660	0.090	11.110	11.560
	1984	11.260	0.100	11.760	12.260
	1985	10.350	0.090	10.800	11.250
	1986	10.360	0.090	10.810	11.260
	1987	10.140	0.090	10.590	11.040
	1988-1989	9.900	0.080	10.300	10.700
	1990	9.670	0.080	10.070	10.470
	1991-1997	9.540	0.080	9.940	10.340
	1998-2000	9.530	0.080	9.930	10.330
	2001+	9.520	0.080	9.920	10.320
NOx	Pre-1967	22.990	0.170	23.840	24.690
	1967-1968	23.830	0.180	24.730	25.630
	1969	24.590	0.180	25.490	26.390
	1970	24.800	0.190	25.750	26.700
	1971-1973	25.460	0.190	26.410	27.360
	1974-1976	25.440	0.190	26.390	27.340
	1977	25.970	0.190	26.920	27.870
	1978	25.500	0.190	26.450	27.400
	1979	23.780	0.000	23.780	23.780
	1980-1981	21.470	0.000	21.470	21.470
	1982	18.840	0.000	18.840	18.840
	1983	18.060	0.000	18.060	18.060
	1984	19.080	0.000	19.080	19.080
	1985	17.530	0.000	17.530	17.530
	1986	17.560	0.000	17.560	17.560
	1987	17.180	0.000	17.180	17.180
	1988-1989	16.770	0.000	16.770	16.770
	1990	9.870	0.000	9.870	9.870
	1991-1997	8.130	0.000	8.130	8.130
	1998-2000	6.490	0.000	6.490	6.490
	2001+	6.490	0.000	6.490	6.490

* WHERE : BER = Nontampered basic exhaust emission rates in grams/mile,
ZML = Zero mile level in grams/mile,
DR = Deterioration rate in grams/mile/10K miles,
M = Cumulative mileage / 10,000 miles.

DATE : JUNE 30, 1995

H-259
TABLE 7.1.2
NONTAMPERED EXHAUST EMISSION RATES FOR
HIGH ALTITUDE
HEAVY DUTY DIESEL POWERED VEHICLES
* BER = ZML + (DR * M)

Pol	Model Years	Zero Mile Emission Level	Deterioration Rate	50,000 Mile Emission Level	100,000 Mile Emission Level
HC	Pre-1967	8.130	0.060	8.430	8.730
	1967-1968	8.430	0.060	8.730	9.030
	1969	8.700	0.060	9.000	9.300
	1970	8.770	0.060	9.070	9.370
	1971-1973	9.010	0.060	9.310	9.610
	1974-1976	9.000	0.060	9.300	9.600
	1977	9.190	0.060	9.490	9.790
	1978	9.020	0.060	9.320	9.620
	1979	8.070	0.000	8.070	8.070
	1980-1981	7.280	0.000	7.280	7.280
	1982	6.370	0.000	6.370	6.370
	1983	6.130	0.000	6.130	6.130
	1984	6.470	0.000	6.470	6.470
	1985	5.950	0.000	5.950	5.950
	1986	5.250	0.000	5.250	5.250
	1987	5.140	0.000	5.140	5.140
	1988-1989	5.010	0.000	5.010	5.010
	1990	4.900	0.000	4.900	4.900
	1991-1997	4.830	0.000	4.830	4.830
	1998-2000	4.820	0.000	4.820	4.820
	2001+	4.820	0.000	4.820	4.820
CO	Pre-1967	18.050	0.140	18.750	19.450
	1967-1968	18.710	0.150	19.460	20.210
	1969	19.300	0.150	20.050	20.800
	1970	19.470	0.150	20.220	20.970
	1971-1973	19.990	0.160	20.790	21.590
	1974-1976	19.970	0.160	20.770	21.570
	1977	20.380	0.160	21.180	21.980
	1978	20.010	0.160	20.810	21.610
	1979	24.560	0.120	25.160	25.760
	1980-1981	22.170	0.110	22.720	23.270
	1982	19.390	0.090	19.840	20.290
	1983	18.650	0.090	19.100	19.550
	1984	19.710	0.100	20.210	20.710
	1985	18.110	0.090	18.560	19.010
	1986	18.130	0.090	18.580	19.030
	1987	17.750	0.090	18.200	18.650
	1988-1989	17.320	0.080	17.720	18.120
	1990	16.920	0.080	17.320	17.720
	1991-1997	16.690	0.080	17.090	17.490
	1998-2000	16.670	0.080	17.070	17.470
	2001+	16.660	0.080	17.060	17.460
NOx	Pre-1967	22.990	0.170	23.840	24.690
	1967-1968	23.830	0.180	24.730	25.630
	1969	24.590	0.180	25.490	26.390
	1970	24.800	0.190	25.750	26.700
	1971-1973	25.460	0.190	26.410	27.360
	1974-1976	25.440	0.190	26.390	27.340
	1977	25.970	0.190	26.920	27.870
	1978	25.500	0.190	26.450	27.400
	1979	23.780	0.000	23.780	23.780
	1980-1981	21.470	0.000	21.470	21.470
	1982	18.770	0.000	18.770	18.770
	1983	18.060	0.000	18.060	18.060
	1984	19.080	0.000	19.080	19.080
	1985	17.530	0.000	17.530	17.530
	1986	17.560	0.000	17.560	17.560
	1987	17.180	0.000	17.180	17.180
	1988-1989	16.770	0.000	16.770	16.770
	1990	9.870	0.000	9.870	9.870
	1991-1997	8.130	0.000	8.130	8.130
	1998-2000	6.490	0.000	6.490	6.490
	2001+	6.490	0.000	6.490	6.490

* WHERE : BER = Nontampered basic exhaust emission rates in grams/mile,
ZML = Zero mile level in grams/mile,
DR = Deterioration rate in grams/mile/10K miles,
M = Cumulative mileage / 10,000 miles.

DATE : JUNE 30, 1995

TABLE 7.4

REGISTRATION MIX AND
MILEAGE ACCUMULATION RATES FOR
HEAVY DUTY DIESEL POWERED VEHICLES

Model Year Index**	July 1 Registration Mix*	Mileage Accumulation Rate (per vehicle*)	Jan 1 Registration Mix	Jan 1 Mileage Accumulation Rate*** (fleet)	Jan 1 Mileage Accumulation (fleet)
1	0.034	0.	0.000	0.	0.
2	0.067	0.	0.069	35129.	17565.
3	0.067	0.	0.069	32846.	51552.
4	0.067	0.	0.069	30738.	83344.
5	0.067	0.	0.069	28792.	113109.
6	0.073	0.	0.075	26991.	141001.
7	0.061	0.	0.063	25325.	167159.
8	0.040	0.	0.041	23781.	191712.
9	0.041	0.	0.042	22348.	214776.
10	0.051	0.	0.053	21018.	236459.
11	0.053	0.	0.055	19781.	256858.
12	0.066	0.	0.068	18630.	276064.
13	0.055	0.	0.057	17558.	294159.
14	0.057	0.	0.059	16559.	311217.
15	0.045	0.	0.046	15627.	327311.
16	0.019	0.	0.020	14756.	342502.
17	0.023	0.	0.024	13942.	356851.
18	0.028	0.	0.029	13181.	370413.
19	0.024	0.	0.025	12468.	383237.
20	0.016	0.	0.017	11799.	395370.
21	0.011	0.	0.011	11173.	406856.
22	0.009	0.	0.009	10584.	417735.
23	0.007	0.	0.007	10031.	428042.
24	0.005	0.	0.005	9512.	437814.
25+	0.016	0.	0.017	9023.	447082.

* Default information that may be altered by the MOBILE5a user with information about the local area.
This mileage distribution is applicable to calendar year 1995 only.

** The indices refer to the most recent model year vehicles in any given calendar year. Index 1 references the newest model year vehicles and index 25+ references the oldest model year vehicles.

*** Sales weighted fleet mileage accumulation adjusted to January 1,
where: $JMAR(1) = 0$ and,
 $JMAR(MYI) = MAR(MYI-1)$, $MYI = 2, \dots, 25+$.

DATE : JUNE 30, 1995

TABLE 7.5

EXAMPLE TRAVEL WEIGHTING FRACTION CALCULATION FOR
HEAVY DUTY DIESEL POWERED VEHICLES
JANUARY 1, 1995

Model Years	(A) HDDV Fleet Registration	(B) Sales Fraction	(C=A*B/DAF) HDDV Registration	(D) Annual Mileage Accrual Rate	(C*D/TFNORM) Travel (C*D) Fractions
1995	0.000	1.000	0.000	0.000	0.000
1994	0.067	1.000	0.067	0.069	0.108
1993	0.067	1.000	0.067	0.069	0.101
1992	0.067	1.000	0.067	0.069	0.094
1991	0.067	1.000	0.067	0.069	0.088
1990	0.073	1.000	0.073	0.075	0.090
1989	0.061	1.000	0.061	0.063	0.071
1988	0.040	1.000	0.040	0.041	0.044
1987	0.041	1.000	0.041	0.042	0.042
1986	0.051	1.000	0.051	0.053	0.049
1985	0.053	1.000	0.053	0.055	0.048
1984	0.066	1.000	0.066	0.068	0.056
1983	0.055	1.000	0.055	0.057	0.044
1982	0.057	1.000	0.057	0.059	0.043
1981	0.045	1.000	0.045	0.046	0.032
1980	0.019	1.000	0.019	0.020	0.013
1979	0.023	1.000	0.023	0.024	0.015
1978	0.028	1.000	0.028	0.029	0.017
1977	0.024	1.000	0.024	0.025	0.014
1976	0.016	1.000	0.016	0.017	0.009
1975	0.011	1.000	0.011	0.011	0.006
1974	0.009	1.000	0.009	0.009	0.004
1973	0.007	1.000	0.007	0.007	0.003
1972	0.005	1.000	0.005	0.005	0.002
1971-	0.016	1.000	0.016	0.017	0.007

DAF: 0.968

TFNORM: 22548.2

WHERE :

- A = July 1 registration mix from Table 1.7.4,
- B = Diesel fleet sales fractions,
- D = Sales weighted fleet mileage accumulation rate from Table 1.7.4.

