

## **Appendix J**

### **EMISSION SENSITIVITY TABLES BY VEHICLE TYPE**

Appendix J is arranged similarly to Appendix I, except that the emission factors presented are disaggregated by vehicle type. The LDGT category is a weighted combination of LDGT1 and LDGT2. Only LDGVs, LDGTs, and HDGVs are included in the tables of emission factors by component.

TABLE 1.01

LOW ALTITUDE

EXHAUST NMHC EMISSION FACTORS (GRAMS/MILE) AT 2.5 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	18.60	15.29	12.61	10.44	15.60	25.13	21.37	18.30	15.79	21.86	1.34	1.86	7.16	46.26 @ 0F
1990	0.0	100.0	0.0	19.82	17.90	16.28	14.92	21.36	26.32	24.66	23.25	22.07	31.29	1.53	2.23	7.16	39.60 @ 25F
1990	100.0	0.0	100.0	207.13	102.12	51.09	25.92	22.16	244.26	127.67	67.49	36.04	29.36	2.03	3.17	7.16	33.93 @ 50F
1990	50.0	0.0	50.0	92.92	49.35	27.60	16.40	18.11	112.72	63.67	37.75	23.71	24.72	1.60	2.36	7.16	29.08 @ 75F
1990	0.0	50.0	0.0	18.99	16.22	13.96	12.11	17.74	25.40	22.49	20.10	18.13	25.34	1.40	1.98	7.16	33.52 @100F
1990	50.0	50.0	50.0	113.48	60.01	33.68	20.42	21.76	135.29	76.17	45.37	29.06	30.32	1.78	2.70	7.16	
1990	20.6	27.3	20.6	49.14	29.69	19.45	13.77	17.77	61.30	39.40	27.31	20.36	25.00	1.48	2.13	7.16	
1995	0.0	0.0	0.0	13.21	10.77	8.80	7.19	8.96	18.59	15.34	12.71	10.58	13.36	1.46	2.01	5.45	29.23 @ 0F
1995	0.0	100.0	0.0	16.40	14.08	12.14	10.51	12.26	21.01	18.47	16.34	14.56	18.07	1.64	2.48	5.45	24.70 @ 25F
1995	100.0	0.0	100.0	154.15	73.89	35.92	17.71	16.75	185.79	93.56	47.53	24.35	22.08	2.09	3.45	5.45	20.91 @ 50F
1995	50.0	0.0	50.0	69.27	35.72	19.41	11.23	11.92	86.13	46.79	26.60	15.98	16.72	1.69	2.56	5.45	17.74 @ 75F
1995	0.0	50.0	0.0	14.31	11.94	10.00	8.41	10.14	19.31	16.39	14.00	12.04	15.07	1.51	2.17	5.45	21.76 @100F
1995	50.0	50.0	50.0	85.28	43.99	24.03	14.11	14.50	103.40	56.02	31.94	19.46	20.08	1.86	2.96	5.45	
1995	20.6	27.3	20.6	36.64	21.55	13.75	9.48	10.79	46.80	28.90	19.18	13.64	15.74	1.58	2.32	5.45	
2000	0.0	0.0	0.0	10.65	8.63	6.99	5.66	6.52	15.73	12.67	10.22	8.27	9.66	1.23	1.58	4.68	19.93 @ 0F
2000	0.0	100.0	0.0	13.85	11.71	9.91	8.40	8.92	19.21	16.22	13.74	11.68	12.91	1.39	1.87	4.68	16.44 @ 25F
2000	100.0	0.0	100.0	101.57	51.63	26.52	13.74	13.49	152.12	75.21	37.44	18.75	18.02	1.82	2.68	4.68	13.59 @ 50F
2000	50.0	0.0	50.0	46.18	25.27	14.42	8.63	9.04	70.31	37.53	20.91	12.28	12.81	1.45	2.00	4.68	11.25 @ 75F
