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TABLE 2.1A.1  
NONTAMPERED EXHAUST EMISSION RATES FOR  
LOW ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I

\* BER = ZML + (DR1 \* M), for mileage up to 50K miles (M <= 5)  
= ZML + DR1\*5.0 + DR2\*(M - 5.0), for mileage greater than 50K miles (M > 5)

Pol	Model Years	Zero Mile Emission Level	Det. Rate 1	Det. Rate 2	50,000 Mile Emission Level	100,000 Mile Emission Level
HC	Pre-1968	7.250	0.180	0.180	8.150	9.050
	1968-1969	4.430	0.250	0.250	5.680	6.930
	1970-1971	3.000	0.370	0.370	4.850	6.700
	1972-1974	3.360	0.170	0.170	4.210	5.060
	1975-1978	1.800	0.270	0.270	3.150	4.500
	1979-1980	0.870	0.280	0.280	2.270	3.670
	1981-1983	0.820	0.150	0.150	1.570	2.320
	1984	0.700	0.150	0.150	1.450	2.200
	1985	0.408	0.077	0.284	0.793	2.213
	1986	0.392	0.071	0.282	0.747	2.157
	1987	0.377	0.070	0.271	0.727	2.082
	1988	0.361	0.070	0.265	0.711	2.036
	1989	0.358	0.073	0.277	0.723	2.108
	1990	0.355	0.075	0.280	0.730	2.130
	1991	0.354	0.075	0.281	0.729	2.134
	1992	0.354	0.076	0.283	0.734	2.149
	1993	0.354	0.076	0.283	0.734	2.149
	1994	0.312	0.074	0.279	0.682	2.077
	1995	0.271	0.073	0.275	0.636	2.011
	1996	0.231	0.072	0.273	0.591	1.956
	1997	0.212	0.072	0.273	0.572	1.937
1998+	0.202	0.072	0.273	0.562	1.927	
CO	Pre-1968	78.270	2.250	2.250	89.520	100.770
	1968-1969	56.340	2.550	2.550	69.090	81.840
	1970-1971	42.170	3.130	3.130	57.820	73.470
	1972-1974	40.780	2.440	2.440	52.980	65.180
	1975-1978	24.550	2.590	2.590	37.500	50.450
	1979-1980	12.280	2.430	2.430	24.430	36.580
	1981-1983	12.580	1.460	1.460	19.880	27.180
	1984	9.430	1.460	1.460	16.730	24.030
	1985	5.074	1.331	3.547	11.729	29.464
	1986	4.642	1.240	3.554	10.842	28.612
	1987	4.358	1.242	3.403	10.568	27.583
	1988	4.024	1.289	3.286	10.469	26.899
	1989	3.948	1.343	3.423	10.663	27.778
	1990	3.824	1.423	3.407	10.939	27.974
	1991	3.800	1.439	3.419	10.995	28.090
	1992	3.800	1.448	3.434	11.040	28.210
	1993	3.800	1.448	3.434	11.040	28.210
	1994	3.682	1.448	3.434	10.922	28.092
	1995	3.565	1.448	3.434	10.805	27.975
	1996	3.071	1.448	3.434	10.311	27.481
	1997	2.636	1.448	3.434	9.876	27.046
1998+	2.419	1.448	3.434	9.659	26.829	
NOx	Pre-1968	3.440	0.000	0.000	3.440	3.440
	1968-1972	4.350	0.000	0.000	4.350	4.350
	1973-1974	2.870	0.040	0.040	3.070	3.270
	1975-1978	2.700	0.030	0.030	2.850	3.000
	1979-1980	1.770	0.060	0.060	2.070	2.370
	1981-1983	1.640	0.030	0.030	1.790	1.940
	1984	1.120	0.070	0.070	1.470	1.820
	1985	1.116	0.078	0.210	1.506	2.556
	1986	0.985	0.082	0.214	1.395	2.465
	1987	0.838	0.078	0.213	1.228	2.293
	1988	0.690	0.077	0.204	1.075	2.095
	1989	0.661	0.080	0.198	1.061	2.051
	1990	0.639	0.082	0.189	1.049	1.994
	1991	0.630	0.082	0.188	1.040	1.980
	1992	0.630	0.083	0.186	1.045	1.975
	1993	0.630	0.083	0.186	1.045	1.975
	1994	0.472	0.083	0.186	0.887	1.817
	1995	0.315	0.083	0.186	0.730	1.660
	1996	0.236	0.083	0.186	0.651	1.581
	1997	0.236	0.083	0.186	0.651	1.581
	1998+	0.236	0.083	0.186	0.651	1.581

\* WHERE : BER = Nontampered basic exhaust emission rates in grams/mile,  
ZML = Zero mile level in grams/mile,  
DR1 = Deterioration rate for <= 50K miles, in grams/mile/10K miles,  
DR2 = Deterioration rate for > 50K miles, in grams/mile/10K miles,  
M = Cumulative mileage / 10,000 miles.

DATE : JUNE 30, 1995

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TABLE 2.1A.2  
NONTAMPERED EXHAUST EMISSION RATES FOR  
HIGH ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I

\* BER = ZML + (DR1 \* M), for mileage up to 50K miles (M <= 5)  
= ZML + DR1\*5.0 + DR2\*(M - 5.0), for mileage greater then 50K miles (M > 5)

Pol	Model Years	Zero Mile Emission Level	Det. Rate 1	Det. Rate 2	50,000 Mile Emission Level	100,000 Mile Emission Level	
HC	Pre-1968	9.350	0.180	0.180	10.250	11.150	
	1968-1969	5.600	0.250	0.250	6.850	8.100	
	1970-1971	4.580	0.370	0.370	6.430	8.280	
	1972-1974	4.580	0.170	0.170	5.430	6.280	
	1975-1976	3.400	0.270	0.270	4.750	6.100	
	1977	1.600	0.270	0.270	2.950	4.300	
	1978	3.530	0.270	0.270	4.880	6.230	
	1979-1980	1.660	0.280	0.280	3.060	4.460	
	1981	1.660	0.280	0.150	3.060	3.810	
	1982-1983	1.070	0.150	0.150	1.820	2.570	
	1984	1.050	0.150	0.150	1.800	2.550	
	1985	0.509	0.077	0.284	0.894	2.314	
	1986	0.490	0.071	0.282	0.845	2.255	
	1987	0.471	0.070	0.271	0.821	2.176	
	1988	0.451	0.070	0.265	0.801	2.126	
	1989	0.447	0.073	0.277	0.812	2.197	
	1990	0.444	0.075	0.280	0.819	2.219	
	1991	0.442	0.075	0.281	0.817	2.222	
	1992-1993	0.442	0.076	0.283	0.822	2.237	
	1994	0.312	0.074	0.279	0.682	2.077	
	1995	0.271	0.073	0.275	0.636	2.011	
	1996	0.231	0.072	0.273	0.591	1.956	
	1997	0.212	0.072	0.273	0.572	1.937	
	1998+	0.202	0.072	0.273	0.562	1.927	
	CO	Pre-1968	117.700	2.250	2.250	128.950	140.200
		1968-1969	85.540	2.250	2.250	96.790	108.040
		1970-1971	79.640	3.130	3.130	95.290	110.940
		1972-1974	75.630	2.440	2.440	87.830	100.030
		1975-1976	58.010	2.590	2.590	70.960	83.910
		1977	22.860	2.590	2.590	35.810	48.760
1978		53.570	2.590	2.590	66.520	79.470	
1979-1980		44.250	2.430	2.430	56.400	68.550	
1981		44.250	2.430	1.460	56.400	63.700	
1982-1983		30.160	1.460	1.460	37.460	44.760	
1984		23.350	1.460	1.460	30.650	37.950	
1985		7.103	1.331	3.547	13.758	31.493	
1986		6.498	1.240	3.554	12.698	30.468	
1987		6.101	1.242	3.403	12.311	29.326	
1988		5.633	1.289	3.286	12.078	28.508	
1989		5.526	1.343	3.423	12.241	29.356	
1990		5.352	1.423	3.407	12.467	29.502	
1991		5.318	1.439	3.419	12.513	29.608	
1992-1993		5.318	1.448	3.434	12.558	29.728	
1994		3.682	1.448	3.434	10.922	28.092	
1995		3.565	1.448	3.434	10.805	27.975	
1996		3.071	1.448	3.434	10.311	27.481	
1997		2.636	1.448	3.434	9.876	27.046	
1998+		2.419	1.448	3.434	9.659	26.829	
NOx		Pre-1968	1.960	0.000	0.000	1.960	1.960
		1968-1972	2.910	0.000	0.000	2.910	2.910
		1973-1974	1.910	0.040	0.040	2.110	2.310
		1975-1976	1.880	0.030	0.030	2.030	2.180
		1977	2.250	0.030	0.030	2.400	2.550
		1978	1.880	0.030	0.030	2.030	2.180
	1979-1980	0.970	0.060	0.060	1.270	1.570	
	1981	0.970	0.060	0.030	1.270	1.420	
	1982-1983	1.460	0.030	0.030	1.610	1.760	
	1984	1.220	0.070	0.070	1.570	1.920	
	1985	1.116	0.078	0.210	1.506	2.556	
	1986	0.985	0.082	0.214	1.395	2.465	
	1987	0.838	0.078	0.213	1.228	2.293	
	1988	0.690	0.077	0.204	1.075	2.095	
	1989	0.661	0.080	0.198	1.061	2.051	
	1990	0.639	0.082	0.189	1.049	1.994	
	1991	0.630	0.082	0.188	1.040	1.980	
	1992-1993	0.630	0.083	0.186	1.045	1.975	
	1994	0.472	0.083	0.186	0.887	1.817	
	1995	0.315	0.083	0.186	0.730	1.660	
	1996	0.236	0.083	0.186	0.651	1.581	
	1997	0.236	0.083	0.186	0.651	1.581	
	1998+	0.236	0.083	0.186	0.651	1.581	

\* WHERE : BER = Nontampered basic exhaust emission rates in grams/mile,  
ZML = Zero mile level in grams/mile,  
DR1 = Deterioration rate for <= 50K miles, in grams/mile/10K miles,  
DR2 = Deterioration rate for > 50K miles, in grams/mile/10K miles,  
M = Cumulative mileage / 10,000 miles.

DATE : JUNE 30, 1995

TABLE 2.1B.1

DATE : JUNE 30, 1995

EXHAUST EMISSION RATES FOR  
LOW ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I  
AT VARIOUS MILEAGE LEVELS  
(ADJUSTED FOR INDUSTRY AVERAGE FUEL. RATES INCLUDE TAMPERING)

Poll	Model Years	Emission Rate (Grams/Mile)						
		0K	25K	50K	75K	100K	125K	150K
HC	Pre-1968	7.250	7.700	8.150	8.600	9.050	9.500	9.950
	1968-1969	4.432	5.071	5.709	6.337	6.965	7.593	8.218
	1970-1971	3.002	3.940	4.878	5.806	6.734	7.662	8.588
	1972	3.364	3.816	4.267	4.698	5.129	5.560	5.986
	1973-1974	3.373	3.878	4.382	4.825	5.267	5.710	6.138
	1975	2.439	3.569	4.709	5.866	7.022	8.180	9.013
	1976	2.537	3.727	4.929	6.162	7.395	8.629	9.486
	1977-1978	2.487	3.634	4.788	5.988	7.187	8.388	9.233
	1979-1980	1.490	2.722	3.968	5.225	6.481	7.739	8.624
	1981	0.983	1.700	2.468	3.124	3.780	4.439	4.918
	1982	0.983	1.695	2.465	3.125	3.786	4.448	4.928
	1983	0.981	1.684	2.441	3.093	3.745	4.398	4.877
	1984	0.819	1.328	1.842	2.445	3.055	3.668	4.138
	1985	0.481	0.776	1.075	2.059	3.049	4.043	4.899
	1986	0.462	0.708	0.957	1.914	2.871	3.827	4.672
	1987	0.443	0.678	0.916	1.813	2.711	3.609	4.416
	1988	0.425	0.659	0.896	1.775	2.654	3.533	4.323
	1989	0.421	0.664	0.909	1.823	2.737	3.651	4.475
	1990	0.418	0.667	0.918	1.840	2.763	3.686	4.518
	1991	0.417	0.666	0.916	1.842	2.768	3.693	4.529
	1992-1993	0.417	0.669	0.922	1.854	2.785	3.716	4.558
	1994	0.368	0.614	0.862	1.782	2.702	3.621	4.451
	1995	0.321	0.564	0.809	1.717	2.625	3.533	4.352
	1996	0.274	0.515	0.757	1.659	2.561	3.464	4.276
	1997	0.252	0.493	0.735	1.637	2.540	3.442	4.254
	1998+	0.241	0.481	0.723	1.626	2.528	3.430	4.243
CO	Pre-1968	78.270	83.895	89.520	95.145	100.770	106.395	112.020
	1968-1969	56.396	63.104	69.813	76.262	82.710	89.159	95.549
	1970-1971	42.228	50.403	58.578	66.480	74.382	82.284	90.125
	1972	40.897	47.699	54.501	60.756	67.010	73.265	79.396
	1973-1974	41.131	49.337	57.542	64.107	70.671	77.236	83.429
	1975	29.272	40.564	52.128	62.087	72.047	82.041	89.597
	1976	29.952	41.730	53.782	64.293	74.804	85.349	93.062
	1977-1978	29.599	40.836	52.254	62.604	72.955	83.328	90.963
	1979-1980	16.841	28.490	40.505	50.470	60.437	70.449	77.734
	1981	13.847	20.199	27.320	33.715	40.107	46.510	50.966
	1982	13.843	20.160	27.351	33.886	40.418	46.958	51.442
	1983	13.834	20.025	27.047	33.450	39.851	46.259	50.715
	1984	10.320	14.981	19.722	25.306	30.962	36.627	40.934
	1985	5.581	9.852	14.198	25.359	36.588	47.825	57.784
	1986	5.110	8.959	12.869	23.886	34.904	45.922	55.851
	1987	4.781	8.496	12.256	22.458	32.660	42.862	52.300
	1988	4.418	8.245	12.112	21.968	31.823	41.679	50.794
	1989	4.335	8.309	12.323	22.551	32.779	43.007	52.494
	1990	4.201	8.391	12.623	22.807	32.992	43.176	52.620
	1991	4.175	8.409	12.684	22.901	33.118	43.335	52.811
	1992-1993	4.175	8.433	12.733	22.991	33.248	43.506	53.023
	1994	4.046	8.305	12.604	22.862	33.120	43.378	52.895
	1995	3.919	8.178	12.477	22.735	32.993	43.251	52.768
	1996	3.382	7.641	11.940	22.198	32.456	42.714	52.231
	1997	2.909	7.168	11.467	21.725	31.983	42.241	51.758
	1998+	2.674	6.932	11.232	21.489	31.747	42.005	51.522
NOx	Pre-1968	3.440	3.440	3.440	3.440	3.440	3.440	3.440
	1968-1972	4.350	4.350	4.350	4.350	4.350	4.350	4.350
	1973	2.870	3.012	3.334	3.436	3.537	3.639	3.739
	1974	2.870	3.017	3.367	3.469	3.570	3.672	3.773
	1975-1978	2.700	2.904	3.669	3.749	3.829	3.909	3.985
	1979-1980	1.770	2.062	2.969	3.125	3.280	3.435	3.587
	1981	1.653	1.847	2.096	2.269	2.441	2.614	2.709
	1982	1.666	1.863	2.115	2.290	2.465	2.639	2.735
	1983	1.693	1.896	2.156	2.335	2.515	2.695	2.793
	1984	1.174	1.391	1.613	1.878	2.143	2.408	2.608
	1985	1.188	1.431	1.679	2.324	2.969	3.615	4.191
	1986	1.065	1.323	1.587	2.259	2.932	3.604	4.201
	1987	0.969	1.241	1.519	2.268	3.017	3.766	4.406
	1988	0.798	1.050	1.305	1.985	2.665	3.345	3.952
	1989	0.765	1.025	1.289	1.952	2.615	3.277	3.866
	1990	0.740	1.006	1.275	1.912	2.549	3.186	3.749
	1991	0.729	0.995	1.265	1.899	2.533	3.167	3.727
	1992-1993	0.729	0.998	1.270	1.899	2.527	3.155	3.710
	1994	0.547	0.816	1.088	1.717	2.345	2.973	3.528
	1995	0.366	0.635	0.907	1.536	2.164	2.792	3.347
	1996+	0.275	0.544	0.816	1.445	2.073	2.701	3.256

TABLE 2.1B.2

DATE : JUNE 30, 1995

EXHAUST EMISSION RATES FOR  
HIGH ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I  
AT VARIOUS MILEAGE LEVELS  
(ADJUSTED FOR INDUSTRY AVERAGE FUEL. RATES INCLUDE TAMPERING)

Poll	Model Years	Emission Rate (Grams/Mile)							
		0K	25K	50K	75K	100K	125K	150K	
HC	Pre-1968	9.350	9.800	10.250	10.700	11.150	11.600	12.050	
	1968-1969	5.602	6.241	6.879	7.507	8.135	8.763	9.388	
	1970-1971	4.582	5.520	6.458	7.386	8.314	9.242	10.168	
	1972	4.584	5.036	5.487	5.918	6.349	6.780	7.206	
	1973-1974	4.593	5.098	5.602	6.045	6.487	6.930	7.358	
	1975	4.216	5.345	6.485	7.642	8.799	9.956	10.790	
	1976	4.338	5.528	6.730	7.963	9.196	10.431	11.288	
	1977	2.264	3.410	4.564	5.764	6.964	8.164	9.009	
	1978	4.422	5.568	6.722	7.922	9.121	10.322	11.167	
	1979-1980	2.380	3.611	4.858	6.114	7.370	8.628	9.513	
	1981	1.955	3.048	4.193	4.849	5.505	6.163	6.642	
	1982	1.272	1.985	2.754	3.414	4.075	4.738	5.218	
	1983	1.271	1.973	2.730	3.382	4.034	4.688	5.166	
	1984	1.224	1.734	2.247	2.850	3.460	4.073	4.543	
	1985	0.598	0.893	1.192	2.175	3.166	4.160	5.016	
	1986	0.576	0.822	1.071	2.027	2.984	3.941	4.785	
	1987	0.552	0.787	1.024	1.922	2.820	3.718	4.525	
	1988	0.529	0.763	1.000	1.879	2.758	3.638	4.427	
	1989	0.524	0.767	1.012	1.926	2.840	3.754	4.578	
	1990	0.521	0.770	1.021	1.943	2.866	3.789	4.621	
	1991	0.518	0.767	1.018	1.944	2.869	3.795	4.631	
	1992-1993	0.518	0.770	1.024	1.955	2.887	3.818	4.659	
	1994	0.368	0.614	0.862	1.782	2.702	3.621	4.451	
	1995	0.321	0.564	0.809	1.717	2.625	3.533	4.352	
	1996	0.274	0.515	0.757	1.659	2.561	3.464	4.276	
	1997	0.252	0.493	0.735	1.637	2.540	3.442	4.254	
	1998+	0.241	0.481	0.723	1.626	2.528	3.430	4.243	
	CO	Pre-1968	117.700	123.325	128.950	134.575	140.200	145.825	151.450
		1968-1969	85.596	91.554	97.513	103.212	108.910	114.609	120.249
		1970-1971	79.698	87.873	96.048	103.950	111.852	119.754	127.595
		1972	75.747	82.549	89.351	95.606	101.860	108.115	114.246
1973-1974		75.981	84.187	92.392	98.957	105.521	112.086	118.279	
1975		64.769	76.061	87.624	97.583	107.544	117.537	125.094	
1976		65.740	77.518	89.570	100.080	110.592	121.137	128.850	
1977		27.799	39.035	50.454	60.804	71.155	81.528	89.163	
1978		60.512	71.748	83.166	93.517	103.868	114.241	121.876	
1979-1980		51.035	62.684	74.699	84.664	94.631	104.643	111.928	
1981		48.271	57.259	67.016	73.410	79.803	86.206	90.662	
1982		32.952	39.269	46.459	52.994	59.527	66.067	70.551	
1983		32.943	39.134	46.156	52.559	58.959	65.367	69.824	
1984		25.450	30.112	34.852	40.437	46.093	51.758	56.065	
1985		7.786	12.057	16.403	27.565	38.793	50.031	59.989	
1986		7.127	10.976	14.886	25.904	36.921	47.939	57.869	
1987		6.676	10.391	14.151	24.353	34.554	44.756	54.195	
1988		6.167	9.994	13.861	23.717	33.572	43.428	52.543	
1989		6.051	10.024	14.038	24.266	34.494	44.722	54.209	
1990		5.862	10.052	14.284	24.468	34.653	44.837	54.281	
1991		5.825	10.059	14.334	24.551	34.768	44.985	54.461	
1992-1993		5.825	10.083	14.383	24.641	34.898	45.156	54.673	
1994		4.046	8.305	12.604	22.862	33.120	43.378	52.895	
1995		3.919	8.178	12.477	22.735	32.993	43.251	52.768	
1996		3.382	7.641	11.940	22.198	32.456	42.714	52.231	
1997		2.909	7.168	11.467	21.725	31.983	42.241	51.758	
1998+		2.674	6.932	11.232	21.489	31.747	42.005	51.522	
NOx		Pre-1968	1.960	1.960	1.960	1.960	1.960	1.960	1.960
		1968-1972	2.910	2.910	2.910	2.910	2.910	2.910	2.910
		1973	1.910	2.052	2.374	2.476	2.577	2.679	2.779
		1974	1.910	2.057	2.407	2.509	2.610	2.712	2.813
	1975-1976	1.880	2.084	2.849	2.929	3.009	3.089	3.165	
	1977	2.250	2.454	3.219	3.299	3.379	3.459	3.535	
	1978	1.880	2.084	2.849	2.929	3.009	3.089	3.165	
	1979-1980	0.970	1.262	2.169	2.325	2.480	2.635	2.787	
	1981	0.978	1.248	1.572	1.744	1.917	2.089	2.184	
	1982	1.483	1.680	1.932	2.107	2.282	2.456	2.552	
	1983	1.507	1.711	1.970	2.150	2.329	2.509	2.607	
	1984	1.279	1.496	1.718	1.983	2.248	2.513	2.713	
	1985	1.188	1.431	1.679	2.324	2.969	3.615	4.191	
	1986	1.065	1.323	1.587	2.259	2.932	3.604	4.201	
	1987	0.969	1.241	1.519	2.268	3.017	3.766	4.406	
	1988	0.798	1.050	1.305	1.985	2.665	3.345	3.952	
	1989	0.765	1.025	1.289	1.952	2.615	3.277	3.866	
	1990	0.740	1.006	1.275	1.912	2.549	3.186	3.749	
	1991	0.729	0.995	1.265	1.899	2.533	3.167	3.727	
	1992-1993	0.729	0.998	1.270	1.899	2.527	3.155	3.710	
	1994	0.547	0.816	1.088	1.717	2.345	2.973	3.528	
	1995	0.366	0.635	0.907	1.536	2.164	2.792	3.347	
	1996+	0.275	0.544	0.816	1.445	2.073	2.701	3.256	

TABLE 2.1C

ASSUMED COMPLIANCE RATE OF EMISSION STANDARDS FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I  
UNDER THE CALIFORNIA LEV PROGRAM

YEAR	TIER1	TLEV interm.	TLEV	LEV interm.	LEV	ULEV interm.	ULEV	ZEV
LIGHT SUBCATEGORIES								
1994	0.90	0.10	0.00	0.00	0.00	0.00	0.00	0.00
1995	0.85	0.15	0.00	0.00	0.00	0.00	0.00	0.00
1996	0.80	0.00	0.20	0.00	0.00	0.00	0.00	0.00
1997	0.73	0.00	0.00	0.25	0.00	0.02	0.00	0.00
1998	0.48	0.00	0.00	0.48	0.00	0.02	0.00	0.02
1999	0.23	0.00	0.00	0.00	0.73	0.00	0.02	0.02
2000	0.00	0.00	0.00	0.00	0.96	0.00	0.02	0.02
2001	0.00	0.00	0.00	0.00	0.90	0.00	0.05	0.05
2002	0.00	0.00	0.00	0.00	0.85	0.00	0.10	0.05
2003	0.00	0.00	0.00	0.00	0.75	0.00	0.15	0.10
2004	0.00	0.00	0.00	0.00	0.75	0.00	0.15	0.10
2005+	0.00	0.00	0.00	0.00	0.75	0.00	0.15	0.10
HEAVY SUBCATEGORIES								
1994	0.90	0.10	0.00	0.00	0.00	0.00	0.00	0.00
1995	0.85	0.15	0.00	0.00	0.00	0.00	0.00	0.00
1996	0.80	0.00	0.20	0.00	0.00	0.00	0.00	0.00
1997	0.73	0.00	0.00	0.25	0.00	0.02	0.00	0.00
1998	0.48	0.00	0.00	0.50	0.00	0.00	0.02	0.00
1999	0.23	0.00	0.00	0.00	0.75	0.00	0.02	0.00
2000	0.00	0.00	0.00	0.00	0.98	0.00	0.02	0.00
2001	0.00	0.00	0.00	0.00	0.95	0.00	0.05	0.00
2002	0.00	0.00	0.00	0.00	0.90	0.00	0.10	0.00
2003	0.00	0.00	0.00	0.00	0.85	0.00	0.15	0.00
2004	0.00	0.00	0.00	0.00	0.85	0.00	0.15	0.00
2005+	0.00	0.00	0.00	0.00	0.85	0.00	0.15	0.00

DATE : JUNE 30, 1995

TABLE 2.1D

CALIFORNIA LOW-EMITTING VEHICLES EMISSION RATES FOR  
 LIGHT DUTY GASOLINE POWERED TRUCKS I  
 (MAXIMUM BENEFIT\*)

POL	EMISSION LEVEL	ZERO MILE	DET. RATE 1	DET. RATE 2
LIGHT SUBCATEGORIES				
HC	TLEV inter.	0.1340	0.0175	0.0175
	TLEV	0.0890	0.0116	0.0116
	LEV inter.	0.0750	0.0098	0.0098
	LEV	0.0560	0.0073	0.0073
	ULEV inter.	0.0430	0.0057	0.0055
	ULEV	0.0300	0.0039	0.0039
CO	TLEV inter.	2.4820	0.2896	0.2896
	TLEV	2.4820	0.2896	0.2896
	LEV inter.	0.6200	0.4758	0.4758
	LEV	0.6200	0.4758	0.4758
	ULEV inter.	0.6200	0.4758	0.4758
	ULEV	0.6200	0.4758	0.4758
NOx	TLEV inter.	0.1740	0.0433	0.0433
	TLEV	0.1740	0.0433	0.0433
	LEV inter.	0.1310	0.0325	0.0325
	LEV	0.0870	0.0217	0.0217
	ULEV inter.	0.1310	0.0325	0.0325
	ULEV	0.0870	0.0217	0.0217
HEAVY SUBCATEGORIES				
HC	TLEV inter.	0.1690	0.0221	0.0221
	TLEV	0.1140	0.0149	0.0149
	LEV inter.	0.0960	0.0125	0.0125
	LEV	0.0750	0.0098	0.0098
	ULEV inter.	0.0560	0.0073	0.0073
	ULEV	0.0370	0.0049	0.0049
CO	TLEV inter.	3.2110	0.3748	0.3748
	TLEV	3.2110	0.3748	0.3748
	LEV inter.	0.8030	0.6157	0.6157
	LEV	0.8030	0.6157	0.6157
	ULEV inter.	0.8030	0.6157	0.6157
	ULEV	0.8030	0.6157	0.6157
NOx	TLEV inter.	0.3050	0.0758	0.0758
	TLEV	0.3050	0.0758	0.0758
	LEV inter.	0.2180	0.0542	0.0542
	LEV	0.1740	0.0433	0.0433
	ULEV inter.	0.2180	0.0542	0.0542
	ULEV	0.1740	0.0433	0.0433

\* These emission rates assume that a "maximum benefit" inspection and maintenance (I/M) program is in place. The maximum benefit I/M program is one designed to ensure compliance for the fleet, on average, with its applicable emission standards at the end of its useful life.