For the first model year (A*B) must be divided by 3 in order to properly adjust registration from July 1 to January 1.

DATE : JUNE 30, 1995

H-262

TABLE 7.6

SPEED CORRECTION FACTOR COEFFICIENTS FOR
HEAVY DUTY DIESEL POWERED VEHICLES

$$* \text{ SCF}(s) = \text{EXP}(A + B*s + C*s**2)$$

Pol	Model Years	Coefficients		
		A	B	C
HC	All	0.92400	-0.05500	0.00044
CO	All	1.39600	-0.08800	0.00091
NOx	All	0.67600	-0.04800	0.00071

* WHERE: s = average speed (mph).

DATE : JUNE 30, 1995

TABLE 7.10A.1

METHANE OFFSETS*
FOR LOW ALTITUDE
HEAVY DUTY DIESEL POWERED VEHICLES

Model Years	Methane Offsets (Grams/Mile)
Pre-1978	0.145
1978-1981	0.145
1982-1987	0.118
1988+	0.100

* Methane offsets are used to estimate
nonmethane hydrocarbon emissions (NMHC),
i.e., $NMHC = \text{Total HC} - \text{Methane Offset}$.

DATE : JUNE 30, 1995

H-264

TABLE 7.10A.2

METHANE OFFSETS*
FOR HIGH ALTITUDE
HEAVY DUTY DIESEL POWERED VEHICLES

Model Years	Methane Offsets (Grams/Mile)
Pre-1978	0.333
1978-1981	0.333
1982-1987	0.271
1988+	0.230

* Methane offsets are used to estimate
nonmethane hydrocarbon emissions (NMHC),
i.e., $\text{NMHC} = \text{Total HC} - \text{Methane Offset}$.

DATE : JUNE 30, 1995

H-265

TABLE 7.10B

CONVERSION FACTORS FOR
HEAVY DUTY DIESEL POWERED VEHICLES

Model Years	Conversion Factors*
Pre-1963	2.850
1963	2.858
1964	2.874
1965	2.890
1966	2.900
1967	2.964
1968	2.995
1969	3.074
1970	3.100
1971	3.161
1972	3.197
1973	3.188
1974	3.213
1975	3.146
1976	3.179
1977	3.246
1978	3.187
1979	2.999
1980	2.716
1981	2.698
1982	2.376
1983	2.277
1984	2.406
1985	2.211
1986	2.214
1987	2.167
1988	2.132
1989	2.099
1990	2.066
1991	2.050
1992	2.033
1993	2.033
1994	2.033
1995	2.039
1996	2.039
1997	2.037
1998+	2.036

* Convert from grams/brake-horsepower/hour
to grams/mile units.

DATE : JUNE 30, 1995 (Corrected 3/6/98)

H-266

TABLE 7.11A.1
BY-MODEL-YEAR EMISSION LEVELS FOR LOW ALTITUDE
HEAVY DUTY DIESEL POWERED VEHICLES
TOTAL NONMETHANE HC

DATE : JUNE 30, 1995

1985		1986		1987		1988		1989		January 1 of Calendar Year 1990		1991		1992		1993		1994		1995		1996	
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**
1961	7.1	1962	7.0	1963	6.9	1964	6.8	1965	6.7	1966	6.6	1967	6.7	1968	6.6	1969	6.7	1970	6.7	1971	6.7	1972	6.7
1962	7.0	1963	6.9	1964	6.8	1965	6.7	1966	6.7	1967	6.7	1968	6.6	1969	6.7	1970	6.6	1971	6.7	1972	6.6	1973	6.6
1963	6.9	1964	6.9	1965	6.8	1966	6.7	1967	6.7	1968	6.6	1969	6.7	1970	6.6	1971	6.7	1972	6.6	1973	6.6	1974	6.5
1964	6.9	1965	6.8	1966	6.7	1967	6.7	1968	6.6	1969	6.7	1970	6.6	1971	6.7	1972	6.6	1973	6.6	1974	6.5	1975	6.5
1965	6.8	1966	6.7	1967	6.7	1968	6.6	1969	6.7	1970	6.6	1971	6.7	1972	6.6	1973	6.5	1974	6.5	1975	6.4	1976	6.4
1966	6.7	1967	6.7	1968	6.6	1969	6.7	1970	6.6	1971	6.6	1972	6.6	1973	6.5	1974	6.5	1975	6.4	1976	6.4	1977	6.4
1967	6.7	1968	6.6	1969	6.6	1970	6.6	1971	6.6	1972	6.6	1973	6.5	1974	6.4	1975	6.4	1976	6.3	1977	6.4	1978	6.3
1968	6.6	1969	6.6	1970	6.6	1971	6.6	1972	6.5	1973	6.5	1974	6.4	1975	6.3	1976	6.3	1977	6.3	1978	6.2	1979	3.4
1969	6.6	1970	6.5	1971	6.6	1972	6.5	1973	6.4	1974	6.4	1975	6.3	1976	6.2	1977	6.3	1978	6.2	1979	3.4	1980	3.1
1970	6.5	1971	6.5	1972	6.4	1973	6.4	1974	6.3	1975	6.3	1976	6.2	1977	6.2	1978	6.1	1979	3.4	1980	3.1	1981	3.1
1971	6.5	1972	6.4	1973	6.3	1974	6.3	1975	6.2	1976	6.1	1977	6.2	1978	6.1	1979	3.4	1980	3.1	1981	3.1	1982	2.7
1972	6.3	1973	6.3	1974	6.2	1975	6.1	1976	6.1	1977	6.1	1978	6.0	1979	3.4	1980	3.1	1981	3.1	1982	2.7	1983	2.6
1973	6.2	1974	6.1	1975	6.1	1976	6.0	1977	6.0	1978	5.9	1979	3.4	1980	3.1	1981	3.1	1982	2.7	1983	2.6	1984	2.7
1974	6.0	1975	6.0	1976	5.9	1977	6.0	1978	5.8	1979	3.4	1980	3.1	1981	3.1	1982	2.7	1983	2.6	1984	2.7	1985	2.5
1975	5.9	1976	5.8	1977	5.9	1978	5.7	1979	3.4	1980	3.1	1981	3.1	1982	2.7	1983	2.6	1984	2.7	1985	2.5	1986	2.2
1976	5.7	1977	5.7	1978	5.6	1979	3.4	1980	3.1	1981	3.1	1982	2.7	1983	2.6	1984	2.7	1985	2.5	1986	2.2	1987	2.1
1977	5.6	1978	5.5	1979	3.4	1980	3.1	1981	3.1	1982	2.7	1983	2.6	1984	2.7	1985	2.5	1986	2.2	1987	2.1	1988	2.1
1978	5.3	1979	3.4	1980	3.1	1981	3.1	1982	2.7	1983	2.6	1984	2.7	1985	2.5	1986	2.2	1987	2.1	1988	2.1	1989	2.1
1979	3.4	1980	3.1	1981	3.1	1982	2.7	1983	2.6	1984	2.7	1985	2.5	1986	2.2	1987	2.1	1988	2.1	1989	2.1	1990	2.1
1980	3.1	1981	3.1	1982	2.7	1983	2.6	1984	2.7	1985	2.5	1986	2.2	1987	2.1	1988	2.1	1989	2.1	1990	2.1	1991	2.0
1981	3.1	1982	2.7	1983	2.6	1984	2.7	1985	2.5	1986	2.2	1987	2.1	1988	2.1	1989	2.1	1990	2.1	1991	2.0	1992	2.0
1982	2.7	1983	2.6	1984	2.7	1985	2.5	1986	2.2	1987	2.1	1988	2.1	1989	2.1	1990	2.1	1991	2.0	1992	2.0	1993	2.0
1983	2.6	1984	2.7	1985	2.5	1986	2.2	1987	2.1	1988	2.1	1989	2.1	1990	2.1	1991	2.0	1992	2.0	1993	2.0	1994	2.0
1984	2.7	1985	2.5	1986	2.2	1987	2.1	1988	2.1	1989	2.1	1990	2.1	1991	2.0	1992	2.0	1993	2.0	1994	2.0	1995	2.0
1985	0.0	1986	0.0	1987	0.0	1988	0.0	1989	0.0	1990	0.0	1991	0.0	1992	0.0	1993	0.0	1994	0.0	1995	0.0	1996	0.0

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:
19.6 MPH, TEMP=75 Degrees F.
Emissions are based on the January 1 mileage accumulation figures given in Table 1.4.7

Continued on the next page.