2000	0.0	50.0	0.0	11.58	9.57	7.91	6.55	7.26	16.75	13.79	11.39	9.44	10.74	1.27	1.67	4.68	13.49 @100F
2000	50.0	50.0	50.0	57.71	31.67	18.21	11.07	11.21	85.66	45.71	25.59	15.22	15.47	1.60	2.28	4.68	
2000	20.6	27.3	20.6	25.55	15.86	10.47	7.32	7.91	38.61	23.44	15.23	10.54	11.54	1.34	1.80	4.68	
2005	0.0	0.0	0.0	9.36	7.60	6.18	5.02	5.49	14.63	11.60	9.20	7.30	7.99	0.98	1.29	4.45	16.14 @ 0F
2005	0.0	100.0	0.0	12.62	10.63	8.95	7.54	7.61	18.33	15.14	12.51	10.34	10.44	1.10	1.45	4.45	12.89 @ 25F
2005	100.0	0.0	100.0	79.35	42.39	22.76	12.28	12.28	123.22	62.23	31.51	15.99	15.99	1.51	2.17	4.45	10.29 @ 50F
2005	50.0	0.0	50.0	36.21	20.80	12.35	7.61	7.88	57.60	31.47	17.83	10.55	10.94	1.17	1.63	4.45	8.21 @ 75F
2005	0.0	50.0	0.0	10.22	8.45	6.99	5.78	6.07	15.65	12.65	10.24	8.29	8.72	1.01	1.33	4.45	9.60 @100F
2005	50.0	50.0	50.0	45.99	26.51	15.86	9.91	9.95	70.77	38.69	22.01	13.17	13.22	1.30	1.81	4.45	
2005	20.6	27.3	20.6	20.65	13.35	9.06	6.44	6.73	32.62	20.21	13.23	9.12	9.55	1.07	1.45	4.45	
2010	0.0	0.0	0.0	8.98	7.30	5.93	4.82	5.28	14.42	11.40	9.01	7.12	7.80	0.94	1.27	4.41	15.36 @ 0F
2010	0.0	100.0	0.0	12.12	10.23	8.63	7.29	7.35	18.18	14.98	12.35	10.18	10.27	1.06	1.42	4.41	11.95 @ 25F
2010	100.0	0.0	100.0	71.97	39.48	21.67	11.91	11.91	118.31	60.11	30.61	15.62	15.62	1.47	2.14	4.41	9.24 @ 50F
2010	50.0	0.0	50.0	32.90	19.39	11.73	7.33	7.59	55.31	30.41	17.31	10.27	10.65	1.14	1.60	4.41	7.09 @ 75F
2010	0.0	50.0	0.0	9.77	8.09	6.70	5.55	5.83	15.44	12.45	10.04	8.11	8.52	0.98	1.31	4.41	7.83 @100F
2010	50.0	50.0	50.0	42.05	24.85	15.15	9.60	9.63	68.24	37.55	21.48	12.90	12.95	1.27	1.78	4.41	
2010	20.6	27.3	20.6	19.02	12.55	8.64	6.18	6.46	31.49	19.61	12.87	8.88	9.29	1.04	1.43	4.41	
2020	0.0	0.0	0.0	8.82	7.18	5.84	4.75	5.20	14.24	11.23	8.85	6.98	7.64	0.98	1.34	4.40	15.35 @ 0F
2020	0.0	100.0	0.0	11.94	10.08	8.51	7.18	7.24	17.92	14.74	12.13	9.98	10.06	1.10	1.52	4.40	11.94 @ 25F
2020	100.0	0.0	100.0	70.08	38.69	21.35	11.79	11.79	110.17	56.88	29.37	15.16	15.16	1.51	2.26	4.40	9.24 @ 50F
2020	50.0	0.0	50.0	32.01	18.98	11.54	7.23	7.49	51.79	28.95	16.69	9.99	10.36	1.18	1.68	4.40	7.10 @ 75F
2020	0.0	50.0	0.0	9.59	7.95	6.58	5.46	5.73	15.22	12.24	9.85	7.93	8.34	1.02	1.39	4.40	7.84 @100F
2020	50.0	50.0	50.0	41.01	24.38	14.93	9.49	9.52	64.05	35.81	20.75	12.57	12.61	1.31	1.89	4.40	
2020	20.6	27.3	20.6	18.55	12.30	8.49	6.09	6.36	29.91	18.88	12.50	8.66	9.06	1.08	1.50	4.40	