DATE : JUNE 30, 1995

TABLE 2.1E

CALIFORNIA LOW-EMITTING VEHICLES EMISSION RATES FOR  
 LIGHT DUTY GASOLINE POWERED TRUCKS I  
 (no I/M program)

POL	EMISSION LEVEL	ZERO MILE	DET. RATE 1	DET. RATE 2
LIGHT SUBCATEGORIES				
HC	TLEV inter.	0.1340	0.0638	0.2648
	TLEV	0.0890	0.0638	0.2648
	LEV inter.	0.0750	0.0638	0.2648
	LEV	0.0560	0.0638	0.2648
	ULEV inter.	0.0430	0.0638	0.2648
	ULEV	0.0300	0.0638	0.2648
CO	TLEV inter.	2.4820	1.4480	3.4340
	TLEV	2.4820	1.4480	3.4340
	LEV inter.	0.6200	1.4480	3.4340
	LEV	0.6200	1.4480	3.4340
	ULEV inter.	0.6200	1.4480	3.4340
	ULEV	0.6200	1.4480	3.4340
NOx	TLEV inter.	0.1740	0.0830	0.1860
	TLEV	0.1740	0.0830	0.1860
	LEV inter.	0.1310	0.0830	0.1860
	LEV	0.0870	0.0830	0.1860
	ULEV inter.	0.1310	0.0830	0.1860
	ULEV	0.0870	0.0830	0.1860
HEAVY SUBCATEGORIES				
HC	TLEV inter.	0.1690	0.0638	0.2648
	TLEV	0.1140	0.0638	0.2648
	LEV inter.	0.0960	0.0638	0.2648
	LEV	0.0750	0.0638	0.2648
	ULEV inter.	0.0560	0.0638	0.2648
	ULEV	0.0370	0.0638	0.2648
CO	TLEV inter.	3.2110	1.4480	3.4340
	TLEV	3.2110	1.4480	3.4340
	LEV inter.	0.8030	1.4480	3.4340
	LEV	0.8030	1.4480	3.4340
	ULEV inter.	0.8030	1.4480	3.4340
	ULEV	0.8030	1.4480	3.4340
NOx	TLEV inter.	0.3050	0.0830	0.1860
	TLEV	0.3050	0.0830	0.1860
	LEV inter.	0.2180	0.0830	0.1860
	LEV	0.1740	0.0830	0.1860
	ULEV inter.	0.2180	0.0830	0.1860
	ULEV	0.1740	0.0830	0.1860

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TABLE 2.2A.1

NONTAMPERED CRANKCASE EMISSIONS  
FROM VEHICLES WITH OPERATING EVAPORATIVE SYSTEMS\*  
FOR LOW ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I

Model Years	Crankcase (Gm/Mile)
Pre-1963	4.10
1963-1967	0.80
1968+	0.00

\* Vehicles with measurable purge capacity and no major vapor leaks  
in their fuel systems.

DATE : JUNE 30, 1995



TABLE 2.2A.2

NONTAMPERED CRANKCASE EMISSIONS  
FROM VEHICLES WITH OPERATING EVAPORATIVE SYSTEMS\*  
FOR HIGH ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I

Model Years	Crankcase (Gm/Mile)
Pre-1963	5.29
1963-1967	1.03
1968+	0.00

\* Vehicles with measurable purge capacity and no major vapor leaks  
in their fuel systems.

DATE : JUNE 30, 1995

TABLE 2.2B.1

TAMPERING OFFSETS FOR TOTAL CRANKCASE EMISSIONS  
FOR LOW ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I  
AT VARIOUS MILEAGE INTERVALS

Model Years	Tampering Offset (Grams/Mile)*						
	0K	25K	50K	75K	100K	125K	150K
Pre-1968	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1968-1977	0.000	0.023	0.047	0.070	0.093	0.117	0.121
1978-1979	0.000	0.023	0.046	0.070	0.093	0.116	0.121
1980	0.000	0.023	0.045	0.068	0.091	0.113	0.118
1981+	0.018	0.019	0.020	0.021	0.022	0.024	0.024

\* Based on averages of 4.19 trips per day and 28.48 miles per day.

DATE : JUNE 30, 1995

TABLE 2.2B.2

TAMPERING OFFSETS FOR TOTAL CRANKCASE EMISSIONS  
FOR HIGH ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I  
AT VARIOUS MILEAGE INTERVALS

Model Years	Tampering Offset (Grams/Mile)*						
	0K	25K	50K	75K	100K	125K	150K
Pre-1968	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1968-1977	0.000	0.023	0.047	0.070	0.093	0.117	0.121
1978-1979	0.000	0.023	0.046	0.070	0.093	0.116	0.121
1980	0.000	0.023	0.045	0.068	0.091	0.113	0.118
1981+	0.018	0.019	0.020	0.021	0.022	0.024	0.024

\* Based on averages of 4.19 trips per day and 28.48 miles per day.

DATE : JUNE 30, 1995

TABLE 2.2C  
 RUNNING LOSS EMISSIONS FOR  
 LIGHT DUTY GASOLINE POWERED TRUCKS I

Model Years	Fuel RVP (psi)	Emission Rate (Grams/Mile)											
		80.0F		87.0F		95.0F		105.0F		105.0F			
		7.1 mph	19.6 mph	47.9 mph	7.1 mph	19.6 mph	47.9 mph	7.1 mph	19.6 mph	47.9 mph	7.1 mph	19.6 mph	47.9 mph
VEHICLES WITH OPERATING EVAPORATIVE SYSTEMS*													
Pre-1971	7.0	1.17	0.42	0.17	2.17	0.78	0.32	5.39	1.95	0.80	10.07	3.65	1.49
	9.0	4.76	1.73	0.71	7.87	2.85	1.17	12.79	4.63	1.90	25.80	9.35	3.82
	10.4	8.55	3.10	1.27	13.35	4.84	1.98	23.70	8.58	3.51	38.28	13.87	5.67
	11.7	13.62	4.93	2.02	22.64	8.20	3.36	34.05	12.33	5.05	50.06	18.14	7.42
1971-1980	7.0	0.34	0.08	0.02	0.42	0.09	0.02	0.45	0.15	0.02	0.98	0.27	0.02
	9.0	0.92	0.11	0.02	0.73	0.10	0.02	0.63	0.10	0.02	2.36	0.33	0.02
	10.4	0.81	0.15	0.02	1.16	0.19	0.02	1.73	0.26	0.02	1.88	0.28	0.03
	11.7	1.07	0.11	0.02	2.27	0.52	0.03	3.45	0.60	0.04	6.62	0.86	0.04
1981+	7.0	0.07	0.02	0.00	0.08	0.02	0.00	0.09	0.03	0.00	0.20	0.05	0.00
	9.0	0.18	0.02	0.00	0.15	0.02	0.00	0.13	0.02	0.00	0.47	0.07	0.00
	10.4	0.16	0.03	0.00	0.23	0.04	0.00	0.35	0.05	0.00	0.38	0.06	0.01
	11.7	0.22	0.02	0.00	0.45	0.10	0.01	0.69	0.12	0.01	1.32	0.17	0.01
VEHICLES FAILING EITHER PURGE OR PRESSURE TEST													
Pre-1971	7.0	1.17	0.42	0.17	2.17	0.78	0.32	5.39	1.95	0.80	10.07	3.65	1.49
	9.0	4.76	1.73	0.71	7.87	2.85	1.17	12.79	4.63	1.90	25.80	9.35	3.82
	10.4	8.55	3.10	1.27	13.35	4.84	1.98	23.70	8.58	3.51	38.28	13.87	5.67
	11.7	13.62	4.93	2.02	22.64	8.20	3.36	34.05	12.33	5.05	50.06	18.14	7.42
1971-1980	7.0	1.18	0.43	0.17	2.17	0.79	0.32	5.40	1.96	0.80	10.08	3.65	1.49
	9.0	4.77	1.73	0.71	7.87	2.85	1.17	12.79	4.63	1.90	25.81	9.35	3.83
	10.4	8.56	3.10	1.27	13.36	4.84	1.98	23.71	8.59	3.51	38.29	13.87	5.67
	11.7	13.62	4.93	2.02	22.65	8.20	3.36	34.05	12.34	5.05	50.07	18.14	7.42
1981+	7.0	1.00	0.36	0.15	1.69	0.61	0.25	3.78	1.37	0.56	7.05	2.55	1.05
	9.0	4.05	1.47	0.60	6.14	2.22	0.91	8.96	3.24	1.33	18.07	6.54	2.68
	10.4	7.27	2.63	1.08	10.42	3.77	1.54	16.59	6.01	2.46	26.80	9.71	3.97
	11.7	11.58	4.19	1.72	17.67	6.40	2.62	23.84	8.63	3.53	35.05	12.70	5.20

\* Vehicles with measurable purge capacity and no major vapor leaks in their fuel systems.

TABLE 2.2D

REFUELING EMISSIONS\* FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I

Model Years	Fuel Economy (miles/gal)	Uncontrolled (grams/mile)	With Onboard (grams/mile)
Pre-1973	10.64	0.362	0.362
1973-1974	10.45	0.368	0.368
1975	11.45	0.336	0.336
1976	12.05	0.320	0.320
1977	13.09	0.294	0.294
1978	12.78	0.301	0.301
1979	12.31	0.313	0.313
1980	15.30	0.252	0.252
1981	16.43	0.234	0.234
1982	16.77	0.230	0.230
1983	17.31	0.222	0.222
1984	17.02	0.226	0.226
1985	17.16	0.224	0.224
1986	17.88	0.215	0.215
1987	18.05	0.213	0.213
1988	17.58	0.219	0.219
1989	17.28	0.223	0.223
1990	17.29	0.223	0.223
1991	17.10	0.225	0.225
1992	17.05	0.226	0.226
1993	16.99	0.227	0.227
1994	16.93	0.227	0.227
1995-1998	16.87	0.228	0.228
1999-2000	16.86	0.228	0.228
2001	16.86	0.228	0.144
2002	16.86	0.228	0.059
2003+	16.86	0.228	0.017

\* Refueling Emissions (g/mi) = [Displacement (g/gal)  
+ Spillage (g/gal)] / Fuel Economy (mi/gal).

Fuel volatility of 9.0 RVP is assumed.  
The algorithm for Onboard effects was taken from MOBILE5b  
and reflects the phase-in included in the Final Rule.

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TABLE 2.4A

REGISTRATION MIX AND  
MILEAGE ACCUMULATION RATES FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I

Model Year Index**	July 1 Registration Mix*	Mileage Accumulation Rate (per truck *)	Jan 1 Registration Mix	Jan 1 Mileage Accumulation Rate*** (fleet)	Jan 1 Mileage Accumulation (fleet)
1	0.063	15442.	0.022	15442.	1930.
2	0.084	14508.	0.088	15209.	11552.
3	0.084	13631.	0.088	14289.	26296.
4	0.084	12807.	0.088	13425.	40148.
5	0.084	12032.	0.088	12613.	53162.
6	0.069	11305.	0.072	11850.	65389.
7	0.059	10621.	0.062	11134.	76877.
8	0.044	9979.	0.046	10461.	87671.
9	0.036	9376.	0.038	9828.	97811.
10	0.031	8809.	0.032	9234.	107339.
11	0.030	8276.	0.031	8676.	116291.
12	0.053	7776.	0.055	8151.	124701.
13	0.047	7306.	0.049	7659.	132603.
14	0.046	6864.	0.048	7195.	140028.
15	0.036	6449.	0.037	6760.	147003.
16	0.028	6059.	0.029	6352.	153557.
17	0.017	5693.	0.017	5968.	159714.
18	0.022	5348.	0.022	5607.	165499.
19	0.017	5025.	0.016	5267.	170934.
20	0.014	4721.	0.014	4949.	176040.
21	0.009	4436.	0.009	4650.	180838.
22	0.008	4168.	0.008	4369.	185346.
23	0.008	3916.	0.008	4105.	189581.
24	0.005	3679.	0.005	3857.	193561.
25+	0.025	3456.	0.026	3623.	197299.

\* Default information that may be altered by the MOBILE5a user with information about the local area.

\*\* 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: JANMAR(1) = MAR(1) and,  

$$\text{JANMAR}(\text{MYI}) = .25 * \text{MAR}(\text{MYI}) + .75 * \text{MAR}(\text{MYI}-1), \text{MYI} = 2, \dots, 25+.$$

DATE : JUNE 30, 1995

TABLE 2.4C

TRIPS PER DAY AND MILES PER DAY FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I

Model Year Index*	Trips per Day	Miles per Day
1	4.66	42.31
2	4.60	41.67
3	4.54	39.15
4	4.48	36.78
5	4.43	34.56
6	4.37	32.47
7	4.31	30.50
8	4.25	28.66
9	4.19	26.93
10	4.13	25.30
11	4.08	23.77
12	4.02	22.33
13	3.96	20.98
14	3.90	19.71
15	3.84	18.52
16	3.78	17.40
17	3.72	16.35
18	3.67	15.36
19	3.61	14.43
20	3.55	13.56
21	3.49	12.74
22	3.43	11.97
23	3.37	11.25
24	3.31	10.57
25+	3.26	9.93

\* 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.

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TABLE 2.5

EXAMPLE TRAVEL WEIGHTING FRACTION CALCULATION FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I  
JANUARY 1, 1995

Model Years	(A) LDT1 Fleet Registration	(B) Sales Fraction	(C=A*B/DAF) LDGT1 Registration	(D) Annual Mileage Accrual Rate	(C*D/TFNORM) Travel Fractions		
1995	0.063	0.998	0.063	0.022	15442.	337.1	0.032
1994	0.084	0.998	0.084	0.088	15209.	1331.9	0.128
1993	0.084	0.998	0.084	0.088	14289.	1251.4	0.120
1992	0.084	0.998	0.084	0.088	13425.	1178.1	0.113
1991	0.084	0.998	0.084	0.088	12613.	1106.9	0.106
1990	0.069	0.998	0.069	0.072	11850.	855.9	0.082
1989	0.059	0.998	0.059	0.062	11134.	687.6	0.066
1988	0.044	0.998	0.044	0.046	10461.	481.8	0.046
1987	0.036	0.997	0.036	0.038	9828.	370.4	0.036
1986	0.031	0.993	0.031	0.032	9234.	299.7	0.029
1985	0.030	0.989	0.030	0.031	8676.	272.5	0.026
1984	0.053	0.977	0.052	0.055	8151.	452.2	0.044
1983	0.047	0.953	0.045	0.049	7659.	376.8	0.036
1982	0.046	0.907	0.042	0.048	7195.	346.1	0.033
1981	0.036	0.944	0.034	0.037	6760.	253.5	0.024
1980	0.028	0.965	0.027	0.029	6352.	184.5	0.018
1979	0.017	0.982	0.017	0.017	5968.	104.0	0.010
1978	0.022	0.992	0.022	0.022	5607.	123.3	0.012
1977	0.017	1.000	0.017	0.016	5267.	85.2	0.008
1976	0.014	1.000	0.014	0.014	4949.	68.6	0.007
1975	0.009	1.000	0.009	0.009	4650.	42.4	0.004
1974	0.008	1.000	0.008	0.008	4369.	36.0	0.003
1973	0.008	1.000	0.008	0.008	4105.	34.2	0.003
1972	0.005	1.000	0.005	0.005	3857.	20.2	0.002
1971-	0.025	1.000	0.025	0.026	3623.	95.0	0.009

DAF:  $\overline{0.990}$ TFNORM:  $\overline{10395.2}$ 

## WHERE :

- A = July 1 registration mix from Table 2.4A,
- B = Gasoline fleet sales fractions,
- D = Sales weighted fleet mileage accumulation rate from Table 2.4A.

NOTE : In general, the travel weighting fractions will change for every calendar year since the sales fraction (column B) changes for almost every model year.

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

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TABLE 2.6A.1

SPEED CORRECTION FACTOR COEFFICIENTS FOR LOW ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I

$$SF(s) = EXP(A + B*s + C*s**2 + D*s**3 + E*s**4 + F*s**5), \text{ HC \& CO}$$

$$= A + B*s + C*s**2 + D*s**3 + E*s**4 + F*s**5, \text{ NOx}$$

$$* SCF(s, sadj) = SF(s)/SF(sadj)$$

Pollutant and Model Years	A	B	C	D	E	F
<b>HC</b>						
Pre-1968	0.231026E+01	-0.289572E+00	0.152990E-01	-0.446689E-03	0.648183E-05	-0.363456E-07
1968	0.239726E+01	-0.299985E+00	0.161351E-01	-0.487491E-03	0.729093E-05	-0.419769E-07
1969	0.240873E+01	-0.308187E+00	0.168168E-01	-0.506843E-03	0.753855E-05	-0.431596E-07
1970	0.223217E+01	-0.284985E+00	0.153833E-01	-0.456738E-03	0.673486E-05	-0.383798E-07
1971	0.225223E+01	-0.287778E+00	0.156820E-01	-0.473179E-03	0.707954E-05	-0.408456E-07
1972	0.234948E+01	-0.304959E+00	0.168416E-01	-0.509623E-03	0.759516E-05	-0.434963E-07
1973-1974	0.268382E+01	-0.344633E+00	0.195417E-01	-0.625720E-03	0.978442E-05	-0.583369E-07
1975-1978	0.239540E+01	-0.335781E+00	0.211609E-01	-0.731550E-03	0.120715E-04	-0.748567E-07
<b>CO</b>						
Pre-1968	0.233989E+01	-0.296978E+00	0.160071E-01	-0.477396E-03	0.706752E-05	-0.403978E-07
1968	0.246551E+01	-0.305023E+00	0.160497E-01	-0.473969E-03	0.699075E-05	-0.399758E-07
1969	0.277804E+01	-0.319130E+00	0.153183E-01	-0.422327E-03	0.584948E-05	-0.314969E-07
1970	0.278899E+01	-0.327107E+00	0.162943E-01	-0.467573E-03	0.671906E-05	-0.374401E-07
1971	0.270743E+01	-0.331038E+00	0.176179E-01	-0.538583E-03	0.817402E-05	-0.477803E-07
1972	0.268454E+01	-0.332817E+00	0.176277E-01	-0.524123E-03	0.772221E-05	-0.437025E-07
1973-1974	0.283929E+01	-0.368756E+00	0.210782E-01	-0.676438E-03	0.106267E-04	-0.636405E-07
1975-1978	0.248747E+01	-0.391562E+00	0.270721E-01	-0.976178E-03	0.165270E-04	-0.104317E-06
<b>NOx</b>						
Pre-1968	0.168635E+01	-0.118303E+00	0.654975E-02	-0.137139E-03	0.100849E-05	0.000000E+00
1968	0.122677E+01	-0.444978E-01	0.262476E-02	-0.567150E-04	0.434293E-06	0.000000E+00
1969	0.101743E+01	-0.118958E-01	0.914365E-03	-0.215740E-04	0.182300E-06	0.000000E+00
1970	0.987600E+00	-0.195674E-01	0.169645E-02	-0.404000E-04	0.328001E-06	0.000000E+00
1971	0.115917E+01	-0.444536E-01	0.296425E-02	-0.668990E-04	0.522365E-06	0.000000E+00
1972	0.128169E+01	-0.804874E-01	0.535735E-02	-0.118891E-03	0.901060E-06	0.000000E+00
1973-1974	0.783838E+00	0.328549E-03	0.106029E-02	-0.319350E-04	0.290389E-06	0.000000E+00
1975-1978	0.942131E+00	-0.423240E-01	0.386253E-02	-0.939853E-04	0.753883E-06	0.000000E+00

\* WHERE : s = average speed (mph),  
sadj = basic test procedure speed; adjusted for fraction of cold start operation x  
and fraction of hot start operation w, [1/sadj = (w+x)/26 + (1-w-x)/16].