H-267

TABLE 7.11A.1 (continued)
 BY-MODEL-YEAR EMISSION LEVELS FOR LOW ALTITUDE
 HEAVY DUTY DIESEL POWERED VEHICLES
 TOTAL NONMETHANE HC

1997		1998		1999		2000		2003		January 1 of Calendar Year 2005		2008		2010		2012		2015		2018		2020	
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**
1973	6.6	1974	6.6	1975	6.6	1976	6.5	1979	3.4	1981	3.1	1984	2.7	1986	2.2	1988	2.1	1991	2.0	1994	2.0	1996	2.0
1974	6.6	1975	6.5	1976	6.5	1977	6.6	1980	3.1	1982	2.7	1985	2.5	1987	2.1	1989	2.1	1992	2.0	1995	2.0	1997	2.0
1975	6.5	1976	6.5	1977	6.5	1978	6.4	1981	3.1	1983	2.6	1986	2.2	1988	2.1	1990	2.1	1993	2.0	1996	2.0	1998	2.0
1976	6.4	1977	6.5	1978	6.4	1979	3.4	1982	2.7	1984	2.7	1987	2.1	1989	2.1	1991	2.0	1994	2.0	1997	2.0	1999	2.0
1977	6.5	1978	6.4	1979	3.4	1980	3.1	1983	2.6	1985	2.5	1988	2.1	1990	2.1	1992	2.0	1995	2.0	1998	2.0	2000	2.0
1978	6.3	1979	3.4	1980	3.1	1981	3.1	1984	2.7	1986	2.2	1989	2.1	1991	2.0	1993	2.0	1996	2.0	1999	2.0	2001	2.0
1979	3.4	1980	3.1	1981	3.1	1982	2.7	1985	2.5	1987	2.1	1990	2.1	1992	2.0	1994	2.0	1997	2.0	2000	2.0	2002	2.0
1980	3.1	1981	3.1	1982	2.7	1983	2.6	1986	2.2	1988	2.1	1991	2.0	1993	2.0	1995	2.0	1998	2.0	2001	2.0	2003	2.0
1981	3.1	1982	2.7	1983	2.6	1984	2.7	1987	2.1	1989	2.1	1992	2.0	1994	2.0	1996	2.0	1999	2.0	2002	2.0	2004	2.0
1982	2.7	1983	2.6	1984	2.7	1985	2.5	1988	2.1	1990	2.1	1993	2.0	1995	2.0	1997	2.0	2000	2.0	2003	2.0	2005	2.0
1983	2.6	1984	2.7	1985	2.5	1986	2.2	1989	2.1	1991	2.0	1994	2.0	1996	2.0	1998	2.0	2001	2.0	2004	2.0	2006	2.0
1984	2.7	1985	2.5	1986	2.2	1987	2.1	1990	2.1	1992	2.0	1995	2.0	1997	2.0	1999	2.0	2002	2.0	2005	2.0	2007	2.0
1985	2.5	1986	2.2	1987	2.1	1988	2.1	1991	2.0	1993	2.0	1996	2.0	1998	2.0	2000	2.0	2003	2.0	2006	2.0	2008	2.0
1986	2.2	1987	2.1	1988	2.1	1989	2.1	1992	2.0	1994	2.0	1997	2.0	1999	2.0	2001	2.0	2004	2.0	2007	2.0	2009	2.0
1987	2.1	1988	2.1	1989	2.1	1990	2.1	1993	2.0	1995	2.0	1998	2.0	2000	2.0	2002	2.0	2005	2.0	2008	2.0	2010	2.0
1988	2.1	1989	2.1	1990	2.1	1991	2.0	1994	2.0	1996	2.0	1999	2.0	2001	2.0	2003	2.0	2006	2.0	2009	2.0	2011	2.0
1989	2.1	1990	2.1	1991	2.0	1992	2.0	1995	2.0	1997	2.0	2000	2.0	2002	2.0	2004	2.0	2007	2.0	2010	2.0	2012	2.0
1990	2.1	1991	2.0	1992	2.0	1993	2.0	1996	2.0	1998	2.0	2001	2.0	2003	2.0	2005	2.0	2008	2.0	2011	2.0	2013	2.0
1991	2.0	1992	2.0	1993	2.0	1994	2.0	1997	2.0	1999	2.0	2002	2.0	2004	2.0	2006	2.0	2009	2.0	2012	2.0	2014	2.0
1992	2.0	1993	2.0	1994	2.0	1995	2.0	1998	2.0	2000	2.0	2003	2.0	2005	2.0	2007	2.0	2010	2.0	2013	2.0	2015	2.0
1993	2.0	1994	2.0	1995	2.0	1996	2.0	1999	2.0	2001	2.0	2004	2.0	2006	2.0	2008	2.0	2011	2.0	2014	2.0	2016	2.0
1994	2.0	1995	2.0	1996	2.0	1997	2.0	2000	2.0	2002	2.0	2005	2.0	2007	2.0	2009	2.0	2012	2.0	2015	2.0	2017	2.0
1995	2.0	1996	2.0	1997	2.0	1998	2.0	2001	2.0	2003	2.0	2006	2.0	2008	2.0	2010	2.0	2013	2.0	2016	2.0	2018	2.0
1996	2.0	1997	2.0	1998	2.0	1999	2.0	2002	2.0	2004	2.0	2007	2.0	2009	2.0	2011	2.0	2014	2.0	2017	2.0	2019	2.0
1997	0.0	1998	0.0	1999	0.0	2000	0.0	2003	0.0	2005	0.0	2008	0.0	2010	0.0	2012	0.0	2015	0.0	2018	0.0	2020	0.0

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F.

Emissions are based on the January 1 mileage accumulation figures given in Table 1.4.7

H-268

TABLE 7.11B.1
BY-MODEL-YEAR EMISSION LEVELS FOR LOW ALTITUDE
HEAVY DUTY DIESEL POWERED VEHICLES
CO

DATE : JUNE 30, 1995

1985		1986		1987		1988		1989		January 1 of Calendar Year 1990		1991		1992		1993		1994		1995		1996	
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**
1961	19.1	1962	18.9	1963	18.7	1964	18.5	1965	18.2	1966	18.0	1967	18.8	1968	18.6	1969	18.8	1970	18.7	1971	19.4	1972	19.3
1962	18.9	1963	18.7	1964	18.5	1965	18.3	1966	18.1	1967	18.8	1968	18.6	1969	18.8	1970	18.7	1971	19.4	1972	19.2	1973	19.1
1963	18.7	1964	18.5	1965	18.3	1966	18.1	1967	18.8	1968	18.6	1969	18.8	1970	18.7	1971	19.3	1972	19.2	1973	19.1	1974	19.0
1964	18.5	1965	18.3	1966	18.1	1967	18.8	1968	18.6	1969	18.8	1970	18.7	1971	19.3	1972	19.1	1973	19.0	1974	18.9	1975	18.8
1965	18.3	1966	18.1	1967	18.8	1968	18.6	1969	18.8	1970	18.7	1971	19.3	1972	19.1	1973	18.9	1974	18.8	1975	18.7	1976	18.6
1966	18.1	1967	18.8	1968	18.6	1969	18.7	1970	18.6	1971	19.2	1972	19.0	1973	18.9	1974	18.7	1975	18.6	1976	18.5	1977	18.6
1967	18.7	1968	18.5	1969	18.7	1970	18.6	1971	19.2	1972	19.0	1973	18.8	1974	18.7	1975	18.5	1976	18.4	1977	18.5	1978	18.2
1968	18.5	1969	18.6	1970	18.5	1971	19.1	1972	18.9	1973	18.7	1974	18.6	1975	18.4	1976	18.3	1977	18.4	1978	18.1	1979	19.1
1969	18.5	1970	18.4	1971	19.0	1972	18.8	1973	18.6	1974	18.5	1975	18.3	1976	18.2	1977	18.3	1978	17.9	1979	19.0	1980	17.1
1970	18.3	1971	18.9	1972	18.7	1973	18.5	1974	18.4	1975	18.2	1976	18.0	1977	18.1	1978	17.8	1979	18.8	1980	17.0	1981	16.9
1971	18.7	1972	18.6	1973	18.4	1974	18.2	1975	18.0	1976	17.9	1977	18.0	1978	17.6	1979	18.7	1980	16.9	1981	16.8	1982	14.8
1972	18.4	1973	18.2	1974	18.0	1975	17.9	1976	17.7	1977	17.8	1978	17.5	1979	18.6	1980	16.7	1981	16.7	1982	14.7	1983	13.9
1973	18.0	1974	17.8	1975	17.7	1976	17.5	1977	17.6	1978	17.3	1979	18.4	1980	16.6	1981	16.5	1982	14.6	1983	13.7	1984	14.6
1974	17.6	1975	17.4	1976	17.3	1977	17.4	1978	17.0	1979	18.3	1980	16.5	1981	16.4	1982	14.4	1983	13.6	1984	14.5	1985	13.2
1975	17.2	1976	17.0	1977	17.1	1978	16.8	1979	18.1	1980	16.3	1981	16.2	1982	14.3	1983	13.5	1984	14.3	1985	13.1	1986	13.0
1976	16.7	1977	16.8	1978	16.5	1979	17.8	1980	16.1	1981	16.0	1982	14.1	1983	13.3	1984	14.1	1985	12.9	1986	12.9	1987	12.6
1977	16.5	1978	16.1	1979	17.6	1980	15.9	1981	15.8	1982	13.9	1983	13.1	1984	13.9	1985	12.7	1986	12.7	1987	12.4	1988	11.9
1978	15.8	1979	17.3	1980	15.6	1981	15.5	1982	13.7	1983	12.9	1984	13.7	1985	12.5	1986	12.5	1987	12.2	1988	11.8	1989	11.7
1979	17.0	1980	15.3	1981	15.2	1982	13.4	1983	12.7	1984	13.5	1985	12.3	1986	12.3	1987	12.0	1988	11.6	1989	11.5	1990	11.3
1980	15.0	1981	14.9	1982	13.1	1983	12.4	1984	13.2	1985	12.1	1986	12.0	1987	11.8	1988	11.4	1989	11.3	1990	11.1	1991	10.9
1981	14.6	1982	12.8	1983	12.2	1984	12.9	1985	11.8	1986	11.8	1987	11.5	1988	11.1	1989	11.1	1990	10.9	1991	10.7	1992	10.7
1982	12.4	1983	11.8	1984	12.5	1985	11.5	1986	11.5	1987	11.2	1988	10.9	1989	10.9	1990	10.6	1991	10.5	1992	10.5	1993	10.4
1983	11.5	1984	12.2	1985	11.1	1986	11.1	1987	10.9	1988	10.6	1989	10.6	1990	10.3	1991	10.2	1992	10.2	1993	10.2	1994	10.2
1984	11.7	1985	10.8	1986	10.8	1987	10.5	1988	10.3	1989	10.3	1990	10.0	1991	9.9	1992	9.9	1993	9.9	1994	9.9	1995	9.9
1985	0.0	1986	0.0	1987	0.0	1988	0.0	1989	0.0	1990	0.0	1991	0.0	1992	0.0	1993	0.0	1994	0.0	1995	0.0	1996	0.0

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:
19.6 MPH, TEMP=75 Degrees F.
Emissions are based on the January 1 mileage accumulation figures given in Table 1.4.7

Continued on the next page.