TABLE 1.01: EXHAUST NMHC AT 2.5 MPH

TABLE 1.02

LOW ALTITUDE

EXHAUST NMHC EMISSION FACTORS (GRAMS/MILE) AT 5.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	9.80	8.07	6.67	5.54	8.22	13.88	11.84	10.17	8.81	12.12	1.18	1.63	6.29	36.87 @ 0F 31.56 @ 25F 27.04 @ 50F 23.18 @ 75F 26.71 @100F
1990	0.0	100.0	0.0	10.44	9.44	8.60	7.89	11.26	14.49	13.61	12.86	12.24	17.30	1.35	1.96	6.29	
1990	100.0	0.0	100.0	109.17	53.89	27.00	13.72	11.73	134.17	70.36	37.32	19.99	16.22	1.79	2.79	6.29	
1990	50.0	0.0	50.0	48.98	26.05	14.60	8.69	9.56	61.93	35.11	20.90	13.17	13.68	1.41	2.07	6.29	
1990	0.0	50.0	0.0	10.00	8.56	7.38	6.42	9.34	14.00	12.43	11.14	10.08	14.03	1.23	1.74	6.29	
1990	50.0	50.0	50.0	59.81	31.67	17.80	10.81	11.49	74.33	41.99	25.09	16.12	16.76	1.57	2.37	6.29	
1990	20.6	27.3	20.6	25.90	15.67	10.29	7.30	9.37	33.70	21.75	15.13	11.31	13.83	1.30	1.87	6.29	
1995	0.0	0.0	0.0	7.01	5.72	4.68	3.83	4.75	10.07	8.32	6.91	5.76	7.27	1.28	1.77	4.79	23.30 @ 0F 19.69 @ 25F 16.67 @ 50F 14.14 @ 75F 17.34 @100F
1995	0.0	100.0	0.0	8.73	7.49	6.46	5.60	6.51	11.37	10.01	8.87	7.92	9.84	1.44	2.18	4.79	
1995	100.0	0.0	100.0	81.87	39.34	19.17	9.47	8.97	100.60	50.77	25.84	13.27	12.00	1.84	3.03	4.79	
1995	50.0	0.0	50.0	36.78	19.00	10.35	5.99	6.35	46.61	25.37	14.45	8.70	9.09	1.48	2.24	4.79	
1995	0.0	50.0	0.0	7.60	6.34	5.32	4.47	5.38	10.45	8.89	7.60	6.55	8.20	1.32	1.90	4.79	
1995	50.0	50.0	50.0	45.30	23.42	12.82	7.54	7.74	55.99	30.39	17.36	10.60	10.92	1.64	2.61	4.79	
1995	20.6	27.3	20.6	19.45	11.46	7.32	5.05	5.73	25.33	15.67	10.42	7.42	8.56	1.39	2.04	4.79	
2000	0.0	0.0	0.0	5.79	4.69	3.80	3.07	3.54	8.53	6.87	5.55	4.49	5.24	1.08	1.39	4.12	15.88 @ 0F 13.10 @ 25F 10.83 @ 50F 8.96 @ 75F 10.75 @100F
2000	0.0	100.0	0.0	7.54	6.38	5.39	4.57	4.85	10.41	8.79	7.45	6.34	7.01	1.22	1.64	4.12	
2000	100.0	0.0	100.0	55.07	28.06	14.44	7.50	7.37	82.30	40.74	20.31	10.19	9.78	1.60	2.36	4.12	
2000	50.0	0.0	50.0	25.03	13.72	7.84	4.70	4.92	38.03	20.33	11.34	6.66	6.95	1.27	1.75	4.12	
2000	0.0	50.0	0.0	6.29	5.20	4.30	3.56	3.94	9.08	7.48	6.18	5.12	5.83	1.12	1.47	4.12	
2000	50.0	50.0	50.0	31.31	17.22	9.92	6.03	6.11	46.36	24.77	13.88	8.26	8.39	1.41	2.00	4.12	