TABLE 2.6A.2

SPEED CORRECTION FACTOR COEFFICIENTS FOR HIGH ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I

$$SF(s) = EXP(A + B*s + C*s**2 + D*s**3 + E*s**4 + F*s**5), \text{ HC \& CO}$$

$$= A + B*s + C*s**2 + D*s**3 + E*s**4 + F*s**5, \text{ NOx}$$

$$* SCF(s, sadj) = SF(s)/SF(sadj)$$

Pollutant and Model Years	A	B	C	D	E	F
<b>HC</b>						
Pre-1968	0.224612E+01	-0.290973E+00	0.158890E-01	-0.472494E-03	0.694077E-05	-0.392798E-07
1968	0.202779E+01	-0.273049E+00	0.153577E-01	-0.460304E-03	0.678527E-05	-0.384880E-07
1969	0.215056E+01	-0.283620E+00	0.153836E-01	-0.442136E-03	0.628732E-05	-0.346311E-07
1970	0.223021E+01	-0.293648E+00	0.162356E-01	-0.484148E-03	0.711591E-05	-0.402861E-07
1971	0.212230E+01	-0.291072E+00	0.169089E-01	-0.526148E-03	0.802705E-05	-0.470117E-07
1972	0.215361E+01	-0.283451E+00	0.156948E-01	-0.469759E-03	0.693832E-05	-0.394707E-07
1973-1974	0.211340E+01	-0.285676E+00	0.163180E-01	-0.500793E-03	0.755067E-05	-0.437187E-07
1975-1978	0.239540E+01	-0.335781E+00	0.211609E-01	-0.731550E-03	0.120715E-04	-0.748567E-07
<b>CO</b>						
Pre-1968	0.181978E+01	-0.254663E+00	0.152347E-01	-0.487397E-03	0.758207E-05	-0.449514E-07
1968	0.186919E+01	-0.276679E+00	0.172335E-01	-0.558279E-03	0.871678E-05	-0.516980E-07
1969	0.182133E+01	-0.272054E+00	0.170304E-01	-0.552021E-03	0.862543E-05	-0.511440E-07
1970	0.201421E+01	-0.295188E+00	0.186353E-01	-0.621606E-03	0.993657E-05	-0.599779E-07
1971	0.204533E+01	-0.310618E+00	0.204852E-01	-0.708527E-03	0.116215E-04	-0.715690E-07
1972	0.231868E+01	-0.341147E+00	0.209446E-01	-0.665891E-03	0.102225E-04	-0.598265E-07
1973-1974	0.215487E+01	-0.329116E+00	0.210112E-01	-0.689057E-03	0.108390E-04	-0.647125E-07
1975-1978	0.248747E+01	-0.391562E+00	0.270721E-01	-0.976178E-03	0.165270E-04	-0.104317E-06
<b>NOx</b>						
Pre-1968	0.244424E+01	-0.250107E+00	0.138293E-01	-0.287025E-03	0.207585E-05	0.000000E+00
1968	0.188656E+01	-0.161289E+00	0.904995E-02	-0.185609E-03	0.132555E-05	0.000000E+00
1969	0.155777E+01	-0.113032E+00	0.671832E-02	-0.143409E-03	0.106079E-05	0.000000E+00
1970	0.204516E+01	-0.194014E+00	0.110736E-01	-0.231754E-03	0.168372E-05	0.000000E+00
1971	0.163262E+01	-0.121861E+00	0.703020E-02	-0.146293E-03	0.106141E-05	0.000000E+00
1972	0.144825E+01	-0.122444E+00	0.795024E-02	-0.171078E-03	0.125777E-05	0.000000E+00
1973-1974	0.153447E+01	-0.125671E+00	0.785919E-02	-0.169428E-03	0.125494E-05	0.000000E+00
1975-1978	0.942131E+00	-0.423240E-01	0.386253E-02	-0.939853E-04	0.753883E-06	0.000000E+00

\* WHERE : s = average speed (mph),  
sadj = basic test procedure speed; adjusted for fraction of cold start operation x  
and fraction of hot start operation w, [1/sadj = (w+x)/26 + (1-w-x)/16].

TABLE 2.6B

SPEED CORRECTION FACTOR COEFFICIENTS FOR LIGHT DUTY GASOLINE POWERED TRUCKS I

\*  $SCF(s, sadj) = SF(s)/SF(sadj)$ , for  $s \leq 48.0$  mph  
 $SF(s) = A/s + b$ , for 1979+ HC/CO and 1980+ NOx  
 $= EXP((A + B * s) + (C * s**2))$ , for 1979 NOx

Speed Range (in MPH)	Model Years	Coefficient							
		HC		CO		NOx			
		A	B	A	B	A	B	C	
2.5-19.6	1979	19.6000	0.0000	22.2641	-0.1359	0.3467	-0.0261		0.0004
	1980	14.7994	0.2146	21.3338	-0.1188	1.4560	0.9260		
	1981	14.7994	0.2146	21.3338	-0.1188	1.4560	0.9260		
	1982	15.1994	0.2245	21.7353	-0.1089	1.4560	0.9260		
	1983	12.7233	0.3248	20.6103	-0.0776	1.4560	0.9260		
	1984	13.2408	0.3244	20.2174	-0.0315	1.4560	0.9260		
	1985	13.2709	0.3229	18.6383	0.0491	1.4560	0.9260		
	1986	13.9384	0.2889	18.0020	0.0815	1.4560	0.9260		
	1987	11.6213	0.4035	12.4300	0.3658	1.4560	0.9260		
	1988	11.2210	0.4176	9.0279	0.5295	1.4560	0.9260		
	1989	10.8250	0.4477	8.7889	0.5516	1.4560	0.9260		
1990	10.5927	0.4585	8.7478	0.5526	1.4560	0.9260			
1991+	10.7262	0.4528	8.6797	0.5572	1.4560	0.9260			
19.6-48.0	1979	19.6000	0.0000	19.6000	0.0000	0.3467	-0.0261		0.0004
	1980	13.4800	0.3100	9.4700	0.5200	-7.5500	1.3900		
	1981	13.4800	0.3100	9.4700	0.5200	-7.5500	1.3900		
	1982	13.4900	0.3100	9.6100	0.5100	-7.4000	1.3800		
	1983	13.4500	0.3100	9.2200	0.5300	-7.3100	1.3700		
	1984	13.3900	0.3200	8.7700	0.5600	-7.1000	1.3600		
	1985	13.9500	0.2900	9.9900	0.4900	-6.3100	1.3200		
	1986	14.3200	0.2700	10.8000	0.4500	-5.1400	1.2600		
	1987	15.4400	0.2100	16.4300	0.1600	-2.4000	1.1200		
	1988	15.9400	0.1900	19.8400	-0.0100	-0.4500	1.0200		
	1989	16.6700	0.1500	19.8500	-0.0100	-0.3300	1.0200		
1990	17.0700	0.1300	21.0700	-0.0700	-0.4600	1.0200			
1991+	16.9500	0.1300	21.7100	-0.1100	-0.4800	1.0200			

\* WHERE: s = average speed (mph)  
sadj = basic test procedure speed at 19.6 mph

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TABLE 2.6C

HIGH-SPEED SPEED CORRECTION FACTOR COEFFICIENTS FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I

$$* \text{HSCF}(s) = \text{SCF48} * (1.0 + (\text{SCF65} - \text{SCF48}) * (s - S1) / (65.0 - S1))$$

SCF65 coefficients for various pollutants at high speeds.

Model year	HC	CO	NOx
	(s > 55.0)	(s > 55.0)	(s > 48.0)
pre-1982	1.320000	2.960000	1.980000
1982	1.320000	2.960000	1.980000
1983	1.320000	2.960000	1.980000
1984	1.310000	2.930000	1.970000
1985	1.260000	2.750000	1.940000
1986	1.110000	2.280000	1.850000
1987	0.970000	1.830000	1.780000
1988	0.810000	1.340000	1.720000
1989	0.800000	1.290000	1.670000
1990	0.770000	1.190000	1.640000
1991+	0.760000	1.150000	1.640000

- \* WHERE: s = average speed (mph)  
 SCF48 = the speed correction factor at 48.0 mph calculated using the coefficients listed in Table 2.6A for model years through 1978 or Table 2.6B for model year 1979 and later  
 SCF65 = the coefficient listed in the table above  
 S1 = 55.0 mph for HC and CO or 48.0 mph for NOx.

NOTE: The maximum speed allowed in Mobile5a is 65.0 mph.

NOTE: The speed correction factors for HC and CO do not change between 48.0 and 55.0 mph. HC and CO at speeds between 48.0 and 55.0 mph use the 48.0 mph speed correction factor calculated using the coefficients listed in Table 2.6A for model years through 1978 or in Table 2.6B for model year 1979 and later.

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TABLE 2.7A

LOW (< 75F) TEMPERATURE CORRECTION FACTOR COEFFICIENTS FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I

\*  $TCF(1) = TC(1) * (T - 75.0)$ , 1981+ CO,  
 $TCF(b) = EXP [ TC(b) * (T - 75.0) ]$ , all others

Pol	Model Years	Test Segment 1	Test Segment 2	Test Segment 3
HC	Pre-1968	-0.20623E-01	-0.24032E-02	-0.10081E-02
	1968-1969	-0.24462E-01	-0.32017E-02	-0.86884E-03
	1970-1971	-0.21255E-01	-0.52755E-03	0.93659E-03
	1972-1974	-0.21427E-01	-0.39442E-03	0.49731E-02
	1975-1980	-0.23517E-01	-0.88057E-02	-0.16222E-02
	1981-1983	-0.26820E-01	-0.75815E-02	-0.51660E-02
	1984	-0.32775E-01	-0.83176E-02	-0.90264E-02
	1985	-0.32082E-01	-0.85130E-02	-0.90264E-02
	1986	-0.34093E-01	-0.72340E-02	-0.58272E-02
	1987	-0.31654E-01	-0.83518E-02	-0.67952E-02
	1988	-0.29049E-01	-0.96698E-02	-0.79348E-02
	1989	-0.27328E-01	-0.91996E-02	-0.75463E-02
	1990	-0.26252E-01	-0.92459E-02	-0.75930E-02
	1991	-0.26443E-01	-0.95080E-02	-0.78148E-02
	1992+	-0.26443E-01	-0.95080E-02	-0.78148E-02
	CO	Pre-1968	-0.13487E-01	0.15784E-02
1968-1969		-0.21126E-01	-0.15289E-02	0.15749E-02
1970-1971		-0.20843E-01	-0.59951E-02	0.18253E-02
1972-1974		-0.19091E-01	-0.42373E-03	0.57982E-02
1975-1980		-0.24835E-01	-0.88336E-02	-0.11553E-02
1981-1983		-0.12448E+01	-0.12478E-01	-0.74106E-02
1984		-0.13095E+01	-0.14584E-01	-0.11371E-01
1985		-0.12840E+01	-0.14584E-01	-0.11371E-01
1986		-0.10908E+01	-0.13364E-01	-0.90777E-02
1987		-0.10402E+01	-0.15096E-01	-0.90777E-02
1988		-0.98953E+00	-0.17129E-01	-0.90777E-02
1989		-0.91898E+00	-0.16501E-01	-0.90777E-02
1990		-0.88427E+00	-0.16609E-01	-0.90777E-02
1991		-0.89793E+00	-0.16987E-01	-0.90777E-02
1992+		-0.89793E+00	-0.16987E-01	-0.90777E-02
NOx		Pre-1968	-0.16897E-03	-0.89245E-02
	1968-1972	-0.25074E-03	-0.59791E-02	-0.62690E-02
	1973-1974	0.38855E-02	-0.24156E-02	-0.21188E-02
	1975-1978	-0.45504E-04	-0.12575E-02	-0.53153E-03
	1979-1980	-0.76044E-02	-0.68045E-02	-0.54198E-02
	1981-1983	-0.19000E-02	-0.61656E-02	-0.49643E-02
	1984	-0.45479E-02	-0.74823E-02	-0.90882E-02
	1985	-0.47657E-02	-0.69890E-02	-0.90882E-02
	1986	-0.43258E-02	-0.90635E-02	-0.94796E-02
	1987	-0.43258E-02	-0.82415E-02	-0.90924E-02
	1988	-0.43258E-02	-0.73524E-02	-0.87052E-02
	1989	-0.43258E-02	-0.68876E-02	-0.81657E-02
	1990	-0.43258E-02	-0.65658E-02	-0.79003E-02
	1991	-0.43258E-02	-0.65983E-02	-0.80047E-02
	1992+	-0.43258E-02	-0.65983E-02	-0.80047E-02

\* WHERE :

TCF(b) = Low temperature correction factor for appropriate pollutant,  
ambient temperature (< 75F), and model year, for test segment b,  
T = Ambient temperature (Fahrenheit),  
TC(b) = Low temperature correction factor coefficient for appropriate  
pollutant, reference temperature, and model year, for test segment b.

NOTE : The low temperature correction factor is used in conjunction with  
the correction factor given in Table 2.7C.

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TABLE 2.7B

HIGH (> 75F) TEMPERATURE CORRECTION FACTOR COEFFICIENTS  
AND FUEL RVP CORRECTION FACTORS FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I

$$\begin{aligned} * \text{TCF}(b) &= \text{EXP} [ \text{TC}(b) * (T - 75.0) ], \text{ Pre-1981} \\ \text{TRCF}(b) &= \text{EXP} [ \text{RC}(b) * (\text{RVP} - 9.0) + \text{TC}(b) * (T - 75.0) \\ &\quad + \text{TRC}(b) * (\text{RVP} - 9.0) * (T - 75.0) ], \text{ 1981+} \end{aligned}$$

Pol	Model Years	Parameter	Test Segment 1	Test Segment 2	Test Segment 3			
HC	Pre-1968 1968-1969 1970-1971 1972-1974 1975-1980 1981-1985	TC	-0.14381E-01	0.13219E-02	0.34799E-02			
			-0.12552E-01	0.42667E-02	0.75843E-02			
			-0.10888E-01	-0.47925E-03	0.76666E-02			
			-0.66107E-02	0.26288E-02	0.12320E-01			
			-0.14095E-01	0.26179E-01	0.24297E-01			
			0.91402E-01	0.42060E-01	0.93179E-01			
	1986+	RC TC TRC RC TC TRC	0.44270E-02	0.48358E-02	0.74688E-02			
			0.29466E-02	0.00000E+00	0.47276E-02			
			0.23202E-01	0.15373E+00	0.13263E+00			
			0.00000E+00	0.86550E-02	0.83730E-02			
			0.00000E+00	0.00000E+00	0.56009E-02			
			CO	Pre-1968 1968-1969 1970-1971 1972-1974 1975-1980 1981-1985	TC	-0.14691E-01	0.37462E-02	0.11014E-01
						-0.38767E-01	0.84685E-02	0.25179E-01
-0.21165E-01	0.23603E-01	0.28483E-01						
-0.13146E-01	0.24717E-01	0.25848E-01						
-0.19612E-01	0.48537E-01	0.31439E-01						
0.91345E-01	0.13968E+00	0.16322E+00						
0.62182E-02	0.14943E-01	0.14923E-01						
1986+	RC TC TRC RC TC TRC	0.00000E+00	0.00000E+00	0.00000E+00				
		0.40748E-01	0.26214E+00	0.23218E+00				
		0.35170E-02	0.14966E-01	0.20695E-01				
		0.00000E+00	0.56416E-02	0.82344E-02				
		NOx	Pre-1968 1968-1972 1973-1974 1975-1978 1979-1980 1981-1985	TC	0.38841E-02	-0.87325E-02	-0.10839E-01	
					-0.10389E-02	-0.92466E-02	-0.10108E-01	
-0.18301E-01	-0.10925E-01				-0.18042E-01			
-0.71420E-02	-0.87910E-02				-0.75470E-02			
-0.26153E-01	-0.18603E-01				-0.20878E-01			
0.00000E+00	-0.40024E-01				0.00000E+00			
1986+	RC TC TRC RC TC TRC		0.00000E+00	0.00000E+00	0.00000E+00			
			0.00000E+00	0.00000E+00	0.00000E+00			
			0.00000E+00	0.00000E+00	0.00000E+00			
			0.14219E-01	0.27491E-01	0.00000E+00			
			0.00000E+00	0.37789E-02	0.00000E+00			
			0.00000E+00	0.00000E+00	0.00000E+00			
			0.00000E+00	0.00000E+00	0.00000E+00			

\* WHERE :

TCF(b) = High temperature correction factor for appropriate pollutant,  
ambient temperature, and model year, for test segment b,  
T = Ambient temperature (Fahrenheit),  
TC(b) = High temperature correction factor coefficient for appropriate  
pollutant, temperature, and model year, for test segment b,  
TRCF(b) = High temperature and fuel RVP correction factor  
for appropriate pollutant, ambient temperature, fuel RVP,  
and model year, for test segment b,  
RC(b) = Fuel RVP correction factor coefficient for appropriate  
pollutant, fuel RVP, and model year, for test segment b,  
RVP = Fuel volatility in psi,  
TRC(b) = Combined temperature and fuel RVP correction factor coefficient  
for appropriate pollutant, fuel RVP, ambient temperature,  
and model year, for test segment b.

NOTE : The temperature correction factor is used in conjunction with  
the correction factor given in Table 2.7C.

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TABLE 2.7C

NORMALIZED BAG FRACTIONS FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I

Pol	Model Years	Normalized Fractions							
		Test Segment 1 B1	D1	Test Segment 2 B2	D2	Test Segment 3 B3	D3	Total B0	Test D0
HC	Pre-1968	1.2820	0.0250	0.9730	0.0280	0.8390	0.0190	1.0000	0.0249
	1968-1969	1.3450	0.0740	0.9460	0.0540	0.8420	0.0480	1.0000	0.0565
	1970-1971	1.3450	0.1780	0.9190	0.1180	0.8940	0.0930	1.0000	0.1235
	1972-1974	1.3980	0.0600	0.8850	0.0550	0.9190	0.0360	1.0000	0.0508
	1975-1978	1.8560	0.3450	0.7650	0.2340	0.8030	0.1960	1.0000	0.2465
	1979-1980	2.0914	0.4073	0.6714	0.2752	0.8035	0.2972	1.0000	0.3082
	1981-1983	2.7957	0.1898	0.4428	0.2024	0.7084	0.1645	1.0000	0.1898
	1984	2.8662	0.2721	0.6530	0.2902	0.2540	0.2358	1.0000	0.2721
	1985	3.2436	0.2100	0.2334	0.1867	0.7701	0.1633	1.0000	0.1867
	1986	3.2304	0.2289	0.2289	0.2035	0.7885	0.1781	1.0000	0.2035
	1987	2.9623	0.2846	0.3834	0.2579	0.6961	0.2768	1.0000	0.2686
	1988	3.0028	0.2580	0.3765	0.2521	0.6786	0.2658	1.0000	0.2571
	1989	3.0026	0.2584	0.3775	0.2423	0.6768	0.2556	1.0000	0.2493
	1990	3.0346	0.2414	0.3723	0.2335	0.6626	0.2429	1.0000	0.2377
	1991	3.0392	0.2382	0.3717	0.2312	0.6603	0.2399	1.0000	0.2350
	1992+	3.0406	0.2373	0.3716	0.2297	0.6595	0.2382	1.0000	0.2336
CO	Pre-1968	1.2770	0.0330	1.0170	0.0290	0.7580	0.0250	1.0000	0.0287
	1968-1969	1.4420	0.0710	0.9960	0.0420	0.6740	0.0330	1.0000	0.0455
	1970-1971	1.5530	0.1090	0.9330	0.0790	0.7110	0.0380	1.0000	0.0740
	1972-1974	1.5730	0.0540	0.9020	0.0790	0.7550	0.0290	1.0000	0.0602
	1975-1978	1.9020	0.1700	0.8500	0.1510	0.6060	0.1050	1.0000	0.1423
	1979-1980	2.0939	0.3129	0.6895	0.1805	0.7671	0.1479	1.0000	0.1985
	1981-1983	2.6454	0.1633	0.4526	0.1020	0.8032	0.1076	1.0000	0.1163
	1984	2.5738	0.2181	0.3799	0.1362	0.9959	0.1436	1.0000	0.1553
	1985	3.4554	0.1471	0.2186	0.0914	0.6385	0.0971	1.0000	0.1043
	1986	3.2307	0.1795	0.3032	0.1115	0.6465	0.1185	1.0000	0.1272
	1987	2.0401	0.2575	0.5978	0.1862	0.9827	0.2203	1.0000	0.2102
	1988	2.0076	0.2418	0.6309	0.2013	0.9440	0.2183	1.0000	0.2143
	1989	2.0803	0.2616	0.6070	0.2181	0.9349	0.2386	1.0000	0.2327
	1990	2.1101	0.2665	0.6170	0.2452	0.8934	0.2545	1.0000	0.2521
	1991	2.1189	0.2678	0.6173	0.2505	0.8861	0.2579	1.0000	0.2561
	1992+	2.1287	0.2701	0.6152	0.2539	0.8826	0.2611	1.0000	0.2592
NOx	Pre-1968	1.1210	0.0090	0.7850	0.0010	1.3190	-0.0090	1.0000	-0.0001
	1968-1972	1.1990	-0.0040	0.7930	-0.0020	1.2450	0.0060	1.0000	-0.0002
	1973-1974	1.2620	0.0220	0.7700	0.0040	1.2420	0.0270	1.0000	0.0140
	1975-1978	1.2960	0.0120	0.7810	0.0040	1.1950	0.0160	1.0000	0.0089
	1979-1980	1.3666	0.0444	0.7444	0.0278	1.2111	0.0333	1.0000	0.0333
	1981-1983	1.3033	0.0061	0.8077	0.0184	1.1381	0.0245	1.0000	0.0184
	1984	1.0029	0.1343	0.9223	0.0358	1.1461	0.0537	1.0000	0.0627
	1985	1.1665	0.0724	0.8849	0.0161	1.0941	0.0322	1.0000	0.0322
	1986	1.2408	0.0833	0.8611	0.0185	1.0834	0.0370	1.0000	0.0370
	1987	1.7773	0.1936	0.6404	0.1822	1.0997	0.2003	1.0000	0.1895
	1988	1.7890	0.1592	0.6362	0.1645	1.0989	0.1731	1.0000	0.1658
	1989	1.8221	0.1661	0.6184	0.1715	1.1079	0.1807	1.0000	0.1729
	1990	1.8429	0.1464	0.6089	0.1650	1.1104	0.1673	1.0000	0.1618
	1991	1.8476	0.1437	0.6068	0.1642	1.1109	0.1655	1.0000	0.1603
	1992+	1.8506	0.1428	0.6051	0.1640	1.1118	0.1649	1.0000	0.1599

NOTE : The fractions given in this table are used in the calculation of the operating-mode/temperature correction factor (OMTCF).

WHERE :

- OMTCF = [(TERM1 + TERM2 + TERM3)/DENOM],
- TERM1 = W\*TCF(1)\*(B1+D1\*M),
- TERM2 = (1-W-X)\*TCF(2)\*(B2+D2\*M),
- TERM3 = X\*TCF(3)\*(B3+D3\*M),
- DENOM = B0 + D0\*M,
- W = Fraction of VMT in the cold start mode,
- X = Fraction of VMT in the hot start mode,
- TCF(b) = Temperature correction factor for pollutant, model year, for test segment b from Table 2.7A,
- M = Cumulative mileage / 10,000 miles.

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TABLE 2.8A

AIR CONDITIONING CORRECTION FACTOR COEFFICIENTS FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I

$$* \text{ACCF} = U * V * (A + B * (T - 75) - 1) + 1$$

Model Years	HC		CO		NOx	
	A	B	A	B	A	B
Pre-1975	0.1023E+01	0.3344E-02	0.1202E+01	0.1808E-02	0.1299E+01	0.5643E-04
1975+	0.1000E+01	0.3512E-02	0.1130E+01	0.1528E-02	0.1221E+01	0.4262E-03

\* WHERE :

ACCF = Air Conditioning Correction Factor,  
 V = Fraction of vehicles equipped with AC given in Table 1.2.8B,  
 U = Fraction of vehicles with AC that are using it =  $(DI - DILO) / (DIHI - DILO)$ ,  
 $0 \leq U \leq 1$ ,  
 DI = Discomfort index =  $(DB + WB) * .4 + 15$ ,  
 DILO = The highest discomfort index where no AC is used,  
 DIHI = The lowest discomfort index where all vehicles with AC use it,  
 DB = Dry bulb temperature (Fahrenheit),  
 WB = Wet bulb temperature (Fahrenheit),  
 T = Ambient temperature (Fahrenheit).

TABLE 2.8B

ESTIMATED FRACTION OF  
LIGHT DUTY GASOLINE POWERED TRUCKS I  
EQUIPPED WITH AIR CONDITIONING

Model Years	Fraction Equipped With Air Conditioning
Pre-1977	0.32
1977	0.52
1978+	0.39

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TABLE 2.8C

EXTRA LOAD CORRECTION FACTOR COEFFICIENTS FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I

$$* \text{XLCF} = (\text{XLC}-1)*\text{U} + 1$$

Model Years	Coefficients (XLC)		
	HC	CO	NOx
Pre-1968	1.0786	1.2765	0.9535
1968-1969	1.0495	1.1384	1.0313
1970-1971	1.0852	1.2478	1.0313
1972	1.0556	1.1347	1.0313
1973-1974	1.0556	1.1347	1.0753
1975+	1.0455	1.3058	1.0719

\* WHERE :

XLCF = Extra load correction factor,  
 U = Fraction of VMT with an extra load,  
 XLC = Correction factor coefficient.

TABLE 2.8D

TRAILER TOWING CORRECTION FACTOR COEFFICIENTS FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I

$$* \text{TTCF} = (\text{TTC}-1)*\text{U} + 1$$

Model Years	Coefficients (TTC)		
	HC	CO	NOx
Pre-1968	1.2614	1.9327	1.1184
1968 1969	1.2762	1.8940	1.1384
1970 1971	1.4598	2.4753	1.1384
1972	1.7288	2.1414	1.1384
1973 1974	1.7288	2.1414	1.2170
1975+	1.5909	3.9722	1.3875

\* WHERE :

TTCF = Trailer towing correction factor,  
 U = Fraction of VMT towing a trailer,  
 TTC = Correction factor coefficient.