H-269

TABLE 7.11B.1 (continued)
 BY-MODEL-YEAR EMISSION LEVELS FOR LOW ALTITUDE
 HEAVY DUTY DIESEL POWERED VEHICLES
 CO

1997		1998		1999		2000		2003		January 1 of Calendar Year 2005		2008		2010		2012		2015		2018		2020	
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**
1973	19.2	1974	19.1	1975	19.0	1976	19.0	1979	19.8	1981	18.0	1984	16.1	1986	14.7	1988	13.8	1991	13.4	1994	13.4	1996	13.4
1974	19.0	1975	18.9	1976	18.9	1977	19.0	1980	17.9	1982	15.8	1985	14.6	1987	14.4	1989	13.7	1992	13.3	1995	13.3	1997	13.3
1975	18.9	1976	18.8	1977	18.9	1978	18.7	1981	17.7	1983	14.8	1986	14.5	1988	13.6	1990	13.4	1993	13.2	1996	13.2	1998	13.2
1976	18.7	1977	18.8	1978	18.6	1979	19.5	1982	15.6	1984	15.8	1987	14.2	1989	13.5	1991	13.2	1994	13.2	1997	13.2	1999	13.1
1977	18.7	1978	18.4	1979	19.4	1980	17.5	1983	14.6	1985	14.3	1988	13.4	1990	13.2	1992	13.1	1995	13.1	1998	13.1	2000	13.1
1978	18.3	1979	19.3	1980	17.4	1981	17.4	1984	15.5	1986	14.2	1989	13.3	1991	13.0	1993	13.0	1996	13.0	1999	13.0	2001	12.9
1979	19.2	1980	17.3	1981	17.3	1982	15.3	1985	14.1	1987	13.9	1990	13.0	1992	12.9	1994	12.9	1997	12.9	2000	12.9	2002	12.9
1980	17.2	1981	17.2	1982	15.2	1983	14.3	1986	14.0	1988	13.1	1991	12.8	1993	12.8	1995	12.8	1998	12.8	2001	12.7	2003	12.7
1981	17.1	1982	15.1	1983	14.2	1984	15.1	1987	13.6	1989	13.0	1992	12.7	1994	12.7	1996	12.7	1999	12.6	2002	12.6	2004	12.6
1982	14.9	1983	14.1	1984	15.0	1985	13.7	1988	12.9	1990	12.7	1993	12.5	1995	12.5	1997	12.5	2000	12.5	2003	12.5	2005	12.5
1983	14.0	1984	14.9	1985	13.6	1986	13.6	1989	12.8	1991	12.4	1994	12.4	1996	12.4	1998	12.4	2001	12.4	2004	12.4	2006	12.4
1984	14.8	1985	13.5	1986	13.5	1987	13.2	1990	12.4	1992	12.3	1995	12.3	1997	12.3	1999	12.3	2002	12.3	2005	12.3	2007	12.3
1985	13.3	1986	13.3	1987	13.1	1988	12.5	1991	12.1	1993	12.1	1996	12.1	1998	12.1	2000	12.1	2003	12.1	2006	12.1	2008	12.1
1986	13.2	1987	12.9	1988	12.4	1989	12.4	1992	12.0	1994	12.0	1997	12.0	1999	12.0	2001	12.0	2004	12.0	2007	12.0	2009	12.0
1987	12.8	1988	12.2	1989	12.2	1990	12.0	1993	11.8	1995	11.8	1998	11.8	2000	11.8	2002	11.8	2005	11.8	2008	11.8	2010	11.8
1988	12.1	1989	12.1	1990	11.8	1991	11.7	1994	11.7	1996	11.7	1999	11.7	2001	11.7	2003	11.7	2006	11.7	2009	11.7	2011	11.7
1989	11.9	1990	11.7	1991	11.5	1992	11.5	1995	11.5	1997	11.5	2000	11.5	2002	11.5	2004	11.5	2007	11.5	2010	11.5	2012	11.5
1990	11.5	1991	11.3	1992	11.3	1993	11.3	1996	11.3	1998	11.3	2001	11.3	2003	11.3	2005	11.3	2008	11.3	2011	11.3	2013	11.3
1991	11.1	1992	11.1	1993	11.1	1994	11.1	1997	11.1	1999	11.1	2002	11.1	2004	11.1	2006	11.1	2009	11.1	2012	11.1	2014	11.1
1992	10.9	1993	10.9	1994	10.9	1995	10.9	1998	10.9	2000	10.9	2003	10.9	2005	10.9	2007	10.9	2010	10.9	2013	10.9	2015	10.9
1993	10.7	1994	10.7	1995	10.7	1996	10.7	1999	10.7	2001	10.6	2004	10.6	2006	10.6	2008	10.6	2011	10.6	2014	10.6	2016	10.6
1994	10.4	1995	10.4	1996	10.4	1997	10.4	2000	10.4	2002	10.4	2005	10.4	2007	10.4	2009	10.4	2012	10.4	2015	10.4	2017	10.4
1995	10.2	1996	10.2	1997	10.2	1998	10.2	2001	10.1	2003	10.1	2006	10.1	2008	10.1	2010	10.1	2013	10.1	2016	10.1	2018	10.1
1996	9.9	1997	9.9	1998	9.9	1999	9.9	2002	9.9	2004	9.9	2007	9.9	2009	9.9	2011	9.9	2014	9.9	2017	9.9	2019	9.9
1997	0.0	1998	0.0	1999	0.0	2000	0.0	2003	0.0	2005	0.0	2008	0.0	2010	0.0	2012	0.0	2015	0.0	2018	0.0	2020	0.0

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F.

Emissions are based on the January 1 mileage accumulation figures given in Table 1.4.7

H-270

TABLE 7.11C.1
BY-MODEL-YEAR EMISSION LEVELS FOR LOW ALTITUDE
HEAVY DUTY DIESEL POWERED VEHICLES
NO_x

DATE : JUNE 30, 1995

1985		1986		1987		1988		1989		January 1 of Calendar Year 1990		1991		1992		1993		1994		1995		1996	
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**
1961	33.5	1962	33.2	1963	32.9	1964	32.7	1965	32.4	1966	32.2	1967	33.3	1968	33.1	1969	33.7	1970	34.2	1971	34.7	1972	34.6
1962	33.3	1963	33.0	1964	32.7	1965	32.5	1966	32.2	1967	33.4	1968	33.1	1969	33.7	1970	34.2	1971	34.7	1972	34.5	1973	34.4
1963	33.0	1964	32.8	1965	32.5	1966	32.2	1967	33.4	1968	33.1	1969	33.7	1970	34.2	1971	34.7	1972	34.5	1973	34.3	1974	34.2
1964	32.8	1965	32.5	1966	32.3	1967	33.4	1968	33.1	1969	33.7	1970	34.2	1971	34.6	1972	34.4	1973	34.3	1974	34.1	1975	34.0
1965	32.5	1966	32.3	1967	33.4	1968	33.1	1969	33.7	1970	34.1	1971	34.6	1972	34.4	1973	34.2	1974	34.0	1975	33.9	1976	33.8
1966	32.2	1967	33.4	1968	33.1	1969	33.6	1970	34.1	1971	34.5	1972	34.3	1973	34.1	1974	33.9	1975	33.8	1976	33.6	1977	34.1
1967	33.3	1968	33.1	1969	33.6	1970	34.0	1971	34.5	1972	34.3	1973	34.0	1974	33.8	1975	33.7	1976	33.5	1977	33.9	1978	33.3
1968	33.0	1969	33.5	1970	34.0	1971	34.4	1972	34.2	1973	34.0	1974	33.7	1975	33.6	1976	33.4	1977	33.8	1978	33.2	1979	24.0
1969	33.4	1970	33.8	1971	34.3	1972	34.1	1973	33.8	1974	33.6	1975	33.4	1976	33.3	1977	33.6	1978	33.0	1979	24.0	1980	21.6
1970	33.7	1971	34.1	1972	33.9	1973	33.7	1974	33.5	1975	33.3	1976	33.1	1977	33.5	1978	32.9	1979	24.0	1980	21.6	1981	21.6
1971	34.0	1972	33.8	1973	33.5	1974	33.3	1975	33.1	1976	32.9	1977	33.3	1978	32.7	1979	24.0	1980	21.6	1981	21.6	1982	19.0
1972	33.5	1973	33.3	1974	33.1	1975	32.9	1976	32.7	1977	33.1	1978	32.5	1979	24.0	1980	21.6	1981	21.6	1982	19.0	1983	18.2
1973	33.1	1974	32.9	1975	32.7	1976	32.5	1977	32.9	1978	32.2	1979	24.0	1980	21.6	1981	21.6	1982	19.0	1983	18.2	1984	19.2
1974	32.6	1975	32.4	1976	32.2	1977	32.6	1978	32.0	1979	24.0	1980	21.6	1981	21.6	1982	19.0	1983	18.2	1984	19.2	1985	17.7
1975	32.1	1976	31.9	1977	32.3	1978	31.7	1979	24.0	1980	21.6	1981	21.6	1982	19.0	1983	18.2	1984	19.2	1985	17.7	1986	17.7
1976	31.6	1977	32.0	1978	31.3	1979	24.0	1980	21.6	1981	21.6	1982	19.0	1983	18.2	1984	19.2	1985	17.7	1986	17.7	1987	17.3
1977	31.5	1978	30.9	1979	24.0	1980	21.6	1981	21.6	1982	19.0	1983	18.2	1984	19.2	1985	17.7	1986	17.7	1987	17.3	1988	16.9
1978	30.5	1979	24.0	1980	21.6	1981	21.6	1982	19.0	1983	18.2	1984	19.2	1985	17.7	1986	17.7	1987	17.3	1988	16.9	1989	16.9
1979	24.0	1980	21.6	1981	21.6	1982	19.0	1983	18.2	1984	19.2	1985	17.7	1986	17.7	1987	17.3	1988	16.9	1989	16.9	1990	9.9
1980	21.6	1981	21.6	1982	19.0	1983	18.2	1984	19.2	1985	17.7	1986	17.7	1987	17.3	1988	16.9	1989	16.9	1990	9.9	1991	8.2
1981	21.6	1982	19.0	1983	18.2	1984	19.2	1985	17.7	1986	17.7	1987	17.3	1988	16.9	1989	16.9	1990	9.9	1991	8.2	1992	8.2
1982	19.0	1983	18.2	1984	19.2	1985	17.7	1986	17.7	1987	17.3	1988	16.9	1989	16.9	1990	9.9	1991	8.2	1992	8.2	1993	8.2
1983	18.2	1984	19.2	1985	17.7	1986	17.7	1987	17.3	1988	16.9	1989	16.9	1990	9.9	1991	8.2	1992	8.2	1993	8.2	1994	8.2
1984	19.2	1985	17.7	1986	17.7	1987	17.3	1988	16.9	1989	16.9	1990	9.9	1991	8.2	1992	8.2	1993	8.2	1994	8.2	1995	8.2
1985	0.0	1986	0.0	1987	0.0	1988	0.0	1989	0.0	1990	0.0	1991	0.0	1992	0.0	1993	0.0	1994	0.0	1995	0.0	1996	0.0

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F.