2000	20.6	27.3	20.6	13.86	8.61	5.69	3.98	4.30	20.89	12.70	8.26	5.72	6.26	1.18	1.58	4.12	
2005	0.0	0.0	0.0	5.16	4.20	3.41	2.77	3.03	7.97	6.32	5.01	3.98	4.35	0.86	1.13	3.91	12.86 @ 0F 10.27 @ 25F 8.20 @ 50F 6.55 @ 75F 7.65 @100F
2005	0.0	100.0	0.0	6.97	5.87	4.94	4.16	4.20	9.99	8.25	6.82	5.63	5.69	0.96	1.27	3.91	
2005	100.0	0.0	100.0	43.70	23.38	12.57	6.79	6.79	67.04	33.88	17.16	8.72	8.72	1.32	1.91	3.91	
2005	50.0	0.0	50.0	19.94	11.47	6.82	4.20	4.35	31.34	17.13	9.71	5.74	5.96	1.03	1.43	3.91	
2005	0.0	50.0	0.0	5.64	4.66	3.86	3.19	3.35	8.53	6.89	5.58	4.51	4.75	0.89	1.17	3.91	
2005	50.0	50.0	50.0	25.33	14.62	8.76	5.48	5.50	38.51	21.06	11.99	7.17	7.20	1.14	1.59	3.91	
2005	20.6	27.3	20.6	11.38	7.36	5.00	3.55	3.71	17.76	11.01	7.21	4.97	5.20	0.94	1.27	3.91	
2010	0.0	0.0	0.0	4.98	4.05	3.29	2.67	2.93	7.89	6.23	4.93	3.89	4.26	0.83	1.12	3.87	12.24 @ 0F 9.52 @ 25F 7.36 @ 50F 5.65 @ 75F 6.24 @100F
2010	0.0	100.0	0.0	6.72	5.67	4.79	4.04	4.07	9.94	8.19	6.75	5.57	5.61	0.93	1.25	3.87	
2010	100.0	0.0	100.0	39.90	21.89	12.02	6.61	6.61	64.57	32.82	16.73	8.54	8.54	1.29	1.88	3.87	
2010	50.0	0.0	50.0	18.24	10.75	6.51	4.07	4.21	30.19	16.61	9.46	5.61	5.82	1.00	1.41	3.87	
2010	0.0	50.0	0.0	5.42	4.48	3.71	3.08	3.23	8.44	6.81	5.49	4.43	4.66	0.86	1.15	3.87	
2010	50.0	50.0	50.0	23.31	13.78	8.40	5.32	5.34	37.25	20.51	11.74	7.05	7.08	1.11	1.57	3.87	
2010	20.6	27.3	20.6	10.54	6.96	4.79	3.43	3.58	17.20	10.71	7.03	4.85	5.08	0.91	1.25	3.87	
2020	0.0	0.0	0.0	4.90	3.99	3.24	2.64	2.89	7.80	6.15	4.85	3.82	4.18	0.86	1.17	3.87	12.23 @ 0F 9.52 @ 25F 7.36 @ 50F 5.66 @ 75F 6.25 @100F
2020	0.0	100.0	0.0	6.63	5.60	4.73	3.99	4.03	9.82	8.07	6.64	5.46	5.51	0.97	1.33	3.87	
2020	100.0	0.0	100.0	38.94	21.49	11.86	6.55	6.55	60.35	31.16	16.08	8.31	8.31	1.33	1.98	3.87	
2020	50.0	0.0	50.0	17.79	10.54	6.41	4.02	4.16	28.37	15.85	9.14	5.47	5.68	1.04	1.48	3.87	
2020	0.0	50.0	0.0	5.33	4.41	3.66	3.03	3.18	8.34	6.70	5.39	4.34	4.57	0.89	1.22	3.87	
2020	50.0	50.0	50.0	22.78	13.55	8.30	5.27	5.29	35.08	19.61	11.36	6.88	6.91	1.15	1.66	3.87	
2020	20.6	27.3	20.6	10.31	6.84	4.72	3.38	3.53	16.38	10.34	6.85	4.74	4.96	0.95	1.32	3.87	