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H-84  
TABLE 2.9A

TAMPERING AND MISFUELING RATES FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I

Model Years	System	Zero Mile Level	Det. Rate 1	Det. Rate 2	50,000 Mile Level	100,000 Mile Level
NON-I/M AREA						
Pre-1981	Air Pump Disablement	0.0320	0.07670	0.01693	0.416	0.500
	Catalyst Removal	0.0785	0.04440	0.04356	0.301	0.518
	EGR System Disabled	-0.2435	0.11980	0.00085	0.356	0.360
	Filler Neck Damaged	0.1519	0.02970	0.04966	0.300	0.549
	Fuel Tank Misfueled	0.0000	0.00000	0.00000	0.000	0.000
	Total Misfueled	0.1519	0.02970	0.04966	0.300	0.549
	PCV System Disabled	0.0000	0.00730	0.00730	0.036	0.073
	Cannister Disconnect	-0.0195	0.04380	0.01678	0.199	0.283
	Both Cannister & Cap	-0.1849	0.08390	0.01515	0.235	0.310
1981-1983	Air Pump Disablement	-0.0389	0.02990	0.03280	0.111	0.275
	Catalyst Removal	-0.0018	0.02580	0.01488	0.127	0.202
	EGR System Disabled	-0.0204	0.02580	0.01444	0.109	0.181
	Filler Neck Damaged	0.0017	0.01880	0.01096	0.096	0.151
	Fuel Tank Misfueled	0.0097	0.00150	0.00387	0.017	0.037
	Total Misfueled	0.0113	0.02030	0.01486	0.113	0.187
	PCV System Disabled	0.0145	0.00030	0.00043	0.016	0.018
	Cannister Disconnect	0.0009	0.00570	0.02223	0.029	0.141
	Both Cannister & Cap	-0.0590	0.02700	0.01591	0.076	0.156
1984+	Air Pump Disablement	-0.0039	0.00880	0.01331	0.040	0.107
	Catalyst Removal	0.0024	0.00350	0.01400	0.020	0.090
	EGR System Disabled	-0.0019	0.00530	0.01100	0.025	0.080
	Filler Neck Damaged	0.0075	0.00060	0.00060	0.010	0.014
	Fuel Tank Misfueled	-0.0075	0.00510	0.00510	0.018	0.044
	Total Misfueled	0.0000	0.00570	0.00570	0.029	0.057
	PCV System Disabled	0.0011	0.00090	0.00090	0.006	0.010
	Cannister Disconnect	0.0100	0.00110	0.01143	0.015	0.073
	Both Cannister & Cap	0.0092	0.00470	0.01515	0.033	0.108
WITH I/M AREA						
Pre-1981	Air Pump Disablement	0.0615	0.03040	0.02931	0.214	0.360
	Catalyst Removal	0.1037	0.02030	0.02030	0.205	0.307
	EGR System Disabled	0.0808	0.01140	0.01140	0.138	0.195
	Filler Neck Damaged	0.1376	0.02100	0.02100	0.243	0.348
	Fuel Tank Misfueled	-0.0885	0.01780	0.01780	0.000	0.089
	Total Misfueled	0.0491	0.03880	0.03880	0.243	0.437
	PCV System Disabled	-0.0156	0.00400	0.01243	0.004	0.067
	Cannister Disconnect	0.0695	0.00930	0.00930	0.116	0.162
	Both Cannister & Cap	0.0471	0.01500	0.01500	0.122	0.197
1981-1983	Air Pump Disablement	-0.0318	0.01480	0.01480	0.042	0.116
	Catalyst Removal	-0.0062	0.01090	0.01090	0.048	0.103
	EGR System Disabled	0.0538	0.00000	0.00000	0.054	0.054
	Filler Neck Damaged	0.0201	0.00310	0.00310	0.036	0.051
	Fuel Tank Misfueled	-0.0580	0.01980	0.01479	0.041	0.115
	Total Misfueled	-0.0379	0.02290	0.01789	0.077	0.166
	PCV System Disabled	-0.0261	0.00790	0.00790	0.013	0.053
	Cannister Disconnect	-0.0126	0.01280	0.00015	0.051	0.052
	Both Cannister & Cap	-0.0314	0.01840	0.00063	0.061	0.064
1984+	Air Pump Disablement	-0.0262	0.01640	0.01640	0.056	0.138
	Catalyst Removal	0.0006	0.00430	0.02301	0.022	0.137
	EGR System Disabled	-0.0021	0.00270	0.00561	0.011	0.039
	Filler Neck Damaged	-0.0122	0.00810	0.00810	0.028	0.069
	Fuel Tank Misfueled	0.0197	0.00050	0.00050	0.022	0.025
	Total Misfueled	0.0075	0.00860	0.00860	0.051	0.094
	PCV System Disabled	0.0000	0.00000	0.00000	0.000	0.000
	Cannister Disconnect	0.0100	0.00110	0.01143	0.015	0.073
	Both Cannister & Cap	0.0092	0.00470	0.01515	0.033	0.108

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TABLE 2.9B

EXCESS EMISSIONS  
DUE TO TAMPERING AND/OR MISFUELING FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I

Type of Tampering	Emission Control System	Pollutant	Excess Emissions (g/mi)			
			FTP	Bag 1	Bag 2	Bag 3
Air Pump Disablement	Oxidation	HC	1.37	1.80	1.37	1.04
		CO	30.61	34.67	33.90	21.28
	3way/Oxidation 3way	HC	0.85	1.36	0.76	0.61
		CO	21.02	31.80	18.21	18.25
Catalyst Removal	Oxidation	HC	3.05	2.31	3.40	2.95
		CO	28.01	41.40	28.97	16.06
	3way/Oxidation 3way	HC	2.04	1.80	2.25	1.81
		CO	13.74	16.32	14.11	11.07
NOx		1.52	1.49	1.36	1.83	
Total Misfueled	Oxidation	HC	2.47	2.30	2.57	2.40
		CO	20.96	46.50	13.13	16.62
	3way/Oxidation 3way	HC	1.44	1.42	1.56	1.21
		CO	6.57	8.08	6.60	5.37
NOx		0.57	0.64	0.45	0.74	
EGR System Disabled		NOx				
		Pre-1975	1.21	1.40	0.96	1.54
		1975-1978	3.31	3.82	2.63	4.21
		1979-1987	3.48	4.11	2.68	4.53
	1988+	1.23	1.36	1.19	1.21	
EGR System Disabled and Catalyst Removal		NOx	3.39	3.02	3.46	3.55
EGR System Disabled and Total Misfueled		NOx	1.99	2.12	1.85	2.16

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TABLE 2.9C

EXCESS CRANKCASE EMISSIONS FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I

Model Years	Excess Crankcase (Gm/Mile)
PCV System Disabled	
1964-1977	1.28
1978-1979	1.27
1980	1.24
1981+	1.23

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TABLE 2.9D

RUNNING LOSS EMISSION RATE FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I

MODEL YEARS 1972-1980

Fuel RVP psi	Ambient Temp F	Trip Length (duration)					
		> 0 & ≤10min	> 10 & ≤20min	> 20 & ≤30min	> 30 & ≤40min	> 40 & ≤50min	>50min
SPEED 7.1 MPH							
7.0	80.0	0.45	0.41	0.34	0.29	0.29	0.32
	87.0	0.49	0.45	0.41	0.37	0.39	0.44
	95.0	0.55	0.50	0.48	0.45	0.43	0.42
	105.0	0.63	0.55	0.62	0.79	1.09	1.48
9.0	80.0	0.61	0.61	0.77	0.85	0.99	1.21
	87.0	0.60	0.54	0.62	0.67	0.78	0.93
	95.0	0.56	0.46	0.53	0.61	0.71	0.78
	105.0	1.10	0.88	1.76	2.31	2.98	3.51
10.4	80.0	0.62	0.56	0.66	0.74	0.88	1.05
	87.0	0.71	0.63	0.86	1.07	1.34	1.66
	95.0	0.80	0.71	1.14	1.57	2.08	2.67
	105.0	0.83	0.73	1.20	1.70	2.29	2.96
11.7	80.0	0.66	0.57	0.72	0.82	1.11	1.66
	87.0	0.77	0.74	1.23	1.96	2.78	3.80
	95.0	0.89	0.90	1.74	3.09	4.40	5.93
	105.0	1.23	1.07	2.73	5.32	8.55	12.24
SPEED 19.6 MPH							
7.0	80.0	0.12	0.14	0.11	0.07	0.06	0.05
	87.0	0.13	0.14	0.11	0.08	0.07	0.07
	95.0	0.14	0.18	0.16	0.15	0.14	0.13
	105.0	0.23	0.25	0.22	0.23	0.26	0.32
9.0	80.0	0.12	0.12	0.11	0.12	0.11	0.11
	87.0	0.10	0.10	0.09	0.09	0.09	0.11
	95.0	0.10	0.10	0.09	0.09	0.09	0.11
	105.0	0.25	0.18	0.15	0.28	0.35	0.51
10.4	80.0	0.15	0.15	0.13	0.14	0.14	0.16
	87.0	0.16	0.15	0.14	0.18	0.20	0.24
	95.0	0.18	0.16	0.16	0.24	0.28	0.39
	105.0	0.18	0.16	0.16	0.26	0.31	0.43
11.7	80.0	0.17	0.12	0.10	0.09	0.08	0.11
	87.0	0.16	0.16	0.19	0.41	0.57	0.95
	95.0	0.16	0.16	0.23	0.53	0.74	1.07
	105.0	0.23	0.16	0.21	0.58	0.91	1.72
SPEED 47.9 MPH							
7.0	80.0	0.02	0.02	0.02	0.02	0.02	0.02
	87.0	0.02	0.02	0.02	0.02	0.02	0.02
	95.0	0.02	0.02	0.02	0.02	0.02	0.02
	105.0	0.06	0.02	0.02	0.02	0.02	0.02
9.0	80.0	0.02	0.02	0.02	0.02	0.02	0.02
	87.0	0.02	0.02	0.02	0.02	0.02	0.02
	95.0	0.02	0.02	0.02	0.02	0.02	0.02
	105.0	0.09	0.02	0.02	0.02	0.02	0.02
10.4	80.0	0.02	0.02	0.02	0.02	0.02	0.02
	87.0	0.02	0.02	0.02	0.02	0.02	0.02
	95.0	0.08	0.02	0.02	0.02	0.02	0.02
	105.0	0.09	0.03	0.03	0.03	0.03	0.03
11.7	80.0	0.02	0.02	0.02	0.02	0.02	0.02
	87.0	0.05	0.03	0.03	0.03	0.03	0.03
	95.0	0.09	0.05	0.04	0.03	0.03	0.03
	105.0	0.09	0.05	0.04	0.03	0.03	0.03

Continued on the next page.

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TABLE 2.9D (continued)

MODEL YEARS 1981-2020

Fuel RVP psi	Ambient Temp F	Trip Length (duration)					
		> 0 & ≤10min	> 10 & ≤20min	> 20 & ≤30min	> 30 & ≤40min	> 40 & ≤50min	>50min
SPEED 7.1 MPH							
7.0	80.0	0.45	0.41	0.34	0.29	0.29	0.32
	87.0	0.49	0.45	0.41	0.37	0.39	0.44
	95.0	0.55	0.50	0.48	0.45	0.43	0.42
	105.0	0.63	0.55	0.62	0.79	1.09	1.48
9.0	80.0	0.61	0.61	0.77	0.85	0.99	1.21
	87.0	0.60	0.54	0.62	0.67	0.78	0.93
	95.0	0.56	0.46	0.53	0.61	0.71	0.78
	105.0	1.10	0.88	1.76	2.31	2.98	3.51
10.4	80.0	0.62	0.56	0.66	0.74	0.88	1.05
	87.0	0.71	0.63	0.86	1.07	1.34	1.66
	95.0	0.80	0.71	1.14	1.57	2.08	2.67
	105.0	0.83	0.73	1.20	1.70	2.29	2.96
11.7	80.0	0.66	0.57	0.72	0.82	1.11	1.66
	87.0	0.77	0.74	1.23	1.96	2.78	3.80
	95.0	0.89	0.90	1.74	3.09	4.40	5.93
	105.0	1.23	1.07	2.73	5.32	8.55	12.24
SPEED 19.6 MPH							
7.0	80.0	0.12	0.14	0.11	0.07	0.06	0.05
	87.0	0.13	0.14	0.11	0.08	0.07	0.07
	95.0	0.14	0.18	0.16	0.15	0.14	0.13
	105.0	0.23	0.25	0.22	0.23	0.26	0.32
9.0	80.0	0.12	0.12	0.11	0.12	0.11	0.11
	87.0	0.10	0.10	0.09	0.09	0.09	0.11
	95.0	0.10	0.10	0.09	0.09	0.09	0.11
	105.0	0.25	0.18	0.15	0.28	0.35	0.51
10.4	80.0	0.15	0.15	0.13	0.14	0.14	0.16
	87.0	0.16	0.15	0.14	0.18	0.20	0.24
	95.0	0.18	0.16	0.16	0.24	0.28	0.39
	105.0	0.18	0.16	0.16	0.26	0.31	0.43
11.7	80.0	0.17	0.12	0.10	0.09	0.08	0.11
	87.0	0.16	0.16	0.19	0.41	0.57	0.95
	95.0	0.16	0.16	0.23	0.53	0.74	1.07
	105.0	0.23	0.16	0.21	0.58	0.91	1.72
SPEED 47.9 MPH							
7.0	80.0	0.02	0.02	0.02	0.02	0.02	0.02
	87.0	0.02	0.02	0.02	0.02	0.02	0.02
	95.0	0.02	0.02	0.02	0.02	0.02	0.02
	105.0	0.06	0.02	0.02	0.02	0.02	0.02
9.0	80.0	0.02	0.02	0.02	0.02	0.02	0.02
	87.0	0.02	0.02	0.02	0.02	0.02	0.02
	95.0	0.02	0.02	0.02	0.02	0.02	0.02
	105.0	0.09	0.02	0.02	0.02	0.02	0.02
10.4	80.0	0.02	0.02	0.02	0.02	0.02	0.02
	87.0	0.02	0.02	0.02	0.02	0.02	0.02
	95.0	0.08	0.02	0.02	0.02	0.02	0.02
	105.0	0.09	0.03	0.03	0.03	0.03	0.03
11.7	80.0	0.02	0.02	0.02	0.02	0.02	0.02
	87.0	0.05	0.03	0.03	0.03	0.03	0.03
	95.0	0.09	0.05	0.04	0.03	0.03	0.03
	105.0	0.09	0.05	0.04	0.03	0.03	0.03

DATE : JUNE 30, 1995

TABLE 2.9E

RUNNING LOSS EMISSION RATE FOR  
PRESSURE/PURGE TEST FAILED VEHICLES

Fuel RVP psi	Ambient Temp F	Trip Length (duration)					
		> 0 & ≤10min	> 10 & ≤20min	> 20 & ≤30min	> 30 & ≤40min	> 40 & ≤50min	>50min
7.0	80.0	1.08	4.91	5.20	5.20	5.20	5.20
	87.0	1.63	6.85	10.47	10.47	13.18	11.14
	95.0	2.34	9.35	17.20	27.99	36.95	47.17
	105.0	3.36	15.55	30.37	51.83	70.03	93.51
9.0	80.0	2.20	8.85	15.88	24.45	32.34	40.21
	87.0	2.88	11.24	22.32	41.86	55.05	74.61
	95.0	3.88	19.21	38.05	65.68	89.90	120.26
	105.0	6.48	34.29	72.58	134.85	188.43	251.53
10.4	80.0	3.03	11.76	23.74	45.69	60.06	82.22
	87.0	3.99	19.84	39.52	68.66	94.18	126.01
	95.0	6.05	31.82	66.96	123.65	172.52	230.39
	105.0	8.99	48.78	105.72	201.18	282.84	377.19
11.7	80.0	4.04	20.13	40.19	70.04	96.17	128.70
	87.0	5.84	30.58	64.14	118.01	164.53	219.78
	95.0	8.13	43.83	94.44	178.65	250.83	334.66
	105.0	11.38	62.53	137.11	263.89	372.01	495.78

DATE : JUNE 30, 1995

TABLE 2.9F

TECHNOLOGY GROUP FRACTIONS  
FOR RESTING LOSS HC BY MODEL YEAR FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I

MODEL YEAR	OPEN BOTTOM CANISTER	CLOSED BOTTOM CANISTER
Pre-1981	0.309	0.691
1981	0.309	0.691
1982	0.349	0.651
1983	0.320	0.680
1984	0.291	0.709
1985	0.323	0.677
1986	0.255	0.745
1987	0.163	0.837
1988	0.136	0.864
1989	0.048	0.952
1990	0.057	0.943
1991	0.069	0.931
1992+	0.000	1.000

DATE : JUNE 30, 1995



TABLE 2.9G.1

HOT SOAK EMISSION RATES FOR  
LOW ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I

AMBIENT TEMPERATURE 82F

MODEL YEAR	AT 9.0 RVP			AT 11.5 RVP		
	PASS	FAILED PURGE	FAILED PRESSURE	PASS	FAILED PURGE	FAILED PRESSURE
Pre -1971	14.67	14.67	14.67	22.45	22.45	22.45
1971	10.63	14.67	14.67	15.68	22.45	22.45
1972-1977	7.79	14.50	14.67	11.96	22.19	22.45
1978-1980	2.20	5.83	5.89	4.17	17.69	17.90

HOT SOAK EMISSION RATES FOR 1981+ PASS  
LOW ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I  
AMBIENT TEMPERATURE 82F

FOR RVP LESS THAN 9.0      FOR RVP 9.0 OR GREATER  
EMISSION RATE = A+B\*RVP      EMISSION RATE = C+D\*RVP+E\*RVP\*\*2

FUEL DELIVERY SYSTEM	A	B	C	D	E
CARB	-0.164070	0.138230	-5.196600	0.697400	0.000000
TBI	0.078327	0.041297	-4.789710	0.582190	0.000000
PFI	0.078327	0.041297	-4.789710	0.582190	0.000000

DIURNAL EMISSION RATES FOR  
LOW ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I

MINIMUM TEMPERATURE 60F, MAXIMUM 84F

MODEL YEAR	AT 9.0 RVP			AT 11.5 RVP		
	PASS	FAILED PURGE	FAILED PRESSURE	PASS	FAILED PURGE	FAILED PRESSURE
Pre -1971	40.10	40.10	40.10	65.73	65.73	65.73
1971	27.77	40.10	40.10	53.90	65.73	65.73
1972-1977	19.66	20.72	28.22	36.60	40.91	45.49
1978-1980	15.20	16.11	23.61	26.08	29.22	33.80

DATE : JUNE 30, 1995

TABLE 2.9G.2

HOT SOAK EMISSION RATES FOR  
HIGH ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I

AMBIENT TEMPERATURE 82F

MODEL YEAR	AT 9.0 RVP			AT 11.5 RVP		
	PASS	FAILED PURGE	FAILED PRESSURE	PASS	FAILED PURGE	FAILED PRESSURE
Pre -1971	19.07	19.07	19.07	29.18	29.18	29.18
1971	13.82	19.07	19.07	20.38	29.18	29.18
1972-1976	10.03	14.52	19.07	18.87	27.30	36.74
1977	7.79	14.50	14.67	11.96	22.19	22.45
1978-1980	2.86	7.58	7.66	5.42	23.00	23.27

HOT SOAK EMISSION RATES FOR 1981+ PASS  
HIGH ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I  
AMBIENT TEMPERATURE 82F

FUEL DELIVERY SYSTEM	FOR RVP LESS THAN 9.0 EMISSION RATE = A+B*RVP		FOR RVP 9.0 OR GREATER EMISSION RATE = C+D*RVP+E*RVP**2		
	A	B	C	D	E
CARB	-0.164070	0.138230	-5.196600	0.697400	0.000000
TBI	0.078327	0.041297	-4.789710	0.582190	0.000000
PFI	0.078327	0.041297	-4.789710	0.582190	0.000000

DIURNAL EMISSION RATES FOR  
HIGH ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I

MINIMUM TEMPERATURE 60F, MAXIMUM 84F

MODEL YEAR	AT 9.0 RVP			AT 11.5 RVP		
	PASS	FAILED PURGE	FAILED PRESSURE	PASS	FAILED PURGE	FAILED PRESSURE
Pre -1971	52.13	52.13	52.13	85.45	85.45	85.45
1971	36.10	52.13	52.13	70.07	85.45	85.45
1972-1976	20.81	24.47	38.11	43.78	55.71	66.80
1977	19.66	20.72	28.22	36.60	40.91	45.49
1978-1980	19.76	20.94	30.69	33.90	37.99	43.94

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TABLE 2.10A.1

METHANE OFFSETS\*  
FOR LOW ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I

Model Years	Methane Offsets (g/mi)			
	FTP	Bag 1	Bag 2	Bag 3
Pre-1979	0.279	0.366	0.282	0.207
1979-1980	0.140	0.206	0.132	0.107
1981-1982	0.125	0.194	0.113	0.095
1983+	0.119	0.161	0.113	0.099

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

VOC/TOG CORRECTION FACTOR FOR  
LIGHT DUTY GASOLINE POWERED VEHICLES

VOC/TOG = (Total HC - Methane offset)\*FID + Methane offset.

\* FID=SHRMKT(1)\*CF +  
SHRMKT(2)\*(CF+0.074\*OXYCNT(1)\*100)+  
SHRMKT(3)\*(CF+0.062\*OXYCNT(2)\*100)

Model Years	TOG	VOG
Pre-1975	1.0352	1.0239
1975	1.0226	0.9975
1976-1977	1.0219	0.9959
1978-1979	1.0211	0.9942
1980	1.0206	0.9905
1981	1.0200	0.9913
1982	1.0204	0.9915
1983	1.0202	0.9886
1984	1.0204	0.9833
1985	1.0197	0.9829
1986	1.0178	0.9821
1987	1.0179	0.9770
1988	1.0171	0.9748
1989	1.0176	0.9736
1990	1.0181	0.9757
1991+	1.0176	0.9766

The correction factor is the same for Gasoline, Ether blend and Alcohol blend fueled vehicles in MOBILE5a

\* WHERE:  
FID -FID correction factor (TOG or VOC)  
SHRMKT(i)-Market share for i=1-Gasoline,i=2-Ether blend,  
i=3-Alcohol blend.  
CF -Coefficients from the table above (TOG or VOC)  
OXYCNT(j)-Oxygen content adjustment for j=1-Ether blend,  
j=2-Alcohol blend.

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TABLE 2.10A.2

METHANE OFFSETS\*  
FOR HIGH ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I

Model Years	Methane Offsets (g/mi)			
	FTP	Bag 1	Bag 2	Bag 3
Pre-1975	0.378	0.497	0.382	0.279
1975-1978	0.339	0.487	0.332	0.239
1979-1980	0.289	0.427	0.272	0.219
1981-1983	0.179	0.292	0.155	0.139
1984	0.150	0.205	0.140	0.127
1985	0.113	0.153	0.105	0.097
1986+	0.119	0.161	0.113	0.099

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

VOC/TOG CORRECTION FACTOR FOR  
LIGHT DUTY GASOLINE POWERED VEHICLES

VOC/TOG = (Total HC - Methane offset)\*FID + Methane offset.

\* FID=SHRMKT(1)\*CF +  
SHRMKT(2)\*(CF+0.074\*OXYCNT(1)\*100)+  
SHRMKT(3)\*(CF+0.062\*OXYCNT(2)\*100)

Model Years	TOG	VOG
Pre-1975	1.0352	1.0239
1975	1.0226	0.9975
1976-1977	1.0219	0.9959
1978-1979	1.0211	0.9942
1980	1.0206	0.9905
1981	1.0200	0.9913
1982	1.0204	0.9915
1983	1.0202	0.9886
1984	1.0204	0.9833
1985	1.0197	0.9829
1986	1.0178	0.9821
1987	1.0179	0.9770
1988	1.0171	0.9748
1989	1.0176	0.9736
1990	1.0181	0.9757
1991+	1.0176	0.9766

The correction factor is the same for Gasoline, Ether blend and Alcohol blend fueled vehicles in MOBILE5a

\* WHERE:

FID -FID correction factor (TOG or VOC)  
SHRMKT(i)-Market share for i=1-Gasoline,i=2-Ether blend,  
i=3-Alcohol blend.  
CF -Coefficients from the table above (TOG or VOC)  
OXYCNT(j)-Oxygen content adjustment for j=1-Ether blend,  
j=2-Alcohol blend.