Emissions are based on the January 1 mileage accumulation figures given in Table 1.4.7

Continued on the next page.

H-271

TABLE 7.11C.1 (continued)
 BY-MODEL-YEAR EMISSION LEVELS FOR LOW ALTITUDE
 HEAVY DUTY DIESEL POWERED VEHICLES
 NOx

1997		1998		1999		2000		2003		January 1 of Calendar Year 2005		2008		2010		2012		2015		2018		2020	
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**
1973	34.5	1974	34.4	1975	34.3	1976	34.2	1979	24.0	1981	21.6	1984	19.2	1986	17.7	1988	16.9	1991	8.2	1994	8.2	1996	8.2
1974	34.3	1975	34.2	1976	34.1	1977	34.6	1980	21.6	1982	19.0	1985	17.7	1987	17.3	1989	16.9	1992	8.2	1995	8.2	1997	8.2
1975	34.1	1976	34.0	1977	34.4	1978	33.9	1981	21.6	1983	18.2	1986	17.7	1988	16.9	1990	9.9	1993	8.2	1996	8.2	1998	6.5
1976	33.9	1977	34.3	1978	33.8	1979	24.0	1982	19.0	1984	19.2	1987	17.3	1989	16.9	1991	8.2	1994	8.2	1997	8.2	1999	6.5
1977	34.2	1978	33.6	1979	24.0	1980	21.6	1983	18.2	1985	17.7	1988	16.9	1990	9.9	1992	8.2	1995	8.2	1998	6.5	2000	6.5
1978	33.5	1979	24.0	1980	21.6	1981	21.6	1984	19.2	1986	17.7	1989	16.9	1991	8.2	1993	8.2	1996	8.2	1999	6.5	2001	6.5
1979	24.0	1980	21.6	1981	21.6	1982	19.0	1985	17.7	1987	17.3	1990	9.9	1992	8.2	1994	8.2	1997	8.2	2000	6.5	2002	6.5
1980	21.6	1981	21.6	1982	19.0	1983	18.2	1986	17.7	1988	16.9	1991	8.2	1993	8.2	1995	8.2	1998	6.5	2001	6.5	2003	6.5
1981	21.6	1982	19.0	1983	18.2	1984	19.2	1987	17.3	1989	16.9	1992	8.2	1994	8.2	1996	8.2	1999	6.5	2002	6.5	2004	6.5
1982	19.0	1983	18.2	1984	19.2	1985	17.7	1988	16.9	1990	9.9	1993	8.2	1995	8.2	1997	8.2	2000	6.5	2003	6.5	2005	6.5
1983	18.2	1984	19.2	1985	17.7	1986	17.7	1989	16.9	1991	8.2	1994	8.2	1996	8.2	1998	6.5	2001	6.5	2004	6.5	2006	6.5
1984	19.2	1985	17.7	1986	17.7	1987	17.3	1990	9.9	1992	8.2	1995	8.2	1997	8.2	1999	6.5	2002	6.5	2005	6.5	2007	6.5
1985	17.7	1986	17.7	1987	17.3	1988	16.9	1991	8.2	1993	8.2	1996	8.2	1998	6.5	2000	6.5	2003	6.5	2006	6.5	2008	6.5
1986	17.7	1987	17.3	1988	16.9	1989	16.9	1992	8.2	1994	8.2	1997	8.2	1999	6.5	2001	6.5	2004	6.5	2007	6.5	2009	6.5
1987	17.3	1988	16.9	1989	16.9	1990	9.9	1993	8.2	1995	8.2	1998	6.5	2000	6.5	2002	6.5	2005	6.5	2008	6.5	2010	6.5
1988	16.9	1989	16.9	1990	9.9	1991	8.2	1994	8.2	1996	8.2	1999	6.5	2001	6.5	2003	6.5	2006	6.5	2009	6.5	2011	6.5
1989	16.9	1990	9.9	1991	8.2	1992	8.2	1995	8.2	1997	8.2	2000	6.5	2002	6.5	2004	6.5	2007	6.5	2010	6.5	2012	6.5
1990	9.9	1991	8.2	1992	8.2	1993	8.2	1996	8.2	1998	6.5	2001	6.5	2003	6.5	2005	6.5	2008	6.5	2011	6.5	2013	6.5
1991	8.2	1992	8.2	1993	8.2	1994	8.2	1997	8.2	1999	6.5	2002	6.5	2004	6.5	2006	6.5	2009	6.5	2012	6.5	2014	6.5
1992	8.2	1993	8.2	1994	8.2	1995	8.2	1998	6.5	2000	6.5	2003	6.5	2005	6.5	2007	6.5	2010	6.5	2013	6.5	2015	6.5
1993	8.2	1994	8.2	1995	8.2	1996	8.2	1999	6.5	2001	6.5	2004	6.5	2006	6.5	2008	6.5	2011	6.5	2014	6.5	2016	6.5
1994	8.2	1995	8.2	1996	8.2	1997	8.2	2000	6.5	2002	6.5	2005	6.5	2007	6.5	2009	6.5	2012	6.5	2015	6.5	2017	6.5
1995	8.2	1996	8.2	1997	8.2	1998	6.5	2001	6.5	2003	6.5	2006	6.5	2008	6.5	2010	6.5	2013	6.5	2016	6.5	2018	6.5
1996	8.2	1997	8.2	1998	6.5	1999	6.5	2002	6.5	2004	6.5	2007	6.5	2009	6.5	2011	6.5	2014	6.5	2017	6.5	2019	6.5
1997	0.0	1998	0.0	1999	0.0	2000	0.0	2003	0.0	2005	0.0	2008	0.0	2010	0.0	2012	0.0	2015	0.0	2018	0.0	2020	0.0

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F.

Emissions are based on the January 1 mileage accumulation figures given in Table 1.4.7

H-272

TABLE 7.11A.2
BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE
HEAVY DUTY DIESEL POWERED VEHICLES
TOTAL NONMETHANE HC

DATE : JUNE 30, 1995

1985		1986		1987		1988		1989		January 1 of Calendar Year 1990		1991		1992		1993		1994		1995		1996	
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**
1961	11.6	1962	11.5	1963	11.4	1964	11.3	1965	11.2	1966	11.1	1967	11.3	1968	11.3	1969	11.5	1970	11.5	1971	11.7	1972	11.6
1962	11.5	1963	11.4	1964	11.3	1965	11.2	1966	11.1	1967	11.4	1968	11.3	1969	11.5	1970	11.5	1971	11.7	1972	11.6	1973	11.6
1963	11.4	1964	11.3	1965	11.2	1966	11.1	1967	11.4	1968	11.3	1969	11.5	1970	11.5	1971	11.7	1972	11.6	1973	11.6	1974	11.5
1964	11.3	1965	11.2	1966	11.1	1967	11.4	1968	11.3	1969	11.5	1970	11.5	1971	11.7	1972	11.6	1973	11.5	1974	11.5	1975	11.5
1965	11.2	1966	11.1	1967	11.4	1968	11.3	1969	11.5	1970	11.5	1971	11.6	1972	11.6	1973	11.5	1974	11.5	1975	11.4	1976	11.4
1966	11.1	1967	11.4	1968	11.3	1969	11.5	1970	11.5	1971	11.6	1972	11.6	1973	11.5	1974	11.4	1975	11.4	1976	11.3	1977	11.5
1967	11.3	1968	11.3	1969	11.4	1970	11.4	1971	11.6	1972	11.5	1973	11.5	1974	11.4	1975	11.4	1976	11.3	1977	11.5	1978	11.3
1968	11.2	1969	11.4	1970	11.4	1971	11.6	1972	11.5	1973	11.4	1974	11.4	1975	11.3	1976	11.3	1977	11.4	1978	11.2	1979	7.9
1969	11.4	1970	11.4	1971	11.5	1972	11.5	1973	11.4	1974	11.3	1975	11.3	1976	11.2	1977	11.4	1978	11.2	1979	7.9	1980	7.1
1970	11.3	1971	11.5	1972	11.4	1973	11.4	1974	11.3	1975	11.2	1976	11.2	1977	11.3	1978	11.1	1979	7.9	1980	7.1	1981	7.1
1971	11.4	1972	11.4	1973	11.3	1974	11.2	1975	11.2	1976	11.1	1977	11.3	1978	11.0	1979	7.9	1980	7.1	1981	7.1	1982	6.2
1972	11.3	1973	11.2	1974	11.2	1975	11.1	1976	11.1	1977	11.2	1978	11.0	1979	7.9	1980	7.1	1981	7.1	1982	6.2	1983	5.9
1973	11.2	1974	11.1	1975	11.0	1976	11.0	1977	11.1	1978	10.9	1979	7.9	1980	7.1	1981	7.1	1982	6.2	1983	5.9	1984	6.3
1974	11.0	1975	11.0	1976	10.9	1977	11.0	1978	10.8	1979	7.9	1980	7.1	1981	7.1	1982	6.2	1983	5.9	1984	6.3	1985	5.8
1975	10.9	1976	10.8	1977	10.9	1978	10.7	1979	7.9	1980	7.1	1981	7.1	1982	6.2	1983	5.9	1984	6.3	1985	5.8	1986	5.1
1976	10.7	1977	10.8	1978	10.6	1979	7.9	1980	7.1	1981	7.1	1982	6.2	1983	5.9	1984	6.3	1985	5.8	1986	5.1	1987	4.9
1977	10.7	1978	10.5	1979	7.9	1980	7.1	1981	7.1	1982	6.2	1983	5.9	1984	6.3	1985	5.8	1986	5.1	1987	4.9	1988	4.9
1978	10.3	1979	7.9	1980	7.1	1981	7.1	1982	6.2	1983	5.9	1984	6.3	1985	5.8	1986	5.1	1987	4.9	1988	4.9	1989	4.9
1979	7.9	1980	7.1	1981	7.1	1982	6.2	1983	5.9	1984	6.3	1985	5.8	1986	5.1	1987	4.9	1988	4.9	1989	4.9	1990	4.7
1980	7.1	1981	7.1	1982	6.2	1983	5.9	1984	6.3	1985	5.8	1986	5.1	1987	4.9	1988	4.9	1989	4.9	1990	4.7	1991	4.7
1981	7.1	1982	6.2	1983	5.9	1984	6.3	1985	5.8	1986	5.1	1987	4.9	1988	4.9	1989	4.9	1990	4.7	1991	4.7	1992	4.7
1982	6.2	1983	5.9	1984	6.3	1985	5.8	1986	5.1	1987	4.9	1988	4.9	1989	4.9	1990	4.7	1991	4.7	1992	4.7	1993	4.7
1983	5.9	1984	6.3	1985	5.8	1986	5.1	1987	4.9	1988	4.9	1989	4.9	1990	4.7	1991	4.7	1992	4.7	1993	4.7	1994	4.7
1984	6.3	1985	5.8	1986	5.1	1987	4.9	1988	4.9	1989	4.9	1990	4.7	1991	4.7	1992	4.7	1993	4.7	1994	4.7	1995	4.7
1985	0.0	1986	0.0	1987	0.0	1988	0.0	1989	0.0	1990	0.0	1991	0.0	1992	0.0	1993	0.0	1994	0.0	1995	0.0	1996	0.0