TABLE 1.02: EXHAUST NMHC AT 5.0 MPH

TABLE 1.03

LOW ALTITUDE

EXHAUST NMHC EMISSION FACTORS (GRAMS/MILE) AT 10.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	5.12	4.22	3.49	2.89	4.26	7.29	6.20	5.32	4.59	6.32	0.93	1.28	4.94	24.16 @ 0F
1990	0.0	100.0	0.0	5.52	4.97	4.52	4.14	5.84	7.62	7.14	6.72	6.38	8.99	1.06	1.54	4.94	20.68 @ 25F
1990	100.0	0.0	100.0	58.17	28.63	14.30	7.25	6.23	71.28	37.23	19.66	10.49	8.56	1.40	2.19	4.94	17.72 @ 50F
1990	50.0	0.0	50.0	26.05	13.80	7.70	4.57	5.01	32.88	18.56	10.99	6.90	7.18	1.10	1.63	4.94	15.19 @ 75F
1990	0.0	50.0	0.0	5.25	4.49	3.87	3.36	4.84	7.36	6.52	5.82	5.25	7.31	0.96	1.37	4.94	17.50 @100F
1990	50.0	50.0	50.0	31.84	16.80	9.41	5.69	6.04	39.45	22.18	13.19	8.44	8.77	1.23	1.86	4.94	
1990	20.6	27.3	20.6	13.73	8.27	5.41	3.83	4.88	17.85	11.46	7.94	5.91	7.23	1.02	1.47	4.94	
1995	0.0	0.0	0.0	3.84	3.13	2.56	2.10	2.58	5.51	4.54	3.76	3.13	3.93	1.01	1.39	3.76	15.27 @ 0F
1995	0.0	100.0	0.0	4.83	4.14	3.56	3.08	3.54	6.26	5.49	4.85	4.31	5.32	1.13	1.71	3.76	12.90 @ 25F
1995	100.0	0.0	100.0	45.22	21.77	10.63	5.26	5.00	55.52	27.96	14.20	7.27	6.61	1.44	2.38	3.76	10.92 @ 50F
1995	50.0	0.0	50.0	20.29	10.49	5.71	3.31	3.50	25.70	13.95	7.92	4.75	4.97	1.16	1.76	3.76	9.26 @ 75F
1995	0.0	50.0	0.0	4.18	3.49	2.92	2.45	2.92	5.73	4.86	4.15	3.56	4.43	1.04	1.50	3.76	11.36 @100F
1995	50.0	50.0	50.0	25.03	12.95	7.09	4.17	4.27	30.89	16.73	9.53	5.79	5.97	1.29	2.05	3.76	
1995	20.6	27.3	20.6	10.72	6.32	4.03	2.78	3.13	13.94	8.60	5.70	4.05	4.65	1.09	1.60	3.76	
2000	0.0	0.0	0.0	3.34	2.70	2.19	1.77	2.03	4.84	3.89	3.14	2.53	2.95	0.85	1.09	3.23	10.41 @ 0F
2000	0.0	100.0	0.0	4.37	3.69	3.12	2.64	2.79	5.93	5.00	4.23	3.58	3.93	0.96	1.29	3.23	8.59 @ 25F
2000	100.0	0.0	100.0	31.70	16.21	8.37	4.36	4.29	46.68	23.11	11.51	5.77	5.56	1.25	1.85	3.23	7.10 @ 50F
2000	50.0	0.0	50.0	14.40	7.92	4.54	2.72	2.85	21.57	11.52	6.42	3.77	3.93	1.00	1.38	3.23	5.87 @ 75F
2000	0.0	50.0	0.0	3.63	3.00	2.48	2.06	2.26	5.16	4.24	3.50	2.89	3.28	0.88	1.15	3.23	7.05 @100F
2000	50.0	50.0	50.0	18.04	9.95	5.75	3.50	3.54	26.31	14.05	7.87	4.68	4.75	1.11	1.57	3.23	
2000	20.6	27.3	20.6	7.98	4.97	3.29	2.30	2.47	11.85	7.20	4.68	3.23	3.53	0.93	1.24	3.23	
2005	0.0	0.0	0.0	3.07	2.49	2.02	1.64	1.80	4.64	3.68	2.92	2.31	2.53	0.67	0.89	3.07	8.43 @ 0F
2005	0.0	100.0	0.0	4.14	3.49	2.94	2.47	2.50	5.82	4.81	3.97	3.28	3.31	0.76	1.00	3.07	6.73 @ 25F
2005	100.0	0.0	100.0	25.87	13.87	7.47	4.04	4.04	38.95	19.70	9.99	5.07	5.07	1.04	1.50	3.07	5.38 @ 50F
2005	50.0	0.0	50.0	11.81	6.80	4.05	2.50	2.59	18.21	9.96	5.65	3.34	3.47	0.81	1.12	3.07	4.29 @ 75F
2005	0.0	50.0	0.0	3.35	2.77	2.29	1.89	1.99	4.97	4.01	3.25	2.63	2.76	0.70	0.92	3.07	5.01 @100F
2005	50.0	50.0	50.0	15.01	8.68	5.21	3.26	3.27	22.39	12.25	6.98	4.18	4.19	0.90	1.25	3.07	
2005	20.6	27.3	20.6	6.74	4.37	2.97	2.11	2.21	10.32	6.40	4.19	2.89	3.03	0.74	1.00	3.07	
2010	0.0	0.0	0.0	2.98	2.42	1.97	1.60	1.75	4.62	3.65	2.88	2.28	2.49	0.65	0.88	3.04	8.02 @ 0F
2010	0.0	100.0	0.0	4.02	3.39	2.87	2.42	2.44	5.82	4.80	3.95	3.26	3.29	0.73	0.98	3.04	6.24 @ 25F
2010	100.0	0.0	100.0	23.86	13.10	7.20	3.96	3.96	37.70	19.18	9.78	5.00	5.00	1.01	1.48	3.04	4.82 @ 50F
2010	50.0	0.0	50.0	10.91	6.43	3.89	2.43	2.52	17.63	9.71	5.53	3.28	3.41	0.79	1.11	3.04	3.70 @ 75F
2010	0.0	50.0	0.0	3.24	2.68	2.22	1.84	1.93	4.94	3.98	3.21	2.59	2.73	0.67	0.90	3.04	4.09 @100F
2010	50.0	50.0	50.0	13.94	8.25	5.03	3.19	3.20	21.76	11.99	6.87	4.13	4.14	0.87	1.23	3.04	
2010	20.6	27.3	20.6	6.31	4.16	2.87	2.05	2.14	10.05	6.27	4.12	2.84	2.97	0.72	0.99	3.04	
2020	0.0	0.0	0.0	2.94	2.39	1.95	1.58	1.73	4.58	3.61	2.85	2.24	2.46	0.68	0.92	3.04	8.01 @ 0F
2020	0.0	100.0	0.0	3.98	3.36	2.84	2.39	2.41	5.76	4.74	3.90	3.21	3.23	0.76	1.05	3.04	6.24 @ 25F
2020	100.0	0.0	100.0	23.36	12.90	7.12	3.93	3.93	35.43	18.29	9.44	4.88	4.88	1.04	1.56	3.04	4.82 @ 50F
2020	50.0	0.0	50.0	10.67	6.33	3.85	2.41	2.49	16.66	9.31	5.37	3.21	3.33	0.81	1.16	3.04	3.71 @ 75F
2020	0.0	50.0	0.0	3.20	2.65	2.19	1.82	1.91	4.89	3.94	3.17	2.55	2.68	0.70	0.96	3.04	4.09 @100F
2020	50.0	50.0	50.0	13.67	8.13	4.98	3.16	3.17	20.60	11.52	6.67	4.04	4.06	0.90	1.30	3.04	
2020	20.6	27.3	20.6	6.18	4.10	2.83	2.03	2.12	9.62	6.07	4.02	2.78	2.91	0.75	1.04	3.04	