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TABLE 2.10C

PERCENT TECHNOLOGY DISTRIBUTIONS  
 (EXHAUST AND EVAPORATIVE EMISSION SYSTEMS)  
 FOR LIGHT DUTY GASOLINE POWERED TRUCKS I

Model Years	Air Pump Only	Oxidation Catalyst	3Way Catalyst	EGR System	Air Pump & Oxidation or 3Way Catalyst	EGR System & 3Way Catalyst
Pre-1968	0.0	0.0	0.0	0.0	0.0	0.0
1968-1971	5.0	0.0	0.0	0.0	0.0	0.0
1972	10.0	0.0	0.0	0.0	0.0	0.0
1973	30.0	0.0	0.0	80.0	0.0	0.0
1974	30.0	0.0	0.0	90.0	0.0	0.0
1975	10.0	70.0	0.0	90.0	30.0	0.0
1976	10.0	80.0	0.0	90.0	30.0	0.0
1977-1978	10.0	75.0	0.0	90.0	20.0	0.0
1979-1980	10.0	80.0	0.0	100.0	40.0	0.0
1981	0.0	95.0	5.0	100.0	50.0	5.0
1982	0.0	90.0	10.0	100.0	60.0	10.0
1983	0.0	80.0	20.0	100.0	60.0	20.0
1984	0.0	70.0	30.0	100.0	75.0	30.0
1985	0.0	60.0	40.0	100.0	75.0	40.0
1986	0.0	50.0	50.0	100.0	55.0	50.0
1987	0.0	5.0	95.0	100.0	55.0	95.0
1988+	0.0	5.0	95.0	100.0	50.0	95.0

Model Years	Evaporative Canister	PCV System
Pre-1963	0.0	0.0
1963-1967	0.0	0.0
1968-1970	0.0	100.0
1971+	100.0	100.0

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TABLE 2.10D

PERCENT TECHNOLOGY DISTRIBUTIONS  
(FUEL DELIVERY SYSTEMS)  
FOR LIGHT DUTY GASOLINE POWERED TRUCKS I

<u>Model Years</u>	<u>Carbureted</u>	<u>Ported Fuel-Injected</u>	<u>Throttle-Body Fuel-Injected</u>
1981	100.0	0.0	0.0
1982	100.0	0.0	0.0
1983	99.8	0.2	0.0
1984	97.8	2.2	0.0
1985	88.7	6.6	4.7
1986	62.6	23.8	13.6
1987	39.3	32.7	28.0
1988	13.2	41.6	45.2
1989	9.1	54.0	36.9
1990	3.2	60.1	36.7
1991	1.6	57.7	40.7
1992+	1.6	57.7	40.7

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TABLE 2.10E

EVAPORATIVE TEST PROCEDURE  
PHASE-IN PERCENTAGE

MODEL YEAR	% MEETING NEW TP REQUIREMENT
-----	-----
1996	20.0
1997	40.0
1998	90.0
1999	100.0

EVAPORATIVE TEST PROCEDURE  
EMISSION REDUCTION PERCENTAGE

EMISSION SOURCE	PROBLEM FREE	PURGE FAILURE	PRESSURE FAILURE
-----	-----	-----	-----
Hot soak	50.0	30.0	30.0
Diurnal			
Full	50.0	0.0	0.0
Multiple 2-3	75.0	0.0	0.0
Multiple 4	40.0	0.0	0.0
Partial	50.0	0.0	0.0
Running Loss	80.0	30.0	30.0
Resting Loss	75.0	75.0	75.0

DATE : JUNE 30, 1995

DATE : JUNE 30, 1995  
 TABLE 2.11A.1  
 BY-MODEL-YEAR EMISSION LEVELS FOR LOW ALTITUDE  
 LIGHT DUTY GASOLINE POWERED TRUCKS I  
 TOTAL NONMETHANE HC

1985	1986			1987			1988			1989			January 1 of Calendar Year			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	20.8	1962	20.8	1963	17.5	1964	17.5	1965	17.5	1966	17.5	1967	17.5	1968	15.3	1969	15.3	1970	15.3	1971	16.2	1972	16.0	1973	10.4
1962	20.5	1963	17.2	1964	17.2	1965	17.2	1966	17.2	1967	17.2	1968	15.0	1969	15.0	1970	15.0	1971	15.0	1972	15.6	1973	10.1	1974	10.1
1963	16.9	1964	16.9	1965	16.9	1966	16.9	1967	16.9	1968	14.6	1969	14.6	1970	14.6	1971	14.8	1972	9.6	1973	9.8	1974	9.8	1975	9.8
1964	16.7	1965	16.7	1966	16.7	1967	16.7	1968	16.7	1969	14.3	1970	15.1	1971	14.8	1972	9.3	1973	9.6	1974	9.6	1975	9.6	1976	9.8
1965	16.4	1966	16.4	1967	16.4	1968	16.4	1969	16.4	1970	14.0	1971	14.4	1972	9.3	1973	9.3	1974	9.3	1975	10.3	1976	10.3	1977	10.4
1966	16.1	1967	16.1	1968	13.7	1969	13.7	1970	14.4	1971	15.3	1972	9.1	1973	9.1	1974	9.1	1975	10.0	1976	10.1	1977	10.1	1978	10.1
1967	15.8	1968	13.4	1969	13.4	1970	14.0	1971	14.8	1972	9.9	1973	8.8	1974	8.8	1975	9.1	1976	9.1	1977	9.8	1978	9.8	1979	9.0
1968	13.1	1969	13.1	1970	13.7	1971	14.3	1972	9.6	1973	9.6	1974	8.6	1975	9.4	1976	9.4	1977	9.5	1978	9.4	1979	8.7	1980	8.0
1969	12.8	1970	13.3	1971	13.8	1972	9.3	1973	9.3	1974	9.3	1975	9.1	1976	9.2	1977	8.2	1978	8.1	1979	8.4	1980	7.7	1981	7.7
1970	12.9	1971	13.4	1972	8.9	1973	8.9	1974	8.9	1975	9.6	1976	8.8	1977	8.8	1978	7.8	1979	7.1	1980	7.4	1981	7.4	1982	4.9
1971	12.9	1972	8.6	1973	8.6	1974	8.6	1975	8.6	1976	9.3	1977	8.4	1978	7.5	1979	6.8	1980	6.8	1981	4.5	1982	4.5	1983	4.5
1972	8.3	1973	8.3	1974	8.3	1975	8.8	1976	8.9	1977	8.8	1978	7.5	1979	6.8	1980	6.4	1981	6.4	1982	4.3	1983	4.3	1984	4.3
1973	8.0	1974	8.0	1975	8.4	1976	8.4	1977	8.4	1978	7.7	1979	6.4	1980	6.4	1981	4.0	1982	4.0	1983	4.1	1984	3.9	1985	4.1
1974	7.7	1975	7.9	1976	8.0	1977	8.0	1978	7.3	1979	6.5	1980	6.1	1981	6.1	1982	3.8	1983	3.8	1984	3.7	1985	3.9	1986	3.8
1975	7.5	1976	7.6	1977	7.6	1978	6.9	1979	6.9	1980	6.1	1981	3.8	1982	3.8	1983	3.6	1984	3.6	1985	3.6	1986	3.5	1987	3.4
1976	7.2	1977	7.1	1978	6.5	1979	5.7	1980	5.7	1981	3.7	1982	3.6	1983	3.6	1984	3.2	1985	3.2	1986	3.1	1987	3.1	1988	3.4
1977	6.7	1978	6.1	1979	5.3	1980	5.3	1981	3.4	1982	3.4	1983	3.3	1984	3.3	1985	3.2	1986	2.7	1987	2.7	1988	2.9	1989	2.6
1978	5.6	1979	4.9	1980	4.9	1981	3.1	1982	3.1	1983	3.2	1984	2.9	1985	2.9	1986	2.7	1987	2.7	1988	2.6	1989	2.5	1990	2.6
1979	4.4	1980	4.4	1981	2.8	1982	2.8	1983	2.9	1984	2.7	1985	2.3	1986	2.2	1987	2.2	1988	2.2	1989	2.1	1990	2.2	1991	2.2
1980	3.9	1981	2.6	1982	2.6	1983	2.6	1984	2.4	1985	1.9	1986	1.8	1987	1.7	1988	1.7	1989	1.7	1990	1.7	1991	1.7	1992	1.7
1981	2.2	1982	2.2	1983	2.3	1984	2.3	1985	2.1	1986	1.3	1987	1.3	1988	1.2	1989	1.2	1990	1.3	1991	1.3	1992	1.3	1993	1.3
1982	2.0	1983	2.0	1984	1.9	1985	1.2	1986	1.1	1987	1.1	1988	1.0	1989	1.0	1990	1.0	1991	1.0	1992	1.0	1993	1.0	1994	1.0
1983	1.7	1984	1.6	1985	1.0	1986	1.0	1987	1.0	1988	0.9	1989	0.9	1990	0.9	1991	0.9	1992	0.9	1993	0.9	1994	0.9	1995	0.9
1984	1.3	1985	0.9	1986	0.8	1987	0.8	1988	0.8	1989	0.8	1990	0.8	1991	0.8	1992	0.8	1993	0.8	1994	0.8	1995	0.7	1996	0.7
1985	0.8	1986	0.8	1987	0.8	1988	0.7	1989	0.7	1990	0.7	1991	0.7	1992	0.7	1993	0.7	1994	0.7	1995	0.7	1996	0.6	1997	0.5

\*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,

20.6% of VMT traveled in cold start,

52.1% of VMT in stabilized,

27.3% of VMT in hot start,

60 TO 84F diurnal,

75F for hot soak and running loss emissions,

9.0 psi fuel RVP,

54.57% average in-use fuel tank level, including refueling emissions.

Emissions are based on the January 1 mileage accumulation figures given in Table 1.4A.2

Continued on the next page.



TABLE 2.11A.1 (continued)  
 BY-MODEL-YEAR EMISSION LEVELS FOR LOW ALTITUDE  
 LIGHT DUTY GASOLINE POWERED TRUCKS I  
 TOTAL NONMETHANE HC

	January 1 of Calendar Year																						
	1997	1998	1999	2000	2003	2005	2008	2010	2012	2015	2018	2020											
	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**									
1973	10.4	1974	10.4	1975	11.5	1976	11.7	1979	10.0	1981	6.6	1984	6.5	1986	7.8	1988	7.3	1991	7.5	1994	7.4	1996	7.2
1974	10.1	1975	11.2	1976	11.4	1977	11.3	1980	9.7	1982	6.4	1985	7.7	1987	7.3	1989	7.3	1992	7.3	1995	7.1	1997	6.9
1975	10.9	1976	11.0	1977	11.0	1978	10.1	1981	6.2	1983	6.3	1986	7.3	1988	6.9	1990	6.9	1993	7.1	1996	6.7	1998	6.5
1976	10.7	1977	10.7	1978	9.8	1979	9.2	1982	6.0	1984	5.9	1987	6.8	1989	6.9	1991	6.9	1994	6.8	1997	6.4	1999	6.3
1977	10.4	1978	9.5	1979	8.9	1980	8.9	1983	5.9	1985	7.0	1988	6.4	1990	6.6	1992	6.7	1995	6.4	1998	6.1	2000	6.1
1978	9.3	1979	8.6	1980	8.6	1981	5.7	1984	5.6	1986	6.6	1989	6.4	1991	6.4	1993	6.4	1996	6.1	1999	5.8	2001	5.8
1979	8.3	1980	8.3	1981	5.5	1982	5.5	1985	6.4	1987	6.1	1990	6.2	1992	6.2	1994	6.1	1997	5.8	2000	5.6	2002	5.6
1980	8.0	1981	5.3	1982	5.3	1983	5.3	1986	6.0	1988	5.7	1991	5.9	1993	5.9	1995	5.7	1998	5.4	2001	5.4	2003	5.4
1981	5.1	1982	5.1	1983	5.1	1984	5.0	1987	5.6	1989	5.6	1992	5.7	1994	5.6	1996	5.3	1999	5.1	2002	5.1	2004	5.1
1982	4.9	1983	4.9	1984	4.8	1985	5.6	1988	5.2	1990	5.4	1993	5.4	1995	5.2	1997	5.0	2000	4.8	2003	4.8	2005	4.8
1983	4.7	1984	4.6	1985	5.3	1986	5.2	1989	5.0	1991	5.1	1994	5.0	1996	4.8	1998	4.6	2001	4.6	2004	4.6	2006	4.6
1984	4.4	1985	5.0	1986	4.9	1987	4.7	1990	4.8	1992	4.8	1995	4.6	1997	4.4	1999	4.3	2002	4.3	2005	4.3	2007	4.3
1985	4.6	1986	4.5	1987	4.4	1988	4.4	1991	4.5	1993	4.5	1996	4.2	1998	4.0	2000	4.0	2003	4.0	2006	4.0	2008	4.0
1986	4.2	1987	4.1	1988	4.0	1989	4.1	1992	4.2	1994	4.1	1997	3.8	1999	3.8	2001	3.6	2004	3.6	2007	3.6	2009	3.6
1987	3.7	1988	3.7	1989	3.8	1990	3.8	1993	3.8	1995	3.6	1998	3.3	2000	3.3	2002	3.3	2005	3.3	2008	3.3	2010	3.3
1988	3.3	1989	3.4	1990	3.4	1991	3.4	1994	3.3	1996	3.2	1999	3.0	2001	3.0	2003	3.0	2006	3.0	2009	3.0	2011	3.0
1989	3.0	1990	3.0	1991	3.0	1992	3.0	1995	2.9	1997	2.7	2000	2.6	2002	2.6	2004	2.6	2007	2.6	2010	2.6	2012	2.6
1990	2.6	1991	2.6	1992	2.6	1993	2.6	1996	2.4	1998	2.2	2001	2.2	2003	2.2	2005	2.2	2008	2.2	2011	2.2	2013	2.2
1991	2.2	1992	2.2	1993	2.2	1994	2.1	1997	1.9	1999	1.8	2002	1.8	2004	1.8	2006	1.8	2009	1.8	2012	1.8	2014	1.8
1992	1.7	1993	1.7	1994	1.7	1995	1.6	1998	1.4	2000	1.4	2003	1.4	2005	1.4	2007	1.4	2010	1.4	2013	1.4	2015	1.4
1993	1.3	1994	1.2	1995	1.1	1996	1.1	1999	0.9	2001	0.9	2004	0.9	2006	0.7	2008	0.9	2011	0.9	2014	0.9	2016	0.9
1994	1.0	1995	0.9	1996	0.9	1997	0.8	2000	0.7	2002	0.7	2005	0.7	2007	0.7	2009	0.7	2012	0.7	2015	0.7	2017	0.7
1995	0.8	1996	0.7	1997	0.7	1998	0.6	2001	0.6	2003	0.6	2006	0.6	2008	0.6	2010	0.6	2013	0.6	2016	0.6	2018	0.6
1996	0.6	1997	0.6	1998	0.5	1999	0.5	2002	0.5	2004	0.5	2007	0.5	2009	0.5	2011	0.5	2014	0.5	2017	0.5	2019	0.5
1997	0.5	1998	0.4	1999	0.4	2000	0.4	2003	0.4	2005	0.4	2008	0.4	2010	0.4	2012	0.4	2015	0.4	2018	0.4	2020	0.4

\*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,
- 20.6% of VMT traveled in cold start,
- 52.1% of VMT in stabilized,
- 27.3% of VMT in hot start,
- 60 TO 84F diurnal,
- 75F for hot soak and running loss emissions,
- 9.0 psi fuel RVP,
- 54.57% average in-use fuel tank level, including refueling emissions.

Emissions are based on the January 1 mileage accumulation figures given in Table 1.4A.2

DATE : JUNE 30, 1995

TABLE 2.11B.1  
BY-MODEL-YEAR EMISSION LEVELS FOR LOW ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I  
CO

1985	1986		1987		1988		1989		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**	
1961	122.7	1962	122.7	1963	122.7	1964	122.7	1965	122.7	1966	122.7	1967	122.7	1968	106.7	1969	106.7	1970	103.9	1971	103.9	1972	88.9
1962	121.9	1963	121.9	1964	121.9	1965	121.9	1966	121.9	1967	121.9	1968	105.7	1969	105.7	1970	102.7	1971	102.7	1972	88.0	1973	88.0
1963	121.0	1964	121.0	1965	121.0	1966	121.0	1967	121.0	1968	104.7	1969	104.7	1970	101.5	1971	101.5	1972	87.0	1973	87.0	1974	87.0
1964	120.0	1965	120.0	1966	120.0	1967	120.0	1968	103.6	1969	103.6	1970	100.2	1971	100.2	1972	86.0	1973	86.0	1974	86.0	1975	77.0
1965	119.0	1966	119.0	1967	119.0	1968	119.0	1969	102.5	1970	98.8	1971	98.8	1972	84.9	1973	84.9	1974	84.9	1975	75.8	1976	76.4
1966	117.9	1967	117.9	1968	101.2	1969	101.2	1970	97.3	1971	97.3	1972	83.7	1973	83.7	1974	74.4	1975	74.4	1976	75.0	1977	74.7
1967	116.8	1968	99.9	1969	99.9	1970	95.7	1971	95.7	1972	82.5	1973	82.5	1974	82.5	1975	73.0	1976	73.0	1977	73.3	1978	73.3
1968	98.6	1969	98.6	1970	94.0	1971	94.0	1972	81.2	1973	81.2	1974	81.2	1975	71.5	1976	72.1	1977	71.8	1978	71.8	1979	56.2
1969	97.1	1970	92.2	1971	92.2	1972	79.8	1973	79.8	1974	79.8	1975	69.9	1976	70.5	1977	70.2	1978	70.2	1979	54.7	1980	54.7
1970	90.2	1971	90.2	1972	78.3	1973	78.3	1974	78.3	1975	68.3	1976	68.8	1977	68.5	1978	68.5	1979	53.1	1980	53.1	1981	38.0
1971	88.2	1972	76.7	1973	76.7	1974	76.7	1975	66.5	1976	65.1	1977	66.7	1978	66.7	1979	51.4	1980	51.4	1981	37.0	1982	37.0
1972	75.0	1973	75.0	1974	75.0	1975	64.5	1976	64.5	1977	64.8	1978	64.8	1979	49.6	1980	49.6	1981	35.9	1982	35.9	1983	35.9
1973	73.1	1974	73.1	1975	62.5	1976	63.0	1977	62.8	1978	62.8	1979	47.7	1980	47.7	1981	34.7	1982	34.7	1983	34.7	1984	31.3
1974	71.2	1975	60.3	1976	60.8	1977	60.6	1978	60.6	1979	45.6	1980	45.6	1981	33.4	1982	33.4	1983	33.4	1984	30.0	1985	41.6
1975	58.0	1976	58.5	1977	58.3	1978	58.3	1979	43.4	1980	43.4	1981	32.1	1982	32.1	1983	32.1	1984	28.7	1985	38.3	1986	37.4
1976	56.0	1977	55.8	1978	55.8	1979	41.1	1980	41.1	1981	30.7	1982	30.7	1983	30.7	1984	27.3	1985	34.9	1986	34.0	1987	32.7
1977	53.2	1978	53.2	1979	38.6	1980	38.6	1981	29.2	1982	29.2	1983	29.2	1984	25.8	1985	31.2	1986	30.3	1987	29.2	1988	28.5
1978	50.4	1979	36.0	1980	36.0	1981	27.6	1982	27.6	1983	27.6	1984	24.1	1985	27.3	1986	26.4	1987	25.4	1988	24.8	1989	25.6
1979	33.2	1980	33.2	1981	25.9	1982	25.9	1983	25.9	1984	22.4	1985	23.1	1986	22.2	1987	21.4	1988	21.0	1989	21.6	1990	21.8
1980	30.2	1981	24.0	1982	24.0	1983	24.0	1984	20.6	1985	18.7	1986	17.7	1987	17.2	1988	16.9	1989	17.3	1990	17.6	1991	17.7
1981	22.1	1982	22.1	1983	22.1	1984	18.7	1985	14.0	1986	13.0	1987	12.7	1988	12.5	1989	12.8	1990	13.1	1991	13.1	1992	13.2
1982	20.0	1983	20.0	1984	16.6	1985	11.3	1986	10.5	1987	10.2	1988	10.0	1989	10.2	1990	10.4	1991	10.4	1992	10.4	1993	10.4
1983	17.8	1984	14.4	1985	9.3	1986	8.6	1987	8.3	1988	8.1	1989	8.1	1990	8.2	1991	8.2	1992	8.3	1993	8.3	1994	8.1
1984	12.1	1985	7.2	1986	6.6	1987	6.3	1988	6.0	1989	5.9	1990	5.9	1991	5.9	1992	5.9	1993	5.9	1994	5.8	1995	5.7
1985	5.8	1986	5.3	1987	5.0	1988	4.6	1989	4.6	1990	4.5	1991	4.4	1992	4.4	1993	4.4	1994	4.3	1995	4.2	1996	3.6

\*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,
- 20.6% of VMT traveled in cold start,
- 52.1% of VMT in stabilized,
- 27.3% of VMT in hot start.

Emissions are based on the January 1 mileage accumulation figures given in Table 1.4A.2

Continued on the next page.

TABLE 2.11B.1 (continued)  
 BY-MODEL-YEAR EMISSION LEVELS FOR LOW ALTITUDE  
 LIGHT DUTY GASOLINE POWERED TRUCKS I  
 CO

	January 1 of Calendar Year																						
	1997	1998	1999	2000	2003	2005	2008	2010	2012	2015	2018	2020											
	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**									
1973	88.9	1974	88.9	1975	80.3	1976	80.9	1979	64.5	1981	44.9	1984	41.5	1986	68.8	1988	64.0	1991	66.7	1994	66.9	1996	66.2
1974	88.0	1975	79.3	1976	79.9	1977	79.6	1980	63.5	1982	44.4	1985	68.2	1987	64.6	1989	65.0	1992	65.6	1995	65.3	1997	64.3
1975	78.2	1976	78.8	1977	78.5	1978	78.5	1981	43.7	1983	43.7	1986	65.8	1988	61.2	1990	63.6	1993	64.1	1996	63.3	1998	62.6
1976	77.6	1977	77.3	1978	77.3	1979	61.4	1982	43.1	1984	39.6	1987	61.6	1989	61.9	1991	62.2	1994	62.4	1997	61.3	1999	61.0
1977	76.1	1978	76.1	1979	60.2	1980	60.2	1983	42.3	1985	63.2	1988	58.1	1990	60.3	1992	60.8	1995	60.6	1998	59.3	2000	59.3
1978	74.7	1979	59.0	1980	41.6	1981	41.6	1984	38.1	1986	60.5	1989	58.5	1991	58.8	1993	59.0	1996	58.3	1999	57.5	2001	57.5
1979	57.6	1980	57.6	1981	40.8	1982	40.8	1985	59.4	1987	56.2	1990	56.7	1992	57.1	1994	57.0	1997	55.9	2000	55.6	2002	55.6
1980	56.2	1981	39.9	1982	39.9	1983	39.9	1986	56.5	1988	52.6	1991	54.9	1993	55.1	1995	54.9	1998	53.6	2001	53.6	2003	53.6
1981	39.0	1982	39.0	1983	39.0	1984	35.6	1987	52.1	1989	52.4	1992	53.0	1994	52.8	1996	52.2	1999	51.5	2002	51.5	2004	51.5
1982	38.0	1983	38.0	1984	34.6	1985	52.7	1988	48.4	1990	50.2	1993	50.7	1995	50.4	1997	49.4	2000	49.2	2003	49.2	2005	49.2
1983	37.0	1984	33.5	1985	50.2	1986	49.3	1989	47.7	1991	48.0	1994	48.1	1996	47.4	1998	46.7	2001	46.7	2004	46.7	2006	46.7
1984	32.4	1985	47.5	1986	46.6	1987	44.8	1990	45.2	1992	45.6	1995	45.3	1997	44.3	1999	44.1	2002	44.1	2005	44.1	2007	44.1
1985	44.6	1986	43.7	1987	42.0	1988	40.9	1991	42.6	1993	42.8	1996	42.0	1998	41.3	2000	41.3	2003	41.3	2006	41.3	2008	41.3
1986	40.7	1987	39.1	1988	38.1	1989	39.4	1992	39.9	1994	39.8	1997	38.6	1999	38.4	2001	38.4	2004	38.4	2007	38.4	2009	38.4
1987	36.0	1988	35.1	1989	36.3	1990	36.4	1993	36.7	1995	36.5	1998	35.2	2000	35.2	2002	35.2	2005	35.2	2008	35.2	2010	35.2
1988	31.9	1989	32.9	1990	33.1	1991	33.3	1994	33.3	1996	32.6	1999	31.9	2001	31.9	2003	31.9	2006	31.9	2009	31.9	2011	31.9
1989	29.4	1990	29.6	1991	29.7	1992	29.8	1995	29.6	1997	28.6	2000	28.3	2002	28.3	2004	28.3	2007	28.3	2010	28.3	2012	28.3
1990	25.8	1991	25.9	1992	26.1	1993	26.1	1996	25.3	1998	24.6	2001	24.6	2003	24.6	2005	24.6	2008	24.6	2011	24.6	2013	24.6
1991	21.9	1992	22.0	1993	22.0	1994	21.9	1997	20.8	1999	20.5	2002	20.5	2004	20.5	2006	20.5	2009	20.5	2012	20.5	2014	20.5
1992	17.7	1993	17.7	1994	17.6	1995	17.5	1998	16.2	2000	16.2	2003	16.2	2005	16.2	2007	16.2	2010	16.2	2013	16.2	2015	16.2
1993	13.2	1994	13.1	1995	12.9	1996	12.4	1999	11.7	2001	11.7	2004	11.7	2006	11.7	2008	11.7	2011	11.7	2014	11.7	2016	11.7
1994	10.3	1995	10.2	1996	9.7	1997	9.2	2000	8.9	2002	8.9	2005	8.9	2007	8.9	2009	8.9	2012	8.9	2015	8.9	2017	8.9
1995	8.0	1996	7.5	1997	7.0	1998	6.8	2001	6.8	2003	6.8	2006	6.8	2008	6.8	2010	6.8	2013	6.8	2016	6.8	2018	6.8
1996	5.2	1997	4.7	1998	4.4	1999	4.4	2002	4.4	2004	4.4	2007	4.4	2009	4.4	2011	4.4	2014	4.4	2017	4.4	2019	4.4
1997	3.2	1998	2.9	1999	2.9	2000	2.9	2003	2.9	2005	2.9	2008	2.9	2010	2.9	2012	2.9	2015	2.9	2018	2.9	2020	2.9

\*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,
- 20.6% of VMT traveled in cold start,
- 52.1% of VMT in stabilized,
- 27.3% of VMT in hot start.