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F.

Emissions are based on the January 1 mileage accumulation figures given in Table 2.4.7

Continued on the next page.

H-273

TABLE 7.11A.2 (continued)
 BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE
 HEAVY DUTY DIESEL POWERED VEHICLES
 TOTAL NONMETHANE HC

1997		1998		1999		2000		2003		January 1 of Calendar Year 2005		2008		2010		2012		2015		2018		2020	
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**
1973	11.6	1974	11.6	1975	11.5	1976	11.5	1979	7.9	1981	7.1	1984	6.3	1986	5.1	1988	4.9	1991	4.7	1994	4.7	1996	4.7
1974	11.5	1975	11.5	1976	11.5	1977	11.7	1980	7.1	1982	6.2	1985	5.8	1987	4.9	1989	4.9	1992	4.7	1995	4.7	1997	4.7
1975	11.5	1976	11.5	1977	11.6	1978	11.4	1981	7.1	1983	5.9	1986	5.1	1988	4.9	1990	4.7	1993	4.7	1996	4.7	1998	4.7
1976	11.4	1977	11.6	1978	11.4	1979	7.9	1982	6.2	1984	6.3	1987	4.9	1989	4.9	1991	4.7	1994	4.7	1997	4.7	1999	4.7
1977	11.5	1978	11.3	1979	7.9	1980	7.1	1983	5.9	1985	5.8	1988	4.9	1990	4.7	1992	4.7	1995	4.7	1998	4.7	2000	4.7
1978	11.3	1979	7.9	1980	7.1	1981	7.1	1984	6.3	1986	5.1	1989	4.9	1991	4.7	1993	4.7	1996	4.7	1999	4.7	2001	4.7
1979	7.9	1980	7.1	1981	7.1	1982	6.2	1985	5.8	1987	4.9	1990	4.7	1992	4.7	1994	4.7	1997	4.7	2000	4.7	2002	4.7
1980	7.1	1981	7.1	1982	6.2	1983	5.9	1986	5.1	1988	4.9	1991	4.7	1993	4.7	1995	4.7	1998	4.7	2001	4.7	2003	4.7
1981	7.1	1982	6.2	1983	5.9	1984	6.3	1987	4.9	1989	4.9	1992	4.7	1994	4.7	1996	4.7	1999	4.7	2002	4.7	2004	4.7
1982	6.2	1983	5.9	1984	6.3	1985	5.8	1988	4.9	1990	4.7	1993	4.7	1995	4.7	1997	4.7	2000	4.7	2003	4.7	2005	4.7
1983	5.9	1984	6.3	1985	5.8	1986	5.1	1989	4.9	1991	4.7	1994	4.7	1996	4.7	1998	4.7	2001	4.7	2004	4.7	2006	4.7
1984	6.3	1985	5.8	1986	5.1	1987	4.9	1990	4.7	1992	4.7	1995	4.7	1997	4.7	1999	4.7	2002	4.7	2005	4.7	2007	4.7
1985	5.8	1986	5.1	1987	4.9	1988	4.9	1991	4.7	1993	4.7	1996	4.7	1998	4.7	2000	4.7	2003	4.7	2006	4.7	2008	4.7
1986	5.1	1987	4.9	1988	4.9	1989	4.9	1992	4.7	1994	4.7	1997	4.7	1999	4.7	2001	4.7	2004	4.7	2007	4.7	2009	4.7
1987	4.9	1988	4.9	1989	4.9	1990	4.7	1993	4.7	1995	4.7	1998	4.7	2000	4.7	2002	4.7	2005	4.7	2008	4.7	2010	4.7
1988	4.9	1989	4.9	1990	4.7	1991	4.7	1994	4.7	1996	4.7	1999	4.7	2001	4.7	2003	4.7	2006	4.7	2009	4.7	2011	4.7
1989	4.9	1990	4.7	1991	4.7	1992	4.7	1995	4.7	1997	4.7	2000	4.7	2002	4.7	2004	4.7	2007	4.7	2010	4.7	2012	4.7
1990	4.7	1991	4.7	1992	4.7	1993	4.7	1996	4.7	1998	4.7	2001	4.7	2003	4.7	2005	4.7	2008	4.7	2011	4.7	2013	4.7
1991	4.7	1992	4.7	1993	4.7	1994	4.7	1997	4.7	1999	4.7	2002	4.7	2004	4.7	2006	4.7	2009	4.7	2012	4.7	2014	4.7
1992	4.7	1993	4.7	1994	4.7	1995	4.7	1998	4.7	2000	4.7	2003	4.7	2005	4.7	2007	4.7	2010	4.7	2013	4.7	2015	4.7
1993	4.7	1994	4.7	1995	4.7	1996	4.7	1999	4.7	2001	4.7	2004	4.7	2006	4.7	2008	4.7	2011	4.7	2014	4.7	2016	4.7
1994	4.7	1995	4.7	1996	4.7	1997	4.7	2000	4.7	2002	4.7	2005	4.7	2007	4.7	2009	4.7	2012	4.7	2015	4.7	2017	4.7
1995	4.7	1996	4.7	1997	4.7	1998	4.7	2001	4.7	2003	4.7	2006	4.7	2008	4.7	2010	4.7	2013	4.7	2016	4.7	2018	4.7
1996	4.7	1997	4.7	1998	4.7	1999	4.7	2002	4.7	2004	4.7	2007	4.7	2009	4.7	2011	4.7	2014	4.7	2017	4.7	2019	4.7
1997	0.0	1998	0.0	1999	0.0	2000	0.0	2003	0.0	2005	0.0	2008	0.0	2010	0.0	2012	0.0	2015	0.0	2018	0.0	2020	0.0

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F.

Emissions are based on the January 1 mileage accumulation figures given in Table 2.4.7