TABLE 1.03: EXHAUST NMHC AT 10.0 MPH

TABLE 1.04

LOW ALTITUDE

EXHAUST NMHC EMISSION FACTORS (GRAMS/MILE) AT 19.6 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	2.84	2.34	1.94	1.61	2.33	4.12	3.50	2.99	2.58	3.55	0.62	0.86	3.30	12.05 @ 0F
1990	0.0	100.0	0.0	3.12	2.80	2.53	2.31	3.21	4.33	4.03	3.79	3.58	5.02	0.71	1.03	3.30	10.32 @ 25F
1990	100.0	0.0	100.0	33.30	16.32	8.12	4.09	3.56	41.04	21.32	11.20	5.95	4.89	0.94	1.46	3.30	8.84 @ 50F
1990	50.0	0.0	50.0	14.87	7.84	4.35	2.57	2.80	18.91	10.61	6.25	3.90	4.06	0.74	1.09	3.30	7.58 @ 75F
1990	0.0	50.0	0.0	2.93	2.51	2.16	1.87	2.66	4.17	3.68	3.28	2.95	4.09	0.64	0.91	3.30	8.73 @100F
1990	50.0	50.0	50.0	18.21	9.56	5.32	3.20	3.38	22.68	12.68	7.49	4.76	4.95	0.82	1.25	3.30	
1990	20.6	27.3	20.6	7.80	4.67	3.04	2.14	2.70	10.23	6.53	4.49	3.33	4.06	0.68	0.98	3.30	
1995	0.0	0.0	0.0	2.30	1.87	1.53	1.25	1.52	3.30	2.71	2.24	1.86	2.32	0.67	0.93	2.51	7.62 @ 0F
1995	0.0	100.0	0.0	2.93	2.50	2.15	1.85	2.10	3.78	3.30	2.90	2.57	3.13	0.76	1.14	2.51	6.44 @ 25F
1995	100.0	0.0	100.0	27.30	13.18	6.45	3.20	3.06	33.62	16.89	8.56	4.37	4.00	0.96	1.59	2.51	5.45 @ 50F
1995	50.0	0.0	50.0	12.22	6.33	3.45	1.99	2.10	15.54	8.41	4.76	2.84	2.97	0.78	1.18	2.51	4.62 @ 75F
1995	0.0	50.0	0.0	2.51	2.09	1.75	1.47	1.72	3.44	2.91	2.47	2.12	2.61	0.69	1.00	2.51	5.67 @100F
1995	50.0	50.0	50.0	15.11	7.84	4.30	2.52	2.58	18.70	10.10	5.73	3.47	3.57	0.86	1.37	2.51	
1995	20.6	27.3	20.6	6.45	3.80	2.42	1.67	1.86	8.42	5.17	3.41	2.41	2.76	0.73	1.07	2.51	
2000	0.0	0.0	0.0	2.14	1.73	1.40	1.14	1.29	3.04	2.44	1.96	1.58	1.83	0.57	0.73	2.16	5.19 @ 0F
2000	0.0	100.0	0.0	2.82	2.38	2.01	1.70	1.78	3.75	3.15	2.65	2.24	2.44	0.64	0.86	2.16	4.28 @ 25F
2000	100.0	0.0	100.0	20.26	10.41	5.40	2.82	2.78	29.30	14.50	7.22	3.62	3.50	0.84	1.24	2.16	3.54 @ 50F
2000	50.0	0.0	50.0	9.20	5.08	2.92	1.75	1.83	13.53	7.23	4.03	2.36	2.46	0.67	0.92	2.16	2.93 @ 75F
2000	0.0	50.0	0.0	2.33	1.93	1.59	1.32	1.44	3.25	2.66	2.19	1.81	2.03	0.59	0.77	2.16	3.52 @100F
2000	50.0	50.0	50.0	11.54	6.39	3.70	2.26	2.28	16.52	8.82	4.94	2.93	2.97	0.74	1.05	2.16	
2000	20.6	27.3	20.6	5.10	3.19	2.11	1.48	1.58	7.44	4.52	2.93	2.02	2.20	0.62	0.83	2.16	
2005	0.0	0.0	0.0	2.04	1.66	1.35	1.09	1.20	3.01	2.39	1.89	1.50	1.64	0.45	0.60	2.05	4.20 @ 0F
2005	0.0	100.0	0.0	2.76	2.32	1.96	1.65	1.66	3.78	3.12	2.58	2.13	2.15	0.51	0.67	2.05	3.36 @ 25F
2005	100.0	0.0	100.0	17.14	9.22	4.98	2.70	2.70	25.19	12.76	6.47	3.29	3.29	0.69	1.00	2.05	2.68 @ 50F
2005	50.0	0.0	50.0	7.82	4.52	2.69	1.66	1.72	11.78	6.45	3.66	2.17	2.25	0.54	0.75	2.05	2.14 @ 75F
2005	0.0	50.0	0.0	2.23	1.84	1.52	1.26	1.32	3.22	2.60	2.11	1.70	1.79	0.47	0.62	2.05	2.50 @100F
2005	50.0	50.0	50.0	9.95	5.77	3.47	2.17	2.18	14.49	7.94	4.53	2.71	2.72	0.60	0.83	2.05	
2005	20.6	27.3	20.6	4.47	2.90	1.98	1.40	1.47	6.68	4.15	2.72	1.87	1.96	0.50	0.67	2.05	
2010	0.0	0.0	0.0	2.00	1.63	1.32	1.07	1.17	3.02	2.38	1.88	1.49	1.63	0.44	0.59	2.03	4.00 @ 0F
2010	0.0	100.0	0.0	2.70	2.28	1.92	1.62	1.64	3.80	3.13	2.58	2.13	2.15	0.49	0.66	2.03	3.11 @ 25F
2010	100.0	0.0	100.0	16.01	8.79	4.83	2.66	2.66	24.54	12.50	6.38	3.26	3.26	0.68	0.99	2.03	2.41 @ 50F
2010	50.0	0.0	50.0	7.32	4.32	2.61	1.63	1.69	11.48	6.33	3.61	2.14	2.22	0.53	0.74	2.03	1.85 @ 75F
2010	0.0	50.0	0.0	2.17	1.80	1.49	1.24	1.30	3.23	2.60	2.10	1.69	1.78	0.45	0.61	2.03	2.04 @100F
2010	50.0	50.0	50.0	9.35	5.54	3.38	2.14	2.15	14.17	7.82	4.48	2.69	2.70	0.58	0.82	2.03	
2010	20.6	27.3	20.6	4.23	2.80	1.92	1.38	1.44	6.55	4.09	2.69	1.85	1.94	0.48	0.66	2.03	
2020	0.0	0.0	0.0	1.98	1.61	1.31	1.07	1.17	3.00	2.37	1.87	1.47	1.61	0.45	0.62	2.03	4.00 @ 0F
2020	0.0	100.0	0.0	2.68	2.26	1.91	1.61	1.63	3.78	3.11	2.56	2.10	2.12	0.51	0.70	2.03	3.11 @ 25F
2020	100.0	0.0	100.0	15.73	8.69	4.79	2.65	2.65	23.23	11.99	6.19	3.20	3.20	0.70	1.04	2.03	2.41 @ 50F
2020	50.0	0.0	50.0	7.19	4.26	2.59	1.62	1.68	10.92	6.10	3.52	2.11	2.18	0.54	0.78	2.03	1.85 @ 75F
2020	0.0	50.0	0.0	2.15	1.78	1.48	1.23	1.29	3.21	2.58	2.08	1.67	1.76	0.47	0.64	2.03	2.04 @100F
2020	50.0	50.0	50.0	9.21	5.47	3.35	2.13	2.14	13.50	7.55	4.37	2.65	2.66	0.60	0.87	2.03	
2020	20.6	27.3	20.6	4.16	2.76	1.91	1.37	1.43	6.30	3.98	2.63	1.83	1.91	0.50	0.69	2.03	