Emissions are based on the January 1 mileage accumulation figures given in Table 1.4A.2

TABLE 2.11C.1  
 BY-MODEL-YEAR EMISSION LEVELS FOR LOW ALTITUDE  
 LIGHT DUTY GASOLINE POWERED TRUCKS I  
 NOx

DATE : JUNE 30, 1995

1985	1986		1987		1988		1989		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**	
1961	3.4	1962	3.4	1963	3.4	1964	3.4	1965	3.4	1966	3.4	1967	3.4	1968	4.3	1969	4.3	1970	4.3	1971	4.3	1972	4.3
1962	3.4	1963	3.4	1964	3.4	1965	3.4	1966	3.4	1967	3.4	1968	4.3	1969	4.3	1970	4.3	1971	4.3	1972	4.3	1973	4.3
1963	3.4	1964	3.4	1965	3.4	1966	3.4	1967	3.4	1968	4.3	1969	4.3	1970	4.3	1971	4.3	1972	4.3	1973	4.3	1974	3.6
1964	3.4	1965	3.4	1966	3.4	1967	3.4	1968	4.3	1969	4.3	1970	4.3	1971	4.3	1972	4.3	1973	3.6	1974	3.6	1975	3.3
1965	3.4	1966	3.4	1967	3.4	1968	4.3	1969	4.3	1970	4.3	1971	4.3	1972	4.3	1973	3.6	1974	3.6	1975	3.2	1976	3.2
1966	3.4	1967	3.4	1968	4.3	1969	4.3	1970	4.3	1971	4.3	1972	4.3	1973	3.6	1974	3.6	1975	3.2	1976	3.2	1977	3.2
1967	3.4	1968	4.3	1969	4.3	1970	4.3	1971	4.3	1972	4.3	1973	3.6	1974	3.6	1975	3.2	1976	3.2	1977	3.2	1978	3.2
1968	4.3	1969	4.3	1970	4.3	1971	4.3	1972	4.3	1973	3.5	1974	3.5	1975	3.2	1976	3.2	1977	3.2	1978	3.2	1979	2.7
1969	4.3	1970	4.3	1971	4.3	1972	4.3	1973	3.5	1974	3.5	1975	3.2	1976	3.2	1977	3.2	1978	3.2	1979	2.7	1980	2.7
1970	4.3	1971	4.3	1972	4.3	1973	4.3	1974	3.5	1975	3.5	1976	3.2	1977	3.2	1978	3.2	1979	2.7	1980	2.7	1981	2.1
1971	4.3	1972	4.3	1973	3.5	1974	3.5	1975	3.1	1976	3.1	1977	3.1	1978	3.1	1979	2.6	1980	2.6	1981	2.1	1982	2.1
1972	4.3	1973	3.4	1974	3.4	1975	3.1	1976	3.1	1977	3.1	1978	3.1	1979	2.6	1980	2.6	1981	2.1	1982	2.1	1983	2.1
1973	3.4	1974	3.4	1975	3.1	1976	3.1	1977	3.1	1978	3.1	1979	2.6	1980	2.6	1981	2.0	1982	2.0	1983	2.1	1984	2.1
1974	3.4	1975	3.1	1976	3.1	1977	3.1	1978	3.1	1979	2.5	1980	2.5	1981	2.0	1982	2.0	1983	2.1	1984	2.1	1985	3.3
1975	3.0	1976	3.0	1977	3.0	1978	3.0	1979	2.5	1980	2.5	1981	2.0	1982	2.0	1983	2.0	1984	2.0	1985	3.0	1986	3.0
1976	3.0	1977	3.0	1978	3.0	1979	2.4	1980	2.4	1981	2.0	1982	2.0	1983	2.0	1984	1.9	1985	2.9	1986	2.8	1987	2.8
1977	3.0	1978	3.0	1979	2.3	1980	2.3	1981	1.9	1982	1.9	1983	1.9	1984	1.9	1985	2.7	1986	2.8	1987	2.6	1988	2.4
1978	3.0	1979	2.3	1980	2.3	1981	1.9	1982	1.9	1983	1.9	1984	1.8	1985	2.4	1986	2.4	1987	2.3	1988	2.1	1989	2.1
1979	2.2	1980	2.2	1981	1.9	1982	1.9	1983	1.9	1984	1.7	1985	2.2	1986	2.1	1987	2.1	1988	1.9	1989	1.8	1990	1.8
1980	2.2	1981	1.8	1982	1.8	1983	1.9	1984	1.6	1985	1.9	1986	1.9	1987	1.8	1988	1.6	1989	1.6	1990	1.5	1991	1.5
1981	1.8	1982	1.8	1983	1.8	1984	1.6	1985	1.7	1986	1.6	1987	1.5	1988	1.3	1989	1.3	1990	1.3	1991	1.3	1992	1.3
1982	1.8	1983	1.8	1984	1.5	1985	1.5	1986	1.4	1987	1.3	1988	1.2	1989	1.1	1990	1.1	1991	1.1	1992	1.1	1993	1.1
1983	1.8	1984	1.4	1985	1.4	1986	1.3	1987	1.2	1988	1.0	1989	1.0	1990	1.0	1991	1.0	1992	1.0	1993	1.0	1994	0.8
1984	1.3	1985	1.3	1986	1.2	1987	1.1	1988	0.9	1989	0.9	1990	0.8	1991	0.8	1992	0.8	1993	0.8	1994	0.7	1995	0.5
1985	1.2	1986	1.1	1987	1.0	1988	0.8	1989	0.8	1990	0.8	1991	0.7	1992	0.7	1993	0.7	1994	0.6	1995	0.4	1996	0.3

\*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,
- 20.6% of VMT traveled in cold start,
- 52.1% of VMT in stabilized,
- 27.3% of VMT in hot start.

Emissions are based on the January 1 mileage accumulation figures given in Table 1.4A.2

Continued on the next page.

TABLE 2.11C.1 (continued)  
 BY-MODEL-YEAR EMISSION LEVELS FOR LOW ALTITUDE  
 LIGHT DUTY GASOLINE POWERED TRUCKS I  
 NOx

	January 1 of Calendar Year																								
	1997	1998	1999	2000	2003	2005	2008	2010	2012	2015	2018	2020													
	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**											
1973	3.7	1974	3.7	1975	3.3	1976	3.3	1977	2.9	1979	2.2	1984	4.9	1988	4.7	1991	4.4	1994	4.3	1995	4.2	1996	3.9	1997	3.9
1974	3.6	1975	3.3	1976	3.3	1977	3.3	1978	2.9	1980	2.2	1985	4.9	1989	4.5	1992	4.3	1995	4.3	1996	4.2	1996	3.7	1998	3.8
1975	3.3	1976	3.3	1977	3.3	1978	3.3	1979	2.2	1981	2.5	1986	4.5	1990	4.7	1993	4.2	1996	4.2	1996	4.2	1996	3.7	1998	3.7
1976	3.3	1977	3.3	1978	3.3	1979	2.8	1980	2.2	1982	2.5	1987	4.3	1991	4.1	1994	3.9	1997	3.9	1997	3.7	1998	3.7	1999	3.7
1977	3.2	1978	3.2	1979	2.8	1980	2.8	1981	2.2	1983	4.5	1988	4.1	1992	4.0	1995	3.6	1998	3.6	1998	3.6	2000	3.6	2000	3.6
1978	3.2	1979	2.8	1980	2.8	1981	2.2	1982	2.4	1984	4.4	1989	3.9	1993	3.9	1996	3.5	1999	3.5	1999	3.5	2001	3.5	2001	3.5
1979	2.8	1980	2.8	1981	2.1	1982	2.2	1983	4.3	1985	4.4	1990	3.8	1994	3.6	1997	3.3	2000	3.3	2000	3.3	2002	3.3	2002	3.3
1980	2.7	1981	2.1	1982	2.1	1983	2.2	1984	4.2	1986	4.0	1991	3.7	1995	3.7	1998	3.2	2001	3.2	2001	3.2	2003	3.2	2003	3.2
1981	2.1	1982	2.1	1983	2.2	1984	2.3	1985	4.1	1987	3.7	1992	3.4	1996	3.1	1999	3.1	2002	3.1	2002	3.1	2004	3.1	2004	3.1
1982	2.1	1983	2.1	1984	2.3	1985	3.9	1986	3.7	1988	3.5	1993	3.1	1997	3.0	2000	3.0	2003	3.0	2003	3.0	2005	3.0	2005	3.0
1983	2.1	1984	2.2	1985	3.8	1986	3.7	1987	3.4	1989	3.3	1994	2.8	1998	2.8	2001	2.8	2004	2.8	2004	2.8	2006	2.8	2006	2.8
1984	2.2	1985	3.6	1986	3.6	1987	3.6	1988	3.2	1990	3.1	1995	2.7	1999	2.7	2002	2.7	2005	2.7	2005	2.7	2007	2.7	2007	2.7
1985	3.4	1986	3.4	1987	3.4	1988	3.2	1989	3.0	1991	3.0	1996	2.5	2000	2.5	2003	2.5	2006	2.5	2006	2.5	2008	2.5	2008	2.5
1986	3.2	1987	3.2	1988	3.0	1989	2.9	1990	2.8	1992	2.6	1997	2.4	2001	2.4	2004	2.4	2007	2.4	2007	2.4	2009	2.4	2009	2.4
1987	3.0	1988	2.8	1989	2.7	1990	2.7	1991	2.6	1993	2.7	1998	2.2	2002	2.2	2005	2.2	2008	2.2	2008	2.2	2010	2.2	2010	2.2
1988	2.6	1989	2.5	1990	2.5	1991	2.4	1992	2.3	1994	2.0	1999	2.0	2003	2.0	2006	2.0	2009	2.0	2009	2.0	2011	2.0	2011	2.0
1989	2.3	1990	2.2	1991	2.2	1992	2.2	1993	1.9	1995	1.8	2000	1.8	2004	1.8	2007	1.8	2010	1.8	2010	1.8	2012	1.8	2012	1.8
1990	2.0	1991	2.0	1992	2.0	1993	2.0	1994	1.6	1996	1.6	2001	1.6	2005	1.6	2008	1.6	2011	1.6	2011	1.6	2013	1.6	2013	1.6
1991	1.8	1992	1.8	1993	1.8	1994	1.6	1995	1.3	1997	1.3	2002	1.3	2006	1.3	2009	1.3	2012	1.3	2012	1.3	2014	1.3	2014	1.3
1992	1.5	1993	1.5	1994	1.4	1995	1.2	1996	1.1	1998	1.1	2003	1.1	2007	1.1	2010	1.1	2013	1.1	2013	1.1	2015	1.1	2015	1.1
1993	1.3	1994	1.1	1995	0.9	1996	0.8	1997	0.8	1999	0.8	2004	0.8	2008	0.8	2011	0.8	2014	0.8	2014	0.8	2016	0.8	2016	0.8
1994	0.9	1995	0.7	1996	0.7	1997	0.7	1998	0.7	2000	0.7	2005	0.7	2009	0.7	2012	0.7	2015	0.7	2015	0.7	2017	0.7	2017	0.7
1995	0.6	1996	0.5	1997	0.5	1998	0.5	1999	0.5	2001	0.5	2006	0.5	2010	0.5	2013	0.5	2016	0.5	2016	0.5	2018	0.5	2018	0.5
1996	0.4	1997	0.4	1998	0.4	1999	0.4	2000	0.4	2002	0.4	2007	0.4	2011	0.4	2014	0.4	2017	0.4	2017	0.4	2019	0.4	2019	0.4
1997	0.3	1998	0.3	1999	0.3	2000	0.3	2003	0.3	2005	0.3	2008	0.3	2012	0.3	2015	0.3	2018	0.3	2018	0.3	2020	0.3	2020	0.3

\*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,
- 20.6% of VMT traveled in cold start,
- 52.1% of VMT in stabilized,
- 27.3% of VMT in hot start.

Emissions are based on the January 1 mileage accumulation figures given in Table 1.4A.2

DATE : JUNE 30, 1995

TABLE 2.11A.2  
 BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE  
 LIGHT DUTY GASOLINE POWERED TRUCKS I  
 TOTAL NONMETHANE HC

1985	1986		1987		1988		1989		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**	
1961	25.4	1962	25.4	1963	21.1	1964	21.1	1965	21.1	1966	21.1	1967	21.1	1968	17.7	1969	17.7	1970	17.7	1971	17.7	1972	17.7
1962	25.0	1963	20.8	1964	20.8	1965	20.8	1966	20.8	1967	20.8	1968	17.3	1969	17.3	1970	17.3	1971	18.3	1972	18.3	1973	18.3
1963	20.4	1964	20.4	1965	20.4	1966	20.4	1967	20.4	1968	16.6	1969	16.9	1970	17.3	1971	17.3	1972	11.3	1973	11.3	1974	11.3
1964	20.0	1965	20.0	1966	20.0	1967	20.0	1968	16.6	1969	16.6	1970	17.8	1971	17.3	1972	11.0	1973	11.0	1974	11.0	1975	11.0
1965	19.7	1966	19.7	1967	19.7	1968	16.2	1969	16.2	1970	17.3	1971	16.8	1972	10.7	1973	10.7	1974	10.7	1975	10.7	1976	10.7
1966	19.4	1967	19.4	1968	15.8	1969	15.8	1970	16.9	1971	18.1	1972	10.5	1973	10.5	1974	10.5	1975	12.0	1976	12.0	1977	12.0
1967	19.1	1968	15.5	1969	15.5	1970	16.5	1971	17.5	1972	10.2	1973	10.2	1974	10.2	1975	11.7	1976	11.8	1977	11.8	1978	11.8
1968	15.1	1969	15.1	1970	16.1	1971	17.0	1972	9.9	1973	9.9	1974	9.9	1975	11.3	1976	11.3	1977	9.1	1978	9.1	1979	9.1
1969	14.8	1970	15.7	1971	16.4	1972	9.4	1973	9.7	1974	9.7	1975	11.0	1976	11.1	1977	8.5	1978	8.4	1979	8.4	1980	8.4
1970	15.2	1971	15.9	1972	9.4	1973	9.4	1974	9.4	1975	10.7	1976	10.8	1977	8.5	1978	8.5	1979	10.6	1980	10.6	1981	10.6
1971	15.3	1972	9.2	1973	9.2	1974	9.2	1975	10.3	1976	10.4	1977	8.1	1978	9.9	1979	9.9	1980	8.1	1981	8.1	1982	8.1
1972	8.9	1973	8.9	1974	8.9	1975	10.0	1976	10.1	1977	8.5	1978	9.6	1979	7.8	1980	7.8	1981	6.3	1982	6.3	1983	6.3
1973	8.6	1974	8.6	1975	9.6	1976	9.7	1977	8.1	1978	9.9	1979	7.4	1980	7.4	1981	6.1	1982	4.6	1983	4.6	1984	4.6
1974	8.4	1975	9.2	1976	9.3	1977	7.7	1978	9.5	1979	7.6	1980	7.0	1981	5.8	1982	4.4	1983	4.4	1984	4.4	1985	4.4
1975	8.8	1976	8.9	1977	7.3	1978	9.1	1979	7.2	1980	7.2	1981	5.6	1982	4.1	1983	4.1	1984	4.2	1985	4.2	1986	4.2
1976	8.5	1977	6.8	1978	8.7	1979	6.8	1980	6.8	1981	5.4	1982	3.9	1983	3.9	1984	3.9	1985	3.8	1986	3.8	1987	3.8
1977	6.4	1978	8.2	1979	6.3	1980	6.3	1981	5.2	1982	3.7	1983	3.6	1984	3.6	1985	3.6	1986	3.4	1987	3.4	1988	3.4
1978	7.8	1979	5.9	1980	5.9	1981	4.9	1982	3.5	1983	3.5	1984	3.4	1985	3.0	1986	2.9	1987	2.9	1988	2.9	1989	2.9
1979	5.4	1980	5.4	1981	4.6	1982	4.6	1983	3.2	1984	3.2	1985	2.5	1986	2.4	1987	2.4	1988	2.3	1989	2.3	1990	2.3
1980	4.9	1981	4.3	1982	2.9	1983	2.9	1984	2.9	1985	2.1	1986	1.9	1987	1.9	1988	1.9	1989	1.8	1990	1.8	1991	1.8
1981	4.0	1982	2.6	1983	2.6	1984	2.6	1985	1.6	1986	1.5	1987	1.4	1988	1.4	1989	1.4	1990	1.4	1991	1.4	1992	1.4
1982	2.3	1983	2.3	1984	2.3	1985	1.4	1986	1.3	1987	1.2	1988	1.2	1989	1.2	1990	1.2	1991	1.2	1992	1.2	1993	1.2
1983	2.0	1984	2.0	1985	1.2	1986	1.2	1987	1.1	1988	1.1	1989	1.1	1990	1.1	1991	1.1	1992	1.1	1993	1.1	1994	1.1
1984	1.8	1985	1.1	1986	1.0	1987	1.0	1988	0.9	1989	0.9	1990	0.9	1991	0.9	1992	0.9	1993	0.9	1994	0.9	1995	0.9
1985	1.0	1986	0.9	1987	0.9	1988	0.9	1989	0.9	1990	0.8	1991	0.8	1992	0.8	1993	0.8	1994	0.8	1995	0.8	1996	0.8

\*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,

20.6% of VMT traveled in cold start,

52.1% of VMT in stabilized,

27.3% of VMT in hot start,

60 TO 84F diurnal,

75F for hot soak and running loss emissions,

9.0 psi fuel RVP,

54.57% average in-use fuel tank level, including refueling emissions.

Emissions are based on the January 1 mileage accumulation figures given in Table 2.4A.2

Continued on the next page.

TABLE 2.11A.2 (continued)  
 BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE  
 LIGHT DUTY GASOLINE POWERED TRUCKS I  
 TOTAL NONMETHANE HC

	January 1 of Calendar Year																						
	1997	1998	1999	2000	2003	2005	2008	2010	2012	2015	2018	2020											
	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**									
1973	11.8	1974	11.8	1975	13.6	1976	13.8	1979	11.3	1981	8.6	1984	7.2	1986	8.3	1988	7.7	1991	7.9	1994	7.7	1996	7.5
1974	11.5	1975	13.3	1976	13.4	1977	11.0	1980	11.0	1982	7.0	1985	8.2	1987	7.7	1989	7.7	1992	7.7	1995	7.4	1997	7.2
1975	13.0	1976	13.1	1977	10.7	1978	12.5	1981	8.2	1983	6.8	1986	7.2	1988	7.3	1990	7.5	1993	7.5	1996	7.0	1998	6.8
1976	12.8	1977	10.4	1978	12.1	1979	10.4	1982	6.6	1984	6.6	1987	7.2	1989	7.2	1991	7.2	1994	7.0	1997	6.7	1999	6.5
1977	10.1	1978	11.8	1979	10.0	1980	10.0	1983	6.4	1985	7.4	1988	6.8	1990	7.0	1992	7.0	1995	6.7	1998	6.3	2000	6.3
1978	11.5	1979	9.7	1980	9.7	1981	7.6	1984	6.2	1986	6.9	1989	6.7	1991	6.7	1993	6.8	1996	6.0	1999	6.0	2001	6.0
1979	9.4	1980	9.4	1981	7.4	1982	6.0	1985	6.8	1987	6.5	1990	6.5	1992	6.5	1994	6.3	1997	6.0	2000	5.8	2002	5.8
1980	9.1	1981	7.2	1982	5.7	1983	5.7	1986	6.4	1988	6.2	1991	6.2	1993	6.2	1995	5.9	1998	5.9	2001	5.5	2003	5.5
1981	7.0	1982	5.5	1983	5.5	1984	5.6	1987	5.9	1989	5.9	1992	6.0	1994	5.7	1996	5.5	1999	5.3	2002	5.3	2004	5.3
1982	5.3	1983	5.3	1984	5.3	1985	5.3	1988	5.9	1988	5.6	1993	5.7	1995	5.4	1997	5.1	2000	5.0	2003	5.0	2005	5.0
1983	5.1	1984	5.1	1985	5.6	1986	5.5	1989	5.3	1991	5.3	1994	5.2	1996	4.9	1998	4.7	2001	4.7	2004	4.7	2006	4.7
1984	4.9	1985	5.3	1986	5.1	1987	5.0	1990	5.0	1992	5.0	1995	4.7	1997	4.5	1999	4.4	2002	4.4	2005	4.4	2007	4.4
1985	4.9	1986	4.8	1987	4.7	1988	4.5	1991	4.7	1993	4.7	1996	4.3	1998	4.1	2000	4.1	2003	4.1	2006	4.1	2008	4.1
1986	4.5	1987	4.3	1988	4.2	1989	4.3	1992	4.4	1994	4.2	1997	3.9	1999	3.7	2001	3.7	2004	3.7	2007	3.7	2009	3.7
1987	4.0	1988	3.9	1989	4.0	1990	4.0	1993	4.0	1995	3.7	1998	3.4	2000	3.4	2002	3.4	2005	3.4	2008	3.4	2010	3.4
1988	3.5	1989	3.6	1990	3.6	1991	3.6	1994	3.4	1996	3.2	1999	3.0	2001	3.0	2003	3.0	2006	3.0	2009	3.0	2011	3.0
1989	3.2	1990	3.2	1991	3.2	1992	3.2	1995	3.0	1997	2.8	2000	2.7	2002	2.7	2004	2.7	2007	2.7	2010	2.7	2012	2.7
1990	2.8	1991	2.8	1992	2.8	1993	2.8	1996	2.5	1998	2.3	2001	2.3	2003	2.3	2005	2.3	2008	2.3	2011	2.3	2013	2.3
1991	2.4	1992	2.4	1993	2.4	1994	2.2	1997	2.0	1999	1.8	2002	1.8	2004	1.8	2006	1.8	2009	1.8	2012	1.8	2014	1.8
1992	1.9	1993	1.9	1994	1.7	1995	1.7	1998	1.4	2000	1.4	2003	1.4	2005	1.4	2007	1.4	2010	1.4	2013	1.4	2015	1.4
1993	1.4	1994	1.2	1995	1.2	1996	1.1	1999	0.9	2001	0.9	2004	0.9	2006	0.9	2008	0.9	2011	0.9	2014	0.9	2016	0.9
1994	1.0	1995	1.0	1996	0.9	1997	0.8	2000	0.7	2002	0.7	2005	0.7	2007	0.7	2009	0.7	2012	0.7	2015	0.7	2017	0.7
1995	0.8	1996	0.8	1997	0.7	1998	0.6	2001	0.6	2003	0.6	2006	0.6	2008	0.6	2010	0.6	2013	0.6	2016	0.6	2018	0.6
1996	0.6	1997	0.6	1998	0.5	1999	0.5	2002	0.5	2004	0.5	2007	0.5	2009	0.5	2011	0.5	2014	0.5	2017	0.5	2019	0.5
1997	0.5	1998	0.4	1999	0.4	2000	0.4	2003	0.4	2005	0.4	2008	0.4	2010	0.4	2012	0.4	2015	0.4	2018	0.4	2020	0.4

\*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,
- 20.6% of VMT traveled in cold start,
- 52.1% of VMT in stabilized,
- 27.3% of VMT in hot start,
- 60 TO 84F diurnal,
- 75F for hot soak and running loss emissions,
- 9.0 psi fuel RVP,
- 54.57% average in-use fuel tank level, including refueling emissions.