H-274

TABLE 7.11B.2
BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE
HEAVY DUTY DIESEL POWERED VEHICLES
CO

DATE : JUNE 30, 1995

1985		1986		1987		1988		1989		January 1 of Calendar Year 1990		1991		1992		1993		1994		1995		1996	
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**
1961	27.0	1962	26.8	1963	26.6	1964	26.3	1965	26.1	1966	25.9	1967	27.0	1968	26.8	1969	27.2	1970	27.2	1971	28.1	1972	28.0
1962	26.8	1963	26.6	1964	26.4	1965	26.2	1966	26.0	1967	27.0	1968	26.8	1969	27.2	1970	27.2	1971	28.1	1972	28.0	1973	27.9
1963	26.6	1964	26.4	1965	26.2	1966	26.0	1967	27.0	1968	26.8	1969	27.2	1970	27.2	1971	28.1	1972	27.9	1973	27.8	1974	27.7
1964	26.4	1965	26.2	1966	26.0	1967	27.0	1968	26.8	1969	27.2	1970	27.2	1971	28.0	1972	27.9	1973	27.7	1974	27.6	1975	27.5
1965	26.2	1966	26.0	1967	27.0	1968	26.8	1969	27.2	1970	27.2	1971	28.0	1972	27.8	1973	27.7	1974	27.5	1975	27.4	1976	27.3
1966	26.0	1967	27.0	1968	26.8	1969	27.2	1970	27.2	1971	28.0	1972	27.8	1973	27.6	1974	27.5	1975	27.3	1976	27.2	1977	27.5
1967	26.9	1968	26.7	1969	27.1	1970	27.1	1971	27.9	1972	27.7	1973	27.6	1974	27.4	1975	27.2	1976	27.1	1977	27.4	1978	27.0
1968	26.7	1969	27.1	1970	27.0	1971	27.9	1972	27.7	1973	27.5	1974	27.3	1975	27.1	1976	27.0	1977	27.3	1978	26.8	1979	29.8
1969	27.0	1970	27.0	1971	27.8	1972	27.6	1973	27.4	1974	27.2	1975	27.0	1976	26.9	1977	27.2	1978	26.7	1979	29.7	1980	26.8
1970	26.8	1971	27.6	1972	27.4	1973	27.3	1974	27.1	1975	26.9	1976	26.8	1977	27.0	1978	26.5	1979	29.6	1980	26.7	1981	26.6
1971	27.5	1972	27.3	1973	27.1	1974	26.9	1975	26.8	1976	26.6	1977	26.9	1978	26.4	1979	29.5	1980	26.6	1981	26.5	1982	22.9
1972	27.1	1973	27.0	1974	26.8	1975	26.6	1976	26.5	1977	26.7	1978	26.2	1979	29.3	1980	26.4	1981	26.4	1982	22.8	1983	22.0
1973	26.7	1974	26.6	1975	26.4	1976	26.3	1977	26.5	1978	26.0	1979	29.2	1980	26.3	1981	26.2	1982	22.7	1983	21.9	1984	23.2
1974	26.3	1975	26.2	1976	26.0	1977	26.3	1978	25.8	1979	29.0	1980	26.2	1981	26.1	1982	22.6	1983	21.8	1984	23.1	1985	21.1
1975	25.9	1976	25.8	1977	26.0	1978	25.5	1979	28.8	1980	26.0	1981	25.9	1982	22.4	1983	21.6	1984	22.9	1985	21.0	1986	21.0
1976	25.4	1977	25.7	1978	25.2	1979	28.6	1980	25.8	1981	25.7	1982	22.3	1983	21.4	1984	22.7	1985	20.8	1986	20.8	1987	20.4
1977	25.4	1978	24.9	1979	28.3	1980	25.6	1981	25.5	1982	22.1	1983	21.3	1984	22.5	1985	20.6	1986	20.6	1987	20.2	1988	19.5
1978	24.5	1979	28.1	1980	25.3	1981	25.2	1982	21.9	1983	21.1	1984	22.3	1985	20.4	1986	20.4	1987	20.0	1988	19.3	1989	19.3
1979	27.7	1980	25.0	1981	24.9	1982	21.6	1983	20.8	1984	22.1	1985	20.2	1986	20.2	1987	19.8	1988	19.1	1989	19.1	1990	18.7
1980	24.7	1981	24.6	1982	21.4	1983	20.6	1984	21.8	1985	20.0	1986	20.0	1987	19.5	1988	18.9	1989	18.9	1990	18.5	1991	18.2
1981	24.3	1982	21.1	1983	20.3	1984	21.5	1985	19.7	1986	19.7	1987	19.3	1988	18.7	1989	18.7	1990	18.3	1991	18.0	1992	18.0
1982	20.8	1983	20.0	1984	21.2	1985	19.4	1986	19.4	1987	19.0	1988	18.4	1989	18.4	1990	18.0	1991	17.8	1992	17.8	1993	17.7
1983	19.6	1984	20.8	1985	19.1	1986	19.1	1987	18.7	1988	18.2	1989	18.2	1990	17.7	1991	17.5	1992	17.5	1993	17.5	1994	17.5
1984	20.4	1985	18.7	1986	18.7	1987	18.3	1988	17.9	1989	17.8	1990	17.4	1991	17.2	1992	17.2	1993	17.2	1994	17.2	1995	17.2
1985	0.0	1986	0.0	1987	0.0	1988	0.0	1989	0.0	1990	0.0	1991	0.0	1992	0.0	1993	0.0	1994	0.0	1995	0.0	1996	0.0

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F.

Emissions are based on the January 1 mileage accumulation figures given in Table 2.4.7

Continued on the next page.

H-275

TABLE 7.11B.2 (continued)
 BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE
 HEAVY DUTY DIESEL POWERED VEHICLES
 CO

1997		1998		1999		2000		2003		January 1 of Calendar Year 2005		2008		2010		2012		2015		2018		2020	
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**
1973	27.9	1974	27.8	1975	27.8	1976	27.7	1979	30.6	1981	27.7	1984	24.7	1986	22.6	1988	21.3	1991	20.7	1994	20.7	1996	20.7
1974	27.8	1975	27.7	1976	27.6	1977	28.0	1980	27.6	1982	23.8	1985	22.5	1987	22.1	1989	21.3	1992	20.6	1995	20.6	1997	20.6
1975	27.6	1976	27.5	1977	27.9	1978	27.4	1981	27.4	1983	23.0	1986	22.4	1988	21.2	1990	20.8	1993	20.5	1996	20.5	1998	20.5
1976	27.4	1977	27.8	1978	27.3	1979	30.2	1982	23.6	1984	24.4	1987	22.0	1989	21.1	1991	20.5	1994	20.5	1997	20.5	1999	20.4
1977	27.6	1978	27.2	1979	30.1	1980	27.2	1983	22.8	1985	22.2	1988	21.0	1990	20.6	1992	20.4	1995	20.4	1998	20.3	2000	20.3
1978	27.1	1979	30.0	1980	27.1	1981	27.1	1984	24.2	1986	22.1	1989	20.9	1991	20.3	1993	20.3	1996	20.3	1999	20.2	2001	20.2
1979	29.9	1980	27.0	1981	27.0	1982	23.3	1985	22.0	1987	21.6	1990	20.4	1992	20.2	1994	20.2	1997	20.2	2000	20.2	2002	20.1
1980	26.9	1981	26.9	1982	23.2	1983	22.4	1986	21.9	1988	20.7	1991	20.1	1993	20.1	1995	20.1	1998	20.0	2001	20.0	2003	20.0
1981	26.8	1982	23.1	1983	22.3	1984	23.8	1987	21.4	1989	20.6	1992	20.0	1994	20.0	1996	20.0	1999	19.9	2002	19.9	2004	19.9
1982	23.0	1983	22.2	1984	23.6	1985	21.6	1988	20.5	1990	20.1	1993	19.8	1995	19.8	1997	19.8	2000	19.8	2003	19.8	2005	19.8
1983	22.1	1984	23.5	1985	21.5	1986	21.5	1989	20.4	1991	19.7	1994	19.7	1996	19.7	1998	19.7	2001	19.7	2004	19.7	2006	19.7
1984	23.4	1985	21.4	1986	21.4	1987	21.0	1990	19.8	1992	19.6	1995	19.6	1997	19.6	1999	19.6	2002	19.6	2005	19.6	2007	19.6
1985	21.3	1986	21.3	1987	20.8	1988	20.1	1991	19.4	1993	19.4	1996	19.4	1998	19.4	2000	19.4	2003	19.4	2006	19.4	2008	19.4
1986	21.1	1987	20.7	1988	20.0	1989	19.9	1992	19.3	1994	19.3	1997	19.3	1999	19.3	2001	19.3	2004	19.3	2007	19.3	2009	19.3
1987	20.5	1988	19.8	1989	19.8	1990	19.4	1993	19.1	1995	19.1	1998	19.1	2000	19.1	2002	19.1	2005	19.1	2008	19.1	2010	19.1
1988	19.7	1989	19.6	1990	19.2	1991	19.0	1994	19.0	1996	19.0	1999	19.0	2001	18.9	2003	18.9	2006	18.9	2009	18.9	2011	18.9
1989	19.5	1990	19.1	1991	18.8	1992	18.8	1995	18.8	1997	18.8	2000	18.8	2002	18.8	2004	18.8	2007	18.8	2010	18.8	2012	18.8
1990	18.9	1991	18.6	1992	18.6	1993	18.6	1996	18.6	1998	18.6	2001	18.6	2003	18.6	2005	18.6	2008	18.6	2011	18.6	2013	18.6
1991	18.4	1992	18.4	1993	18.4	1994	18.4	1997	18.4	1999	18.4	2002	18.4	2004	18.4	2006	18.4	2009	18.4	2012	18.4	2014	18.4
1992	18.2	1993	18.2	1994	18.2	1995	18.2	1998	18.2	2000	18.2	2003	18.2	2005	18.2	2007	18.2	2010	18.2	2013	18.2	2015	18.2
1993	18.0	1994	18.0	1995	18.0	1996	18.0	1999	17.9	2001	17.9	2004	17.9	2006	17.9	2008	17.9	2011	17.9	2014	17.9	2016	17.9
1994	17.7	1995	17.7	1996	17.7	1997	17.7	2000	17.7	2002	17.7	2005	17.7	2007	17.7	2009	17.7	2012	17.7	2015	17.7	2017	17.7
1995	17.5	1996	17.5	1997	17.5	1998	17.4	2001	17.4	2003	17.4	2006	17.4	2008	17.4	2010	17.4	2013	17.4	2016	17.4	2018	17.4
1996	17.2	1997	17.2	1998	17.2	1999	17.2	2002	17.2	2004	17.2	2007	17.2	2009	17.2	2011	17.2	2014	17.2	2017	17.2	2019	17.2
1997	0.0	1998	0.0	1999	0.0	2000	0.0	2003	0.0	2005	0.0	2008	0.0	2010	0.0	2012	0.0	2015	0.0	2018	0.0	2020	0.0

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F.