TABLE 1.04: EXHAUST NMHC AT 19.6 MPH

TABLE 1.05

LOW ALTITUDE

EXHAUST NMHC EMISSION FACTORS (GRAMS/MILE) AT 35.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	1.68	1.39	1.15	0.96	1.36	2.51	2.13	1.82	1.56	2.13	0.38	0.53	2.05	5.44 @ 0F
1990	0.0	100.0	0.0	1.89	1.68	1.52	1.38	1.88	2.66	2.47	2.30	2.16	2.98	0.44	0.64	2.05	4.66 @ 25F
1990	100.0	0.0	100.0	20.28	9.85	4.86	2.43	2.13	25.62	13.20	6.88	3.63	3.02	0.58	0.91	2.05	3.99 @ 50F
1990	50.0	0.0	50.0	9.06	4.73	2.61	1.53	1.66	11.81	6.57	3.84	2.38	2.47	0.46	0.67	2.05	3.42 @ 75F
1990	0.0	50.0	0.0	1.76	1.50	1.29	1.11	1.56	2.55	2.24	1.99	1.78	2.44	0.40	0.57	2.05	3.94 @100F
1990	50.0	50.0	50.0	11.08	5.77	3.19	1.90	2.00	14.14	7.83	4.59	2.89	3.00	0.51	0.77	2.05	
1990	20.6	27.3	20.6	4.73	2.81	1.82	1.27	1.59	6.36	4.02	2.75	2.02	2.45	0.42	0.61	2.05	
1995	0.0	0.0	0.0	1.42	1.16	0.95	0.77	0.93	2.13	1.75	1.44	1.20	1.48	0.42	0.57	1.56	3.44 @ 0F
1995	0.0	100.0	0.0	1.82	1.55	1.33	1.14	1.28	2.45	2.13	1.86	1.64	1.98	0.47	0.71	1.56	2.90 @ 25F
1995	100.0	0.0	100.0	17.00	8.14	3.95	1.95	1.87	21.77	10.89	5.49	2.79	2.57	0.60	0.99	1.56	2.46 @ 50F
1995	50.0	0.0	50.0	7.63	3.92	2.13	1.22	1.29	10.08	5.43	3.06	1.82	1.90	0.48	0.73	1.56	2.09 @ 75F
1995	0.0	50.0	0.0	1.56	1.30	1.08	0.91	1.06	2.23	1.88	1.59	1.36	1.66	0.43	0.62	1.56	2.56 @100F
1995	50.0	50.0	50.0	9.41	4.85	2.64	1.54	1.58	12.11	6.51	3.68	2.22	2.28	0.53	0.85	1.56	
1995	20.6	27.3	20.6	4.02	2.36	1.50	1.03	1.14	5.46	3.34	2.20	1.55	1.76	0.45	0.66	1.56	
2000	0.0	0.0	0.0	1.29	1.04	0.84	0.68	0.77	1.93	1.55	1.25	1.00	1.16	0.35	0.45	1.34	2.34 @ 0F
2000	0.0	100.0	0.0	1.70	1.43	1.21	1.02	1.07	2.38	2.00	1.68	1.42	1.54	0.40	0.53	1.34	1.93 @ 25F
2000	100.0	0.0	100.0	12.23	6.25	3.22	1.67	1.65	18.68	9.22	4.57	2.28	2.22	0.52	0.77	1.34	1.60 @ 50F
2000	50.0	0.0	50.0	5.56	3.05	1.75	1.05	1.09	8.64	4.60	2.55	1.49	1.56	0.41	0.57	1.34	1.32 @ 75F
2000	0.0	50.0	0.0	1.40	1.16	0.96	0.79	0.86	2.06	1.69	1.39	1.14	1.28	0.36	0.48	1.34	1.59 @100F
2000	50.0	50.0	50.0	6.96	3.84	2.21	1.35	1.36	10.53	5.61	3.13	1.85	1.88	0.46	0.65	1.34	
2000	20.6	27.3	20.6	3.08	1.92	1.27	0.89	0.95	4.74	2.87	1.86	1.28	1.39	0.38	0.51	1.34	
2005	0.0	0.0	0.0	1.19	0.97	0.79	0.64	0.70	1.88	1.49	1.18	0.94	1.03	0.28	0.37	1.27	1.90 @ 0F
2005	0.0	100.0	0.0	1.61	1.35	1.14	0.96	0.97	2.36	1.95	1.61	1.33	1.34	0.31	0.41	1.27	1.51 @ 25F
2005	100.0	0.0	100.0	10.05	5.39	2.90	1.57	1.57	15.78	7.98	4.04	2.05	2.05	0.43	0.62	1.27	1.21 @ 50F
2005	50.0	0.0	50.0	4.59	2.64	1.57	0.97	1.00	7.38	4.04	2.29	1.35	1.40	0.34	0.47	1.27	0.96 @ 75F
2005	0.0	50.0	0.0	1.30	1.08	0.89	0.74	0.77	2.01	1.63	1.32	1.06	1.12	0.29	0.38	1.27	1.13 @100F
2005	50.0	50.0	50.0	5.83	3.37	2.02	1.26	1.27	9.07	4.96	2.83	1.69	1.70	0.37	0.52	1.27	
2005	20.6	27.3	20.6	2.62	1.70	1.15	0.82	0.86	4.18	2.59	1.70	1.17	1.23	0.31	0.41	1.27	
2010	0.0	0.0	0.0	1.15	0.94	0.76	0.62	0.68	1.86	1.47	1.16	0.92	1.01	0.27	0.36	1.26	1.80 @ 0F
2010	0.0	100.0	0.0	1.56	1.31	1.11	0.94	0.94	2.35	1.93	1.59	1.31	1.33	0.30	0.41	1.26	1.40 @ 25F
2010	100.0	0.0	100.0	9.24	5.07	2.79	1.53	1.53	15.20	7.73	3.94	2.01	2.01	0.42	0.61	1.26	1.09 @ 50F
2010	50.0	0.0	50.0	4.22	2.49	1.51	0.94	0.98	7.11	3.91	2.23	1.32	1.37	0.33	0.46	1.26	0.83 @ 75F
2010	0.0	50.0	0.0	1.25	1.04	0.86	0.71	0.75	1.99	1.61	1.30	1.05	1.10	0.28	0.38	1.26	0.92 @100F
2010	50.0	50.0	50.0	5.40	3.19	1.95	1.23	1.24	8.77	4.83	2.77	1.66	1.67	0.36	0.51	1.26	
2010	20.6	27.3	20.6	2.44	1.61	1.11	0.79	0.83	4.05	2.53	1.66	1.14	1.20	0.30	0.41	1.26	
2020	0.0	0.0	0.0	1.14	0.93	0.75	0.61	0.67	1.84	1.45	1.15	0.90	0.99	0.28	0.38	1.26	1.80 @ 0F
2020	0.0	100.0	0.0	1.54	1.30	1.10	0.93	0.93	2.32	1.91	1.57	1.29	1.30	0.32	0.43	1.26	1.40 @ 25F
2020	100.0	0.0	100.0	9.03	4.99	2.75	1.52	1.52	14.27	7.37	3.80	1.96	1.96	0.43	0.65	1.26	1.09 @ 50F
2020	50.0	0.0	50.0	4.13	2.45	1.49	0.93	0.96	6.71	3.75	2.16	1.29	1.34	0.34	0.48	1.26	0.83 @ 75F
2020	0.0	50.0	0.0	1.24	1.02	0.85	0.70	0.74	1.97	1.59	1.28	1.03	1.08	0.29	0.40	1.26	0.92 @100F
2020	50.0	50.0	50.0	5.29	3.14	1.92	1.22	1.23	8.30	4.64	2.69	1.63	1.63	0.37	0.54	1.26	
2020	20.6	27.3	20.6	2.39	1.59	1.10	0.79	0.82	3.87	2.44	1.62	1.12	1.17	0.31	0.43	1.26	