Emissions are based on the January 1 mileage accumulation figures given in Table 2.4A.2

TABLE 2.11B.2  
BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE  
LIGHT DUTY GASOLINE POWERED TRUCKS I  
CO

DATE : JUNE 30, 1995

MY*	January 1 of Calendar Year																								
	1985		1986		1987		1988		1989		1990		1991		1992		1993		1994		1995		1996		
	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	
1961	162.1	1962	162.1	1963	162.1	1964	162.1	1965	162.1	1966	162.1	1967	162.1	1968	162.1	1969	162.1	1970	162.1	1971	162.1	1972	162.1	1973	162.1
1962	161.3	1963	161.3	1964	161.3	1965	161.3	1966	161.3	1967	161.3	1968	129.1	1969	129.1	1970	140.2	1971	140.2	1972	140.2	1973	140.2	1974	140.2
1963	160.4	1964	160.4	1965	160.4	1966	160.4	1967	160.4	1968	128.2	1969	128.2	1970	139.0	1971	139.0	1972	121.9	1973	121.9	1974	121.9	1975	121.9
1964	159.4	1965	159.4	1966	159.4	1967	159.4	1968	127.3	1969	127.3	1970	137.6	1971	137.6	1972	120.9	1973	120.9	1974	120.9	1975	112.5	1976	112.5
1965	158.4	1966	158.4	1967	158.4	1968	126.2	1969	126.2	1970	136.2	1971	136.2	1972	119.8	1973	119.8	1974	119.8	1975	111.3	1976	111.3	1977	112.2
1966	157.4	1967	157.4	1968	125.2	1969	125.2	1970	134.7	1971	134.7	1972	118.6	1973	118.6	1974	118.6	1975	109.9	1976	110.8	1977	110.8	1978	110.8
1967	156.2	1968	124.0	1969	124.0	1970	133.1	1971	133.1	1972	117.3	1973	117.3	1974	117.3	1975	108.5	1976	109.4	1977	71.5	1978	104.3	1979	104.3
1968	122.8	1969	122.8	1970	131.4	1971	131.4	1972	116.0	1973	116.0	1974	116.0	1975	107.0	1976	107.9	1977	70.0	1978	102.8	1979	90.5	1980	90.5
1969	121.5	1970	129.6	1971	129.6	1972	114.6	1973	114.6	1974	114.6	1975	105.5	1976	106.3	1977	68.4	1978	101.2	1979	89.0	1980	89.0	1981	89.0
1970	127.7	1971	127.7	1972	113.1	1973	113.1	1974	113.1	1975	103.8	1976	104.6	1977	66.7	1978	95.5	1979	87.4	1980	87.4	1981	87.4	1982	87.4
1971	125.6	1972	111.5	1973	111.5	1974	111.5	1975	102.0	1976	102.8	1977	64.9	1978	97.6	1979	85.7	1980	85.7	1981	76.6	1982	56.1	1983	56.1
1972	109.8	1973	109.8	1974	109.8	1975	100.0	1976	100.9	1977	63.0	1978	95.7	1979	83.8	1980	83.8	1981	75.5	1982	55.0	1983	55.0	1984	55.0
1973	108.0	1974	108.0	1975	98.0	1976	98.8	1977	61.0	1978	93.7	1979	81.9	1980	81.9	1981	74.4	1982	53.8	1983	53.8	1984	46.4	1985	46.4
1974	106.1	1975	95.8	1976	96.6	1977	58.8	1978	91.5	1979	79.8	1980	79.8	1981	73.1	1982	52.5	1983	52.5	1984	45.1	1985	43.8	1986	43.8
1975	93.5	1976	94.3	1977	56.5	1978	89.2	1979	77.7	1980	77.7	1981	71.8	1982	51.2	1983	51.2	1984	43.8	1985	40.5	1986	39.5	1987	39.5
1976	91.8	1977	54.0	1978	86.7	1979	75.3	1980	75.3	1981	70.4	1982	49.8	1983	49.8	1984	42.4	1985	37.1	1986	36.0	1987	34.6	1988	34.6
1977	51.4	1978	84.1	1979	72.8	1980	72.8	1981	68.8	1982	48.3	1983	48.3	1984	40.9	1985	33.4	1986	32.3	1987	31.1	1988	30.2	1989	30.2
1978	81.3	1979	70.2	1980	70.2	1981	67.2	1982	46.7	1983	46.7	1984	39.3	1985	29.5	1986	28.4	1987	27.3	1988	26.6	1989	27.3	1990	27.3
1979	67.4	1980	67.4	1981	65.5	1982	45.0	1983	45.0	1984	37.6	1985	25.3	1986	24.2	1987	23.3	1988	22.7	1989	23.3	1990	23.5	1991	23.5
1980	64.4	1981	63.7	1982	43.1	1983	43.1	1984	35.7	1985	20.9	1986	19.8	1987	19.1	1988	18.6	1989	19.0	1990	19.3	1991	19.3	1992	19.3
1981	61.8	1982	41.2	1983	41.2	1984	33.8	1985	16.2	1986	15.0	1987	14.6	1988	14.3	1989	14.5	1990	14.7	1991	14.8	1992	14.8	1993	14.8
1982	39.1	1983	39.1	1984	31.7	1985	13.5	1986	12.5	1987	12.1	1988	11.7	1989	11.9	1990	12.0	1991	12.1	1992	12.1	1993	12.1	1994	12.1
1983	36.9	1984	29.5	1985	11.5	1986	10.6	1987	10.2	1988	9.8	1989	9.8	1990	9.9	1991	9.9	1992	9.9	1993	9.9	1994	8.1	1995	8.1
1984	27.2	1985	9.4	1986	8.6	1987	8.2	1988	7.7	1989	7.7	1990	7.6	1991	7.6	1992	7.6	1993	7.6	1994	7.6	1995	5.7	1996	5.7
1985	8.0	1986	7.3	1987	6.9	1988	6.4	1989	6.3	1990	6.1	1991	6.1	1992	6.1	1993	6.1	1994	4.3	1995	4.2	1996	3.6	1997	3.6

\*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,  
20.6% of VMT traveled in cold start,  
52.1% of VMT in stabilized,  
27.3% of VMT in hot start.

Emissions are based on the January 1 mileage accumulation figures given in Table 2.4A.2  
Continued on the next page.



TABLE 2.11B.2 (continued)  
 BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE  
 LIGHT DUTY GASOLINE POWERED TRUCKS I  
 CO

	January 1 of Calendar Year																						
	1997	1998	1999	2000	2003	2005	2008	2010	2012	2015	2018	2020											
	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**									
1973	123.8	1974	123.8	1975	115.8	1976	116.7	1979	98.8	1981	84.6	1984	56.6	1986	70.8	1988	65.7	1991	68.3	1994	66.9	1996	66.2
1974	122.9	1975	114.8	1976	115.7	1977	77.8	1980	97.8	1982	63.4	1985	70.4	1987	66.5	1989	66.7	1992	67.2	1995	65.3	1997	64.3
1975	113.7	1976	114.6	1977	76.7	1978	109.4	1981	83.4	1983	62.8	1986	67.8	1988	63.0	1990	65.2	1993	65.8	1996	63.3	1998	62.6
1976	113.4	1977	75.5	1978	108.2	1979	95.6	1982	82.1	1984	54.7	1987	63.4	1989	63.7	1991	63.9	1994	62.4	1997	61.3	1999	61.0
1977	74.3	1978	107.0	1979	94.5	1980	94.5	1983	61.4	1985	65.5	1988	59.9	1990	62.0	1992	62.5	1995	60.6	1998	59.3	2000	59.3
1978	105.7	1979	93.2	1980	93.2	1981	81.2	1984	53.3	1986	62.6	1989	60.2	1991	60.4	1993	60.7	1996	58.3	1999	57.5	2001	57.5
1979	91.9	1980	91.9	1981	80.4	1982	59.9	1985	61.6	1987	58.1	1990	58.3	1992	58.8	1994	57.0	1997	55.9	2000	55.6	2002	55.6
1980	90.5	1981	79.6	1982	59.0	1983	59.0	1986	58.5	1988	54.4	1991	56.5	1993	56.8	1995	54.9	1998	53.6	2001	53.6	2003	53.6
1981	78.7	1982	58.1	1983	58.1	1984	50.7	1987	54.0	1989	54.1	1992	54.6	1994	52.8	1996	52.2	1999	51.5	2002	51.5	2004	51.5
1982	57.1	1983	57.1	1984	49.7	1985	54.9	1988	50.1	1990	51.9	1993	52.3	1995	50.4	1997	49.4	2000	49.2	2003	49.2	2005	49.2
1983	56.1	1984	48.7	1985	52.4	1986	51.3	1989	49.4	1991	49.6	1994	48.1	1996	47.4	1998	46.7	2001	46.7	2004	46.7	2006	46.7
1984	47.6	1985	49.7	1986	48.6	1987	46.7	1990	46.9	1992	47.3	1995	45.3	1997	44.3	1999	44.1	2002	44.1	2005	44.1	2007	44.1
1985	46.8	1986	45.8	1987	43.9	1988	42.6	1991	44.3	1993	44.5	1996	42.0	1998	41.3	2000	41.3	2003	41.3	2006	41.3	2008	41.3
1986	42.7	1987	41.0	1988	39.8	1989	41.1	1992	41.5	1994	39.8	1997	38.6	1999	38.4	2001	38.4	2004	38.4	2007	38.4	2009	38.4
1987	37.9	1988	36.8	1989	38.0	1990	38.1	1993	38.4	1995	36.5	1998	35.2	2000	35.2	2002	35.2	2005	35.2	2008	35.2	2010	35.2
1988	33.6	1989	34.6	1990	34.8	1991	34.9	1994	33.3	1996	32.6	1999	31.9	2001	31.9	2003	31.9	2006	31.9	2009	31.9	2011	31.9
1989	31.1	1990	31.3	1991	31.4	1992	31.5	1995	29.6	1997	28.6	2000	28.3	2002	28.3	2004	28.3	2007	28.3	2010	28.3	2012	28.3
1990	27.5	1991	27.6	1992	27.7	1993	27.7	1996	25.3	1998	24.6	2001	24.6	2003	24.6	2005	24.6	2008	24.6	2011	24.6	2013	24.6
1991	23.6	1992	23.7	1993	23.7	1994	21.9	1997	20.8	1999	20.5	2002	20.5	2004	20.5	2006	20.5	2009	20.5	2012	20.5	2014	20.5
1992	19.4	1993	19.4	1994	17.6	1995	17.5	1998	16.2	2000	16.2	2003	16.2	2005	16.2	2007	16.2	2010	16.2	2013	16.2	2015	16.2
1993	14.8	1994	13.1	1995	12.9	1996	12.4	1999	11.7	2001	11.7	2004	11.7	2006	11.7	2008	11.7	2011	11.7	2014	11.7	2016	11.7
1994	10.3	1995	10.2	1996	9.7	1997	9.2	2000	8.9	2002	8.9	2005	8.9	2007	8.9	2009	8.9	2012	8.9	2015	8.9	2017	8.9
1995	8.0	1996	7.5	1997	7.0	1998	6.8	2001	6.8	2003	6.8	2006	6.8	2008	6.8	2010	6.8	2013	6.8	2016	6.8	2018	6.8
1996	5.2	1997	4.7	1998	4.4	1999	4.4	2002	4.4	2004	4.4	2007	4.4	2009	4.4	2011	4.4	2014	4.4	2017	4.4	2019	4.4
1997	3.2	1998	2.9	1999	2.9	2000	2.9	2003	2.9	2005	2.9	2008	2.9	2010	2.9	2012	2.9	2015	2.9	2018	2.9	2020	2.9

\*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,
- 20.6% of VMT traveled in cold start,
- 52.1% of VMT in stabilized,
- 27.3% of VMT in hot start.

Emissions are based on the January 1 mileage accumulation figures given in Table 2.4A.2

TABLE 2.11C.2  
 BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE  
 LIGHT DUTY GASOLINE POWERED TRUCKS I  
 NOx

DATE : JUNE 30, 1995

1985	1986		1987		1988		1989		January 1 of Calendar Year		1993		1994		1995		1996		
	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	
1961	2.0	1962	2.0	1963	2.0	1964	2.0	1965	2.0	1966	2.0	1967	2.0	1968	2.0	1969	2.0	1970	2.0
1962	2.0	1963	2.0	1964	2.0	1965	2.0	1966	2.0	1967	2.0	1968	2.0	1969	2.0	1970	2.0	1971	2.0
1963	2.0	1964	2.0	1965	2.0	1966	2.0	1967	2.0	1968	2.0	1969	2.0	1970	2.0	1971	2.0	1972	2.0
1964	2.0	1965	2.0	1966	2.0	1967	2.0	1968	2.0	1969	2.0	1970	2.0	1971	2.0	1972	2.0	1973	2.0
1965	2.0	1966	2.0	1967	2.0	1968	2.0	1969	2.0	1970	2.0	1971	2.0	1972	2.0	1973	2.0	1974	2.0
1966	2.0	1967	2.0	1968	2.0	1969	2.0	1970	2.0	1971	2.0	1972	2.0	1973	2.0	1974	2.0	1975	2.0
1967	2.0	1968	2.0	1969	2.0	1970	2.0	1971	2.0	1972	2.0	1973	2.0	1974	2.0	1975	2.0	1976	2.0
1968	2.0	1969	2.0	1970	2.0	1971	2.0	1972	2.0	1973	2.0	1974	2.0	1975	2.0	1976	2.0	1977	2.0
1969	2.0	1970	2.0	1971	2.0	1972	2.0	1973	2.0	1974	2.0	1975	2.0	1976	2.0	1977	2.0	1978	2.0
1970	2.0	1971	2.0	1972	2.0	1973	2.0	1974	2.0	1975	2.0	1976	2.0	1977	2.0	1978	2.0	1979	2.0
1971	2.0	1972	2.0	1973	2.0	1974	2.0	1975	2.0	1976	2.0	1977	2.0	1978	2.0	1979	2.0	1980	2.0
1972	2.0	1973	2.0	1974	2.0	1975	2.0	1976	2.0	1977	2.0	1978	2.0	1979	2.0	1980	2.0	1981	2.0
1973	2.0	1974	2.0	1975	2.0	1976	2.0	1977	2.0	1978	2.0	1979	2.0	1980	2.0	1981	2.0	1982	2.0
1974	2.0	1975	2.0	1976	2.0	1977	2.0	1978	2.0	1979	2.0	1980	2.0	1981	2.0	1982	2.0	1983	2.0
1975	2.0	1976	2.0	1977	2.0	1978	2.0	1979	2.0	1980	2.0	1981	2.0	1982	2.0	1983	2.0	1984	2.0
1976	2.0	1977	2.0	1978	2.0	1979	2.0	1980	2.0	1981	2.0	1982	2.0	1983	2.0	1984	2.0	1985	2.0
1977	2.0	1978	2.0	1979	2.0	1980	2.0	1981	2.0	1982	2.0	1983	2.0	1984	2.0	1985	2.0	1986	2.0
1978	2.0	1979	2.0	1980	2.0	1981	2.0	1982	2.0	1983	2.0	1984	2.0	1985	2.0	1986	2.0	1987	2.0
1979	2.0	1980	2.0	1981	2.0	1982	2.0	1983	2.0	1984	2.0	1985	2.0	1986	2.0	1987	2.0	1988	2.0
1980	2.0	1981	2.0	1982	2.0	1983	2.0	1984	2.0	1985	2.0	1986	2.0	1987	2.0	1988	2.0	1989	2.0
1981	2.0	1982	2.0	1983	2.0	1984	2.0	1985	2.0	1986	2.0	1987	2.0	1988	2.0	1989	2.0	1990	2.0
1982	2.0	1983	2.0	1984	2.0	1985	2.0	1986	2.0	1987	2.0	1988	2.0	1989	2.0	1990	2.0	1991	2.0
1983	2.0	1984	2.0	1985	2.0	1986	2.0	1987	2.0	1988	2.0	1989	2.0	1990	2.0	1991	2.0	1992	2.0
1984	2.0	1985	2.0	1986	2.0	1987	2.0	1988	2.0	1989	2.0	1990	2.0	1991	2.0	1992	2.0	1993	2.0
1985	2.0	1986	2.0	1987	2.0	1988	2.0	1989	2.0	1990	2.0	1991	2.0	1992	2.0	1993	2.0	1994	2.0

\*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,
- 20.6% of VMT traveled in cold start,
- 52.1% of VMT in stabilized,
- 27.3% of VMT in hot start.

Emissions are based on the January 1 mileage accumulation figures given in Table 2.4A.2

Continued on the next page.

TABLE 2.11C.2 (continued)  
 BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE  
 LIGHT DUTY GASOLINE POWERED TRUCKS I  
 NOx

1997		1998		1999		2000		2003		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	2.7	1974	2.7	1975	2.5	1976	2.5	1979	2.1	1981	1.7	1984	2.7	1986	4.9	1988	4.7	1991	4.4	1994	4.2	1996	3.9
1974	2.7	1975	2.5	1976	2.5	1977	2.8	1980	2.1	1982	2.0	1985	4.8	1987	4.9	1989	4.5	1992	4.3	1995	3.9	1997	3.8
1975	2.4	1976	2.4	1977	2.8	1978	2.4	1981	1.7	1983	2.1	1986	4.7	1988	4.5	1990	4.2	1993	4.2	1996	3.7	1998	3.7
1976	2.4	1977	2.8	1978	2.4	1979	2.1	1982	2.0	1984	2.6	1987	4.7	1989	4.3	1991	4.1	1994	3.9	1997	3.7	1999	3.7
1977	2.8	1978	2.4	1979	2.0	1980	2.0	1983	2.0	1985	4.5	1988	4.3	1990	4.1	1992	4.0	1995	3.6	1998	3.6	2000	3.6
1978	2.4	1979	2.0	1980	2.0	1981	1.6	1984	2.5	1986	4.4	1989	4.1	1991	3.9	1993	3.9	1996	3.5	1999	3.5	2001	3.5
1979	2.0	1980	2.0	1981	1.6	1982	2.0	1985	4.3	1987	4.4	1990	3.8	1992	3.8	1994	3.6	1997	3.3	2000	3.3	2002	3.3
1980	2.0	1981	1.6	1982	2.0	1983	2.0	1986	4.2	1988	4.0	1991	3.7	1993	3.7	1995	3.3	1998	3.2	2001	3.2	2003	3.2
1981	1.6	1982	1.9	1983	2.0	1984	2.4	1987	4.1	1989	3.7	1992	3.6	1994	3.4	1996	3.1	1999	3.0	2002	3.1	2004	3.1
1982	1.9	1983	2.0	1984	2.4	1985	3.9	1988	3.7	1990	3.5	1993	3.4	1995	3.1	1997	3.0	2000	3.0	2003	3.0	2005	3.0
1983	1.9	1984	2.3	1985	3.8	1986	3.7	1989	3.4	1991	3.3	1994	3.1	1996	2.8	1998	2.8	2001	2.8	2004	2.8	2006	2.8
1984	2.3	1985	3.6	1986	3.6	1987	3.6	1990	3.2	1992	3.1	1995	2.7	1997	2.7	1999	2.7	2002	2.7	2005	2.7	2007	2.7
1985	3.4	1986	3.4	1987	3.4	1988	3.2	1991	3.0	1993	3.0	1996	2.5	1998	2.5	2000	2.5	2003	2.5	2006	2.5	2008	2.5
1986	3.2	1987	3.2	1988	3.0	1989	2.9	1992	2.8	1994	2.6	1997	2.4	1999	2.4	2001	2.4	2004	2.4	2007	2.4	2009	2.4
1987	3.0	1988	2.8	1989	2.7	1990	2.7	1993	2.6	1995	2.3	1998	2.2	2000	2.2	2002	2.2	2005	2.2	2008	2.2	2010	2.2
1988	2.6	1989	2.5	1990	2.5	1991	2.4	1994	2.3	1996	2.0	1999	2.0	2001	2.0	2003	2.0	2006	2.0	2009	2.0	2011	2.0
1989	2.3	1990	2.2	1991	2.2	1992	2.2	1995	1.9	1997	1.8	2000	1.8	2002	1.8	2004	1.8	2007	1.8	2010	1.8	2012	1.8
1990	2.0	1991	2.0	1992	2.0	1993	2.0	1996	1.6	1998	1.6	2001	1.6	2003	1.6	2005	1.6	2008	1.6	2011	1.6	2013	1.6
1991	1.8	1992	1.8	1993	1.8	1994	1.6	1997	1.3	1999	1.3	2002	1.3	2004	1.3	2006	1.3	2009	1.3	2012	1.3	2014	1.3
1992	1.5	1993	1.5	1994	1.4	1995	1.2	1998	1.1	2000	1.1	2003	1.1	2005	1.1	2007	1.1	2010	1.1	2013	1.1	2015	1.1
1993	1.3	1994	1.1	1995	0.9	1996	0.8	1999	0.8	2001	0.8	2004	0.8	2006	0.8	2008	0.8	2011	0.8	2014	0.8	2016	0.8
1994	0.9	1995	0.7	1996	0.7	1997	0.7	2000	0.7	2002	0.7	2005	0.7	2007	0.7	2009	0.7	2012	0.7	2015	0.7	2017	0.7
1995	0.6	1996	0.5	1997	0.5	1998	0.5	2001	0.5	2003	0.5	2006	0.5	2008	0.5	2010	0.5	2013	0.5	2016	0.5	2018	0.5
1996	0.4	1997	0.4	1998	0.4	1999	0.4	2002	0.4	2004	0.4	2007	0.4	2009	0.4	2011	0.4	2014	0.4	2017	0.4	2019	0.4
1997	0.3	1998	0.3	1999	0.3	2000	0.3	2003	0.3	2005	0.3	2008	0.3	2010	0.3	2012	0.3	2015	0.3	2018	0.3	2020	0.3

\*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,
- 20.6% of VMT traveled in cold start,
- 52.1% of VMT in stabilized,
- 27.3% of VMT in hot start.