Emissions are based on the January 1 mileage accumulation figures given in Table 2.4.7

H-276

TABLE 7.11C.2
BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE
HEAVY DUTY DIESEL POWERED VEHICLES
NO_x

DATE : JUNE 30, 1995

1985		1986		1987		1988		1989		January 1 of Calendar Year 1990		1991		1992		1993		1994		1995		1996	
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**
1961	33.5	1962	33.2	1963	32.9	1964	32.7	1965	32.4	1966	32.2	1967	33.3	1968	33.1	1969	33.7	1970	34.2	1971	34.7	1972	34.6
1962	33.3	1963	33.0	1964	32.7	1965	32.5	1966	32.2	1967	33.4	1968	33.1	1969	33.7	1970	34.2	1971	34.7	1972	34.5	1973	34.4
1963	33.0	1964	32.8	1965	32.5	1966	32.2	1967	33.4	1968	33.1	1969	33.7	1970	34.2	1971	34.7	1972	34.5	1973	34.3	1974	34.2
1964	32.8	1965	32.5	1966	32.3	1967	33.4	1968	33.1	1969	33.7	1970	34.2	1971	34.6	1972	34.4	1973	34.3	1974	34.1	1975	34.0
1965	32.5	1966	32.3	1967	33.4	1968	33.1	1969	33.7	1970	34.1	1971	34.6	1972	34.4	1973	34.2	1974	34.0	1975	33.9	1976	33.8
1966	32.2	1967	33.4	1968	33.1	1969	33.6	1970	34.1	1971	34.5	1972	34.3	1973	34.1	1974	33.9	1975	33.8	1976	33.6	1977	34.1
1967	33.3	1968	33.1	1969	33.6	1970	34.0	1971	34.5	1972	34.3	1973	34.0	1974	33.8	1975	33.7	1976	33.5	1977	33.9	1978	33.3
1968	33.0	1969	33.5	1970	34.0	1971	34.4	1972	34.2	1973	34.0	1974	33.7	1975	33.6	1976	33.4	1977	33.8	1978	33.2	1979	24.0
1969	33.4	1970	33.8	1971	34.3	1972	34.1	1973	33.8	1974	33.6	1975	33.4	1976	33.3	1977	33.6	1978	33.0	1979	24.0	1980	21.6
1970	33.7	1971	34.1	1972	33.9	1973	33.7	1974	33.5	1975	33.3	1976	33.1	1977	33.5	1978	32.9	1979	24.0	1980	21.6	1981	21.6
1971	34.0	1972	33.8	1973	33.5	1974	33.3	1975	33.1	1976	32.9	1977	33.3	1978	32.7	1979	24.0	1980	21.6	1981	21.6	1982	18.9
1972	33.5	1973	33.3	1974	33.1	1975	32.9	1976	32.7	1977	33.1	1978	32.5	1979	24.0	1980	21.6	1981	21.6	1982	18.9	1983	18.2
1973	33.1	1974	32.9	1975	32.7	1976	32.5	1977	32.9	1978	32.2	1979	24.0	1980	21.6	1981	21.6	1982	18.9	1983	18.2	1984	19.2
1974	32.6	1975	32.4	1976	32.2	1977	32.6	1978	32.0	1979	24.0	1980	21.6	1981	21.6	1982	18.9	1983	18.2	1984	19.2	1985	17.7
1975	32.1	1976	31.9	1977	32.3	1978	31.7	1979	24.0	1980	21.6	1981	21.6	1982	18.9	1983	18.2	1984	19.2	1985	17.7	1986	17.7
1976	31.6	1977	32.0	1978	31.3	1979	24.0	1980	21.6	1981	21.6	1982	18.9	1983	18.2	1984	19.2	1985	17.7	1986	17.7	1987	17.3
1977	31.5	1978	30.9	1979	24.0	1980	21.6	1981	21.6	1982	18.9	1983	18.2	1984	19.2	1985	17.7	1986	17.7	1987	17.3	1988	16.9
1978	30.5	1979	24.0	1980	21.6	1981	21.6	1982	18.9	1983	18.2	1984	19.2	1985	17.7	1986	17.7	1987	17.3	1988	16.9	1989	16.9
1979	24.0	1980	21.6	1981	21.6	1982	18.9	1983	18.2	1984	19.2	1985	17.7	1986	17.7	1987	17.3	1988	16.9	1989	16.9	1990	9.9
1980	21.6	1981	21.6	1982	18.9	1983	18.2	1984	19.2	1985	17.7	1986	17.7	1987	17.3	1988	16.9	1989	16.9	1990	9.9	1991	8.2
1981	21.6	1982	18.9	1983	18.2	1984	19.2	1985	17.7	1986	17.7	1987	17.3	1988	16.9	1989	16.9	1990	9.9	1991	8.2	1992	8.2
1982	18.9	1983	18.2	1984	19.2	1985	17.7	1986	17.7	1987	17.3	1988	16.9	1989	16.9	1990	9.9	1991	8.2	1992	8.2	1993	8.2
1983	18.2	1984	19.2	1985	17.7	1986	17.7	1987	17.3	1988	16.9	1989	16.9	1990	9.9	1991	8.2	1992	8.2	1993	8.2	1994	8.2
1984	19.2	1985	17.7	1986	17.7	1987	17.3	1988	16.9	1989	16.9	1990	9.9	1991	8.2	1992	8.2	1993	8.2	1994	8.2	1995	8.2
1985	0.0	1986	0.0	1987	0.0	1988	0.0	1989	0.0	1990	0.0	1991	0.0	1992	0.0	1993	0.0	1994	0.0	1995	0.0	1996	0.0

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F.

Emissions are based on the January 1 mileage accumulation figures given in Table 2.4.7

Continued on the next page.

H-277

TABLE 7.11C.2 (continued)
 BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE
 HEAVY DUTY DIESEL POWERED VEHICLES
 NOx

1997		1998		1999		2000		2003		January 1 of Calendar Year 2005		2008		2010		2012		2015		2018		2020	
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**
1973	34.5	1974	34.4	1975	34.3	1976	34.2	1979	24.0	1981	21.6	1984	19.2	1986	17.7	1988	16.9	1991	8.2	1994	8.2	1996	8.2
1974	34.3	1975	34.2	1976	34.1	1977	34.6	1980	21.6	1982	18.9	1985	17.7	1987	17.3	1989	16.9	1992	8.2	1995	8.2	1997	8.2
1975	34.1	1976	34.0	1977	34.4	1978	33.9	1981	21.6	1983	18.2	1986	17.7	1988	16.9	1990	9.9	1993	8.2	1996	8.2	1998	6.5
1976	33.9	1977	34.3	1978	33.8	1979	24.0	1982	18.9	1984	19.2	1987	17.3	1989	16.9	1991	8.2	1994	8.2	1997	8.2	1999	6.5
1977	34.2	1978	33.6	1979	24.0	1980	21.6	1983	18.2	1985	17.7	1988	16.9	1990	9.9	1992	8.2	1995	8.2	1998	6.5	2000	6.5
1978	33.5	1979	24.0	1980	21.6	1981	21.6	1984	19.2	1986	17.7	1989	16.9	1991	8.2	1993	8.2	1996	8.2	1999	6.5	2001	6.5
1979	24.0	1980	21.6	1981	21.6	1982	18.9	1985	17.7	1987	17.3	1990	9.9	1992	8.2	1994	8.2	1997	8.2	2000	6.5	2002	6.5
1980	21.6	1981	21.6	1982	18.9	1983	18.2	1986	17.7	1988	16.9	1991	8.2	1993	8.2	1995	8.2	1998	6.5	2001	6.5	2003	6.5
1981	21.6	1982	18.9	1983	18.2	1984	19.2	1987	17.3	1989	16.9	1992	8.2	1994	8.2	1996	8.2	1999	6.5	2002	6.5	2004	6.5
1982	18.9	1983	18.2	1984	19.2	1985	17.7	1988	16.9	1990	9.9	1993	8.2	1995	8.2	1997	8.2	2000	6.5	2003	6.5	2005	6.5
1983	18.2	1984	19.2	1985	17.7	1986	17.7	1989	16.9	1991	8.2	1994	8.2	1996	8.2	1998	6.5	2001	6.5	2004	6.5	2006	6.5
1984	19.2	1985	17.7	1986	17.7	1987	17.3	1990	9.9	1992	8.2	1995	8.2	1997	8.2	1999	6.5	2002	6.5	2005	6.5	2007	6.5
1985	17.7	1986	17.7	1987	17.3	1988	16.9	1991	8.2	1993	8.2	1996	8.2	1998	6.5	2000	6.5	2003	6.5	2006	6.5	2008	6.5
1986	17.7	1987	17.3	1988	16.9	1989	16.9	1992	8.2	1994	8.2	1997	8.2	1999	6.5	2001	6.5	2004	6.5	2007	6.5	2009	6.5
1987	17.3	1988	16.9	1989	16.9	1990	9.9	1993	8.2	1995	8.2	1998	6.5	2000	6.5	2002	6.5	2005	6.5	2008	6.5	2010	6.5
1988	16.9	1989	16.9	1990	9.9	1991	8.2	1994	8.2	1996	8.2	1999	6.5	2001	6.5	2003	6.5	2006	6.5	2009	6.5	2011	6.5
1989	16.9	1990	9.9	1991	8.2	1992	8.2	1995	8.2	1997	8.2	2000	6.5	2002	6.5	2004	6.5	2007	6.5	2010	6.5	2012	6.5
1990	9.9	1991	8.2	1992	8.2	1993	8.2	1996	8.2	1998	6.5	2001	6.5	2003	6.5	2005	6.5	2008	6.5	2011	6.5	2013	6.5
1991	8.2	1992	8.2	1993	8.2	1994	8.2	1997	8.2	1999	6.5	2002	6.5	2004	6.5	2006	6.5	2009	6.5	2012	6.5	2014	6.5
1992	8.2	1993	8.2	1994	8.2	1995	8.2	1998	6.5	2000	6.5	2003	6.5	2005	6.5	2007	6.5	2010	6.5	2013	6.5	2015	6.5
1993	8.2	1994	8.2	1995	8.2	1996	8.2	1999	6.5	2001	6.5	2004	6.5	2006	6.5	2008	6.5	2011	6.5	2014	6.5	2016	6.5
1994	8.2	1995	8.2	1996	8.2	1997	8.2	2000	6.5	2002	6.5	2005	6.5	2007	6.5	2009	6.5	2012	6.5	2015	6.5	2017	6.5
1995	8.2	1996	8.2	1997	8.2	1998	6.5	2001	6.5	2003	6.5	2006	6.5	2008	6.5	2010	6.5	2013	6.5	2016	6.5	2018	6.5
1996	8.2	1997	8.2	1998	6.5	1999	6.5	2002	6.5	2004	6.5	2007	6.5	2009	6.5	2011	6.5	2014	6.5	2017	6.5	2019	6.5
1997	0.0	1998	0.0	1999	0.0	2000	0.0	2003	0.0	2005	0.0	2008	0.0	2010	0.0	2012	0.0	2015	0.0	2018	0.0	2020	0.0

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F.

Emissions are based on the January 1 mileage accumulation figures given in Table 2.4.7