Emissions are based on the January 1 mileage accumulation figures given in Table 2.4A.2

TABLE 2.12A

THE IMPACT OF OXYGENATED FUELS ON EMISSIONS  
BY MODEL YEAR HC AVERAGE EMISSION LEVELS WITHOUT OXYGENATED FUEL AND BENEFIT FACTORS

NUM	1981		1982		1983		1984		1985		1986		1987		1988		1989		
	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**	
1	0.38	5.40	0.39	5.11	0.33	4.99	0.32	4.97	0.33	4.77	0.33	4.52	0.33	4.29	0.33	3.97	0.33	4.15	
2	0.52	5.36	0.53	5.09	0.44	5.04	0.41	5.09	0.43	4.90	0.42	4.70	0.42	4.49	0.42	4.19	0.43	4.36	
3	0.68	5.34	0.69	5.10	0.59	5.10	0.53	5.22	0.55	5.05	0.53	4.91	0.52	4.71	0.53	4.45	0.54	4.61	
4	1.08	5.45	1.09	5.23	0.75	5.17	0.65	5.36	0.68	5.21	0.64	5.13	0.64	4.94	0.64	4.72	0.66	4.87	
5	1.32	5.55	1.33	5.35	1.20	5.49	1.10	5.77	1.13	5.67	1.10	5.45	1.08	5.30	1.08	5.14	1.10	5.25	
6	1.58	5.65	1.57	5.46	1.45	5.61	1.36	5.90	1.39	5.82	1.35	5.68	1.32	5.56	1.31	5.43	1.36	5.74	
7	1.85	5.73	1.82	5.55	1.70	5.72	1.63	6.02	1.66	5.96	1.62	6.02	1.58	5.93	1.56	5.86	1.62	5.93	
8	2.13	5.80	2.09	5.63	1.97	5.81	1.91	6.12	1.94	6.08	1.90	6.16	1.85	6.08	1.82	6.03	1.89	6.10	
9	2.48	5.91	2.41	5.75	2.33	5.94	2.33	6.24	2.36	6.22	2.34	6.30	2.27	6.24	2.24	6.21	2.32	6.27	
10	2.76	5.96	2.67	5.81	2.59	6.00	2.61	6.30	2.63	6.28	2.61	6.37	2.53	6.32	2.49	6.30	2.59	6.35	
11	3.02	6.00	2.91	5.85	2.84	6.04	2.87	6.39	2.90	6.33	2.88	6.42	2.78	6.38	2.73	6.36	2.85	6.41	
12	3.28	6.02	3.15	5.88	3.08	6.08	3.12	6.39	3.16	6.36	3.14	6.46	3.03	6.42	2.98	6.42	3.11	6.45	
13	3.51	6.04	3.37	5.90	3.30	6.09	3.36	6.41	3.40	6.38	3.38	6.49	3.27	6.45	3.22	6.45	3.36	6.48	
14	3.66	6.04	3.52	5.91	3.47	6.10	3.53	6.42	3.60	6.40	3.59	6.51	3.47	6.47	3.44	6.48	3.60	6.50	
15	3.81	6.05	3.67	5.92	3.63	6.11	3.69	6.43	3.79	6.41	3.80	6.52	3.68	6.49	3.66	6.50	3.83	6.52	
16	3.95	6.05	3.81	5.92	3.77	6.11	3.84	6.43	3.95	6.42	3.97	6.53	3.85	6.51	3.85	6.52	4.02	6.54	
17	4.08	6.04	3.94	5.92	3.91	6.11	3.98	6.44	4.08	6.42	4.10	6.54	3.98	6.51	3.98	6.52	4.15	6.54	
18	4.21	6.04	4.07	5.92	4.04	6.11	4.11	6.44	4.21	6.42	4.23	6.54	4.11	6.52	4.11	6.53	4.27	6.55	
19	4.33	6.04	4.19	5.92	4.16	6.11	4.23	6.45	4.33	6.43	4.35	6.55	4.24	6.53	4.23	6.54	4.39	6.55	
20	4.44	6.04	4.30	5.92	4.28	6.11	4.35	6.45	4.44	6.43	4.46	6.55	4.35	6.53	4.35	6.55	4.50	6.56	
21	4.54	6.03	4.41	5.92	4.39	6.11	4.46	6.46	4.55	6.43	4.57	6.56	4.47	6.54	4.46	6.55	4.61	6.56	
22	4.65	6.03	4.52	5.92	4.50	6.11	4.57	6.46	4.65	6.43	4.68	6.56	4.58	6.54	4.57	6.56	4.71	6.56	
23	4.74	6.03	4.61	5.92	4.60	6.11	4.67	6.46	4.75	6.43	4.78	6.56	4.68	6.55	4.68	6.56	4.81	6.57	
24	4.83	6.03	4.71	5.92	4.70	6.11	4.77	6.47	4.85	6.44	4.87	6.57	4.78	6.55	4.77	6.57	4.90	6.57	
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Continued on the next page

HC\* Indicates the average emission levels without oxygenated fuels  
B\*\* Indicate the benefit factors

To interpolate the benefit factor the following formula should be used:  
 $BENFAC = (BEFADJ * (Y2 - Y1) + X2 * Y1 - X1 * Y2) / (X2 - X1)$   
 where: BEFADJ - basic emission factor  
 Y1, Y2 - lower and upper benefit factor  
 X1, X2 - lower and upper interpolation values

For Pre-1981 LDGV or  
 Pre-1991 LDGT1+2 or  
 HDGV or MC : BENFAC=NOCAT\* 1.57+CAT\* 4.46  
 where: NOCAT - fraction of vehicles that are not catalyst equipped  
 CAT - fraction of vehicles that are catalyst equipped

There is no effect on NOx.

For additional information see Table 2.13  
 "Exhaust Effects of Oxygenated Fuel Blends Percent of Change in Emissions"

TABLE 2.12A (continued)

THE IMPACT OF OXYGENATED FUELS ON EMISSIONS  
 BY MODEL YEAR HC AVERAGE EMISSION LEVELS WITHOUT OXYGENATED FUEL AND BENEFIT FACTORS

NUM	1990		1991		1992		1993		1994		1995		1996		1997		1998	
	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**
1	0.34	4.01	0.34	4.00	0.34	4.01	0.34	4.01	0.32	4.01	0.31	4.00	0.28	4.01	0.27	4.01	0.26	4.02
2	0.44	4.24	0.44	4.23	0.44	4.25	0.44	4.25	0.42	4.24	0.40	4.23	0.38	4.23	0.36	4.23	0.35	4.24
3	0.55	4.51	0.55	4.50	0.55	4.52	0.55	4.52	0.53	4.49	0.51	4.47	0.49	4.47	0.47	4.47	0.46	4.48
4	0.67	4.78	0.67	4.78	0.67	4.79	0.67	4.79	0.65	4.76	0.63	4.73	0.61	4.72	0.59	4.72	0.58	4.72
5	0.88	5.18	0.89	5.18	0.89	5.19	0.89	5.19	0.87	5.17	0.84	5.14	0.81	5.12	0.80	5.12	0.79	5.12
6	1.12	5.48	1.13	5.48	1.13	5.48	1.13	5.48	1.10	5.46	1.07	5.43	1.04	5.42	1.03	5.42	1.02	5.42
7	1.38	5.71	1.38	5.72	1.39	5.72	1.39	5.72	1.36	5.70	1.32	5.67	1.29	5.65	1.27	5.65	1.26	5.65
8	1.64	5.92	1.65	5.92	1.66	5.93	1.66	5.93	1.62	5.90	1.58	5.87	1.55	5.85	1.53	5.85	1.52	5.85
9	1.91	6.10	1.92	6.10	1.93	6.11	1.93	6.11	1.89	6.08	1.85	6.05	1.82	6.03	1.80	6.02	1.79	6.02
10	2.35	6.28	2.36	6.29	2.37	6.30	2.37	6.30	2.33	6.27	2.29	6.24	2.25	6.22	2.24	6.21	2.23	6.21
11	2.61	6.36	2.63	6.37	2.64	6.38	2.64	6.38	2.59	6.36	2.55	6.35	2.51	6.34	2.49	6.34	2.49	6.33
12	2.88	6.42	2.89	6.42	2.91	6.43	2.91	6.43	2.86	6.43	2.81	6.43	2.77	6.43	2.75	6.44	2.75	6.44
13	3.14	6.46	3.16	6.46	3.18	6.47	3.18	6.47	3.13	6.47	3.08	6.47	3.03	6.47	3.02	6.47	3.01	6.47
14	3.41	6.49	3.43	6.49	3.45	6.50	3.45	6.50	3.39	6.50	3.34	6.50	3.29	6.50	3.28	6.50	3.27	6.50
15	3.66	6.52	3.69	6.52	3.71	6.52	3.71	6.52	3.65	6.52	3.60	6.52	3.55	6.52	3.54	6.52	3.53	6.53
16	3.92	6.54	3.95	6.54	3.97	6.55	3.97	6.55	3.91	6.55	3.85	6.55	3.81	6.55	3.79	6.55	3.78	6.55
17	4.12	6.55	4.15	6.56	4.17	6.56	4.17	6.56	4.11	6.56	4.06	6.56	4.01	6.56	3.99	6.56	3.98	6.56
18	4.24	6.56	4.28	6.56	4.30	6.56	4.30	6.56	4.24	6.56	4.18	6.56	4.13	6.56	4.12	6.56	4.11	6.56
19	4.36	6.56	4.39	6.56	4.42	6.57	4.42	6.57	4.36	6.57	4.30	6.57	4.26	6.57	4.24	6.57	4.23	6.57
20	4.48	6.56	4.51	6.57	4.53	6.57	4.53	6.57	4.47	6.57	4.41	6.57	4.37	6.57	4.35	6.57	4.34	6.57
21	4.59	6.57	4.62	6.57	4.64	6.57	4.64	6.57	4.58	6.57	4.52	6.57	4.48	6.57	4.46	6.57	4.45	6.57
22	4.69	6.57	4.72	6.57	4.74	6.57	4.74	6.57	4.68	6.57	4.63	6.57	4.58	6.57	4.57	6.57	4.56	6.57
23	4.79	6.57	4.82	6.57	4.84	6.58	4.84	6.58	4.78	6.58	4.73	6.58	4.68	6.58	4.66	6.58	4.66	6.58
24	4.88	6.57	4.91	6.58	4.93	6.58	4.93	6.58	4.87	6.58	4.82	6.58	4.77	6.58	4.76	6.58	4.75	6.58
25	4.97	6.58	5.00	6.58	5.02	6.58	5.02	6.58	4.96	6.58	4.91	6.58	4.86	6.58	4.85	6.58	4.84	6.58

HC\* Indicates the average emission levels without oxygenated fuels  
 B\*\* Indicates the benefit factors

To interpolate the benefit factor the following formula should be used:

$$BENFAC = (BENFADJ * (Y2 - Y1) + X2 * Y1 - X1 * Y2) / (X2 - X1)$$

where: BENFADJ - basic emission factor

Y1, Y2 - lower and upper benefit factor

X1, X2 - lower and upper interpolation values

For Pre-1981 LDGV or

Pre-1991 LDGT1+2 or

HDGV or MC

where: NOCAT - fraction of vehicles that are not catalyst equipped

CAT - fraction of vehicles that are catalyst equipped

There is no effect on NOx.

For additional information see Table 2.13

"Exhaust Effects of Oxygenated Fuel Blends Percent of Change in Emissions"

DATE : JUNE 30, 1995

TABLE 2.12B

THE IMPACT OF OXYGENATED FUELS ON EMISSIONS  
BY MODEL YEAR CO AVERAGE EMISSION LEVELS WITHOUT OXYGENATED FUEL AND BENEFIT FACTORS

NUM	1981		1982		1983		1984		1985		1986		1987		1988		1989	
	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**
1	4.96	8.42	5.08	8.39	5.05	7.97	4.59	7.17	4.52	6.98	4.27	6.39	4.24	6.30	4.12	5.92	4.11	5.93
2	7.13	8.87	7.34	8.84	7.08	8.48	6.16	7.77	6.27	7.61	5.91	7.08	5.88	7.01	5.83	6.70	5.89	6.72
3	9.46	9.17	9.74	9.15	9.23	8.83	7.80	8.23	8.09	8.10	7.58	7.65	7.55	7.59	7.54	7.33	7.68	7.36
4	11.91	9.37	12.25	9.35	11.38	9.09	9.37	8.59	9.75	9.01	8.12	8.95	8.06	8.90	7.84	9.11	7.88	8.67
5	15.02	9.62	15.12	9.58	14.26	9.42	12.42	9.14	12.77	9.07	12.03	8.84	11.85	8.78	11.71	8.63	12.04	8.67
6	18.26	9.79	18.09	9.75	17.27	9.64	15.64	9.49	15.96	9.43	15.22	9.30	14.91	9.24	14.67	9.13	15.13	9.17
7	21.59	9.93	21.15	9.88	20.36	9.81	18.98	9.73	19.26	9.69	18.53	9.60	18.08	9.55	17.75	9.47	18.34	9.51
8	24.97	10.03	24.27	9.98	23.51	9.94	22.38	9.90	22.63	9.88	21.92	9.82	21.33	9.78	20.90	9.71	21.63	9.75
9	28.39	10.12	27.40	10.06	26.68	10.04	25.83	10.04	26.04	10.02	25.36	9.99	24.61	9.95	24.09	9.90	24.96	9.94
10	32.96	10.27	31.52	10.21	31.13	10.22	31.22	10.25	31.24	10.23	30.81	10.23	29.88	10.19	29.23	10.16	30.22	10.19
11	36.15	10.31	34.44	10.25	34.08	10.27	34.42	10.31	34.42	10.30	34.01	10.30	32.93	10.27	32.19	10.25	33.52	10.27
12	39.12	10.35	37.19	10.30	36.92	10.31	37.49	10.37	37.50	10.36	37.13	10.37	35.92	10.34	35.12	10.32	36.39	10.35
13	42.03	10.39	39.87	10.34	39.68	10.36	40.49	10.42	40.52	10.41	40.18	10.43	38.83	10.40	37.96	10.38	39.40	10.41
14	44.46	10.42	42.13	10.37	42.02	10.39	42.99	10.46	43.16	10.46	42.90	10.47	41.42	10.45	40.59	10.43	42.21	10.46
15	45.81	10.44	43.53	10.38	43.55	10.41	44.57	10.48	45.11	10.49	45.06	10.51	43.59	10.49	43.02	10.48	44.78	10.51
16	47.11	10.45	44.87	10.40	45.03	10.43	46.10	10.51	47.01	10.52	47.17	10.55	45.71	10.52	45.41	10.52	47.30	10.55
17	48.31	10.46	46.12	10.41	46.38	10.45	47.49	10.53	48.58	10.54	48.87	10.57	47.44	10.55	47.31	10.55	49.24	10.58
18	49.41	10.47	47.27	10.42	47.57	10.46	48.70	10.55	49.75	10.56	50.06	10.59	48.70	10.57	48.59	10.58	50.43	10.60
19	50.46	10.48	48.38	10.43	48.72	10.47	49.86	10.58	50.86	10.58	51.20	10.61	49.91	10.59	49.83	10.60	51.58	10.62
20	51.45	10.49	49.43	10.44	49.82	10.49	50.98	10.58	51.93	10.59	52.29	10.63	51.07	10.61	51.02	10.62	52.67	10.64
21	52.40	10.50	50.44	10.45	50.87	10.50	52.05	10.60	52.95	10.61	53.34	10.65	52.18	10.63	52.17	10.64	53.72	10.65
22	53.31	10.51	51.40	10.46	51.88	10.51	53.07	10.62	53.93	10.62	54.34	10.66	53.25	10.65	53.27	10.65	54.72	10.67
23	54.16	10.52	52.32	10.47	52.85	10.52	54.05	10.63	54.86	10.64	55.29	10.68	54.28	10.66	54.32	10.67	55.68	10.69
24	54.98	10.53	53.20	10.48	53.77	10.53	54.98	10.64	55.74	10.65	56.20	10.69	55.26	10.68	55.33	10.69	56.60	10.70
25	55.76	10.54	54.04	10.48	54.64	10.54	55.88	10.66	56.59	10.66	57.07	10.70	56.20	10.69	56.30	10.70	57.48	10.71

Continued on the next page

CO\* Indicates the average emission levels without oxygenated fuels  
B\*\* Indicate the benefit factors

To interpolate the benefit factor the following formula should be used:  
 $BENFAC = (BENFADJ * (Y2 - Y1) + X2 * Y1 - X1 * Y2) / (X2 - X1)$   
 where: BENFADJ - basic emission factor  
 Y1, Y2 - lower and upper benefit factor  
 X1, X2 - lower and upper interpolation values

For Pre-1981 LDGV or  
 Pre-1991 LDGT1+2 or  
 HDGV or MC  
 where: BENFAC=NOCAT\* 7.00+CAT\* 9.97  
 NOCAT - fraction of vehicles that are not catalyst equipped  
 CAT - fraction of vehicles that are catalyst equipped

There is no effect on NOx.

For additional information see Table 2.13  
 "Exhaust Effects of Oxygenated Fuel Blends Percent of Change in Emissions"

TABLE 2.12B (continued)

THE IMPACT OF OXYGENATED FUELS ON EMISSIONS  
BY MODEL YEAR CO AVERAGE EMISSION LEVELS WITHOUT OXYGENATED FUEL AND BENEFIT FACTORS

NUM	1990		1991		1992		1993		1994		1995		1996		1997		1998	
	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**
1	4.01	5.63	4.00	5.58	3.99	5.56	3.99	5.56	3.99	5.56	3.99	5.56	3.99	5.56	3.99	5.56	3.99	5.56
2	5.90	6.50	5.91	6.46	5.91	6.45	5.91	6.45	5.91	6.45	5.91	6.45	5.91	6.45	5.91	6.45	5.91	6.45
3	7.78	7.20	7.81	7.17	7.83	7.16	7.83	7.16	7.83	7.16	7.83	7.16	7.83	7.16	7.83	7.16	7.83	7.16
4	9.24	7.75	9.27	7.73	9.30	7.73	9.30	7.73	9.30	7.73	9.30	7.73	9.30	7.73	9.30	7.73	9.30	7.73
5	12.16	8.59	12.21	8.57	12.25	8.57	12.25	8.57	12.25	8.57	12.25	8.57	12.25	8.57	12.25	8.57	12.25	8.57
6	15.25	9.11	15.31	9.11	15.37	9.11	15.37	9.11	15.37	9.11	15.37	9.11	15.37	9.11	15.37	9.11	15.37	9.11
7	18.46	9.47	18.54	9.47	18.60	9.47	18.60	9.47	18.60	9.47	18.60	9.47	18.60	9.47	18.60	9.47	18.60	9.47
8	21.75	9.73	21.84	9.73	21.92	9.73	21.92	9.73	21.92	9.73	21.92	9.73	21.92	9.73	21.92	9.73	21.92	9.73
9	25.08	9.92	25.19	9.92	25.29	9.93	25.29	9.93	25.29	9.93	25.29	9.93	25.29	9.93	25.29	9.93	25.29	9.93
10	30.29	10.18	30.40	10.18	30.51	10.18	30.51	10.18	30.51	10.18	30.51	10.18	30.51	10.18	30.51	10.18	30.51	10.18
11	33.40	10.27	33.53	10.27	33.66	10.28	33.66	10.28	33.66	10.28	33.66	10.28	33.66	10.28	33.66	10.28	33.66	10.28
12	36.51	10.35	36.65	10.35	36.80	10.35	36.80	10.35	36.80	10.35	36.80	10.35	36.80	10.35	36.80	10.35	36.80	10.35
13	39.56	10.41	39.73	10.42	39.90	10.42	39.90	10.42	39.90	10.42	39.90	10.42	39.90	10.42	39.90	10.42	39.90	10.42
14	42.50	10.47	42.71	10.47	42.91	10.48	42.91	10.48	42.91	10.48	42.91	10.48	42.91	10.48	42.91	10.48	42.91	10.48
15	45.38	10.52	45.65	10.53	45.87	10.53	45.87	10.53	45.87	10.53	45.87	10.53	45.87	10.53	45.87	10.53	45.87	10.53
16	48.20	10.57	48.53	10.57	48.79	10.57	48.79	10.57	48.79	10.57	48.79	10.57	48.79	10.57	48.79	10.57	48.79	10.57
17	50.29	10.60	50.65	10.60	50.92	10.61	50.92	10.61	50.92	10.61	50.92	10.61	50.92	10.61	50.92	10.61	50.92	10.61
18	51.45	10.62	51.79	10.62	52.05	10.62	52.05	10.62	52.05	10.62	52.05	10.62	52.05	10.62	52.05	10.62	52.05	10.62
19	52.55	10.64	52.89	10.64	53.13	10.64	53.13	10.64	53.13	10.64	53.13	10.64	53.13	10.64	53.13	10.64	53.13	10.64
20	53.60	10.65	53.93	10.66	54.16	10.66	54.16	10.66	54.16	10.66	54.16	10.66	54.16	10.66	54.16	10.66	54.16	10.66
21	54.61	10.67	54.93	10.67	55.14	10.68	55.14	10.68	55.14	10.68	55.14	10.68	55.14	10.68	55.14	10.68	55.14	10.68
22	55.57	10.68	55.88	10.69	56.08	10.69	56.08	10.69	56.08	10.69	56.08	10.69	56.08	10.69	56.08	10.69	56.08	10.69
23	56.49	10.70	56.78	10.70	56.98	10.71	56.98	10.71	56.98	10.71	56.98	10.71	56.98	10.71	56.98	10.71	56.98	10.71
24	57.37	10.71	57.65	10.72	57.83	10.72	57.83	10.72	57.83	10.72	57.83	10.72	57.83	10.72	57.83	10.72	57.83	10.72
25	58.20	10.73	58.47	10.73	58.64	10.73	58.64	10.73	58.64	10.73	58.64	10.73	58.64	10.73	58.64	10.73	58.64	10.73

CO\* Indicates the average emission levels without oxygenated fuels  
B\*\* Indicates the benefit factors

To interpolate the benefit factor the following formula should be used:

$$BENFAC = (BENFADJ * (Y2 - Y1) + X2 * Y1 - X1 * Y2) / (X2 - X1)$$

where: BENFADJ - basic emission factor

Y1, Y2 - lower and upper benefit factor

X1, X2 - lower and upper interpolation values

For Pre-1981 LDGV or

Pre-1991 LDGT1+2 or

HDGV or MC : BENFAC=NOCAT\* 7.00+CAT\* 9.97

where: NOCAT - fraction of vehicles that are not catalyst equipped

CAT - fraction of vehicles that are catalyst equipped

There is no effect on NOx.

For additional information see Table 2.13

"Exhaust Effects of Oxygenated Fuel Blends Percent of Change in Emissions"

DATE : JUNE 30, 1995

TABLE 2.13

## REID VAPOR PRESSURE OF SUMMER TIME REFORMULATED GASOLINE

REGION	PHASE 1 (1995)	PHASE 1 (Complex Model 1997)	PHASE 2 (2000)
1	7.1	7.1	6.8
2	8.0	8.0	7.5

EXHAUST EFFECTS OF OXYGENATED FUEL BLENDS  
PERCENT CHANGE IN EMISSIONS FOR  
1985 AND EARLIER MODEL YEAR  
LIGHT DUTY GASOLINE POWERED TRUCKS I

VEHICLE	HC	CO	NOx
Non catalyst	-1.57%	-7.00%	-0.00%
Open loop	-4.46%	-9.97%	-0.00%

EXHAUST EFFECTS OF OXYGENATED FUEL BLENDS  
PERCENT CHANGE IN EMISSIONS PER PERCENT OF OXYGEN IN FUEL FOR  
1986 AND LATER MODEL YEAR  
LIGHT DUTY GASOLINE POWERED TRUCKS I  
(CLOSED LOOP)

	FUEL SYSTEM	HC EMISSIONS		CO EMISSIONS	
		% CHANGE	g/mi*	% CHANGE	g/mi*
Normal Emitters	PFI	-4.01%	0.33	-3.46%	3.50
	TBI	-2.93%	0.38	-4.93%	3.72
	Carb	-6.15%	0.33	-6.77%	4.18
High Emitters	PFI	-5.78%	1.83	-9.87%	15.26
	TBI	-5.78%	1.83	-9.87%	15.26
	Carb	-6.59%	3.14	-9.87%	15.26
Very High Emitters	PFI	-6.59%	3.14	-11.44%	95.79
	TBI	-6.59%	3.14	-11.44%	95.79
	Carb	-6.59%	3.14	-11.44%	95.79

\* These rates are for vehicles using EPA certification test fuel.

Note that oxygenates have no effect on NOx emissions.

ADDITIONAL EXHAUST HC REDUCTION FOR REFORMULATED GASOLINE FOR  
LIGHT DUTY GASOLINE POWERED TRUCKS I  
(APPLIED AFTER ADJUSTMENTS FOR RVP AND OXYGENATED FUEL EFFECTS)

REGION	PHASE1	PHASE2
1	1.076	1.771
2	1.067	1.738

PERCENT CHANGE IN EXHAUST EMISSIONS FROM INDUSTRY AVERAGE FUEL  
WHEN USING EPA CERTIFICATION TEST FUEL

HC	CO	NOx
-13.6%	-8.0%	-13.8%

Continued on the next page



TABLE 2.13 (continued)

## SEASONAL VARIATION IN REFORMULATED GASOLINE

Month	SUMMER*	WINTER**
	7	1
Ethanol Market Share	0.0%	30.0%
Ethanol Oxygen Content (by weight)	N/A	3.5%
Ether Blend Market Share	100.0%	70.0%
Ether Blend Oxygen Content	2.1%	1.5%
RVP Waiver	N/A	Yes
Fuel RVP	Fixed	User supplied

- \* User supplied RVP and oxygenated fuel program parameters are ignored in summer when Reformulated Gasoline is specified.
- \*\* Default oxygenated fuel program parameters can be overridden by the user in winter if the market share for oxygenated fuels is 100% and the combined oxygen content is at least 2.1%

REFORMULATED GASOLINE  
ASSUMED COMPLEX MODEL PARAMETERS

	BASELINE	-----PHASE 1-----		-----PHASE 2-----	
	INDUSTRY AVERAGE	REGION 1	REGION 2	REGION 1	REGION 2
MTBE*	0.00	2.10	2.10	2.10	2.10
ETBE*	0.00	0.00	0.00	0.00	0.00
Ethanol*	0.00	0.00	0.00	0.00	0.00
TAME*	0.00	0.00	0.00	0.00	0.00
SULFUR (ppm)	339.00	339.00	339.00	134.00	134.00
RVP (psi)	8.70	7.10	8.00	6.70	6.70
E200 (%)	41.00	41.00	41.00	44.44	44.44
E300 (%)	83.00	83.00	83.00	84.91	84.91
Aromatics**	32.00	27.20	25.50	24.79	24.79
Olefins**	9.20	9.20	9.20	12.56	12.56
Benzene**	1.53	0.95	0.95	0.95	0.95

- \* Percent fuel oxygen content by weight.
- \*\* Percent fuel content by volume.

DATE : JUNE 30, 1995