TABLE 1.05: EXHAUST NMHC AT 35.0 MPH

TABLE 1.06

LOW ALTITUDE

EXHAUST NMHC EMISSION FACTORS (GRAMS/MILE) AT 55.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	1.30	1.08	0.89	0.74	1.05	2.01	1.70	1.45	1.25	1.69	0.28	0.39	1.50	3.48 @ 0F
1990	0.0	100.0	0.0	1.48	1.32	1.18	1.07	1.44	2.14	1.97	1.83	1.72	2.36	0.32	0.47	1.50	2.98 @ 25F
1990	100.0	0.0	100.0	15.91	7.69	3.77	1.88	1.65	20.69	10.62	5.52	2.90	2.42	0.43	0.67	1.50	2.55 @ 50F
1990	50.0	0.0	50.0	7.12	3.70	2.03	1.18	1.28	9.55	5.29	3.08	1.90	1.97	0.34	0.50	1.50	2.19 @ 75F
1990	0.0	50.0	0.0	1.37	1.16	1.00	0.87	1.20	2.05	1.80	1.59	1.42	1.94	0.29	0.42	1.50	2.52 @100F
1990	50.0	50.0	50.0	8.69	4.50	2.48	1.47	1.55	11.41	6.30	3.68	2.31	2.39	0.38	0.57	1.50	
1990	20.6	27.3	20.6	3.71	2.19	1.41	0.99	1.22	5.13	3.23	2.20	1.62	1.95	0.31	0.45	1.50	
1995	0.0	0.0	0.0	1.13	0.92	0.75	0.62	0.73	1.74	1.43	1.18	0.98	1.21	0.31	0.42	1.14	2.20 @ 0F
1995	0.0	100.0	0.0	1.45	1.23	1.05	0.90	1.01	2.00	1.74	1.52	1.34	1.61	0.34	0.52	1.14	1.86 @ 25F
1995	100.0	0.0	100.0	13.50	6.43	3.11	1.52	1.46	17.77	8.87	4.46	2.26	2.09	0.44	0.73	1.14	1.57 @ 50F
1995	50.0	0.0	50.0	6.07	3.11	1.68	0.96	1.01	8.24	4.43	2.49	1.48	1.55	0.35	0.54	1.14	1.34 @ 75F
1995	0.0	50.0	0.0	1.24	1.03	0.86	0.72	0.83	1.82	1.53	1.30	1.11	1.35	0.32	0.46	1.14	1.64 @100F
1995	50.0	50.0	50.0	7.47	3.83	2.08	1.21	1.24	9.89	5.30	2.99	1.80	1.85	0.39	0.62	1.14	
1995	20.6	27.3	20.6	3.20	1.87	1.18	0.81	0.90	4.46	2.73	1.79	1.26	1.43	0.33	0.49	1.14	
2000	0.0	0.0	0.0	1.00	0.81	0.65	0.53	0.60	1.55	1.25	1.00	0.81	0.93	0.26	0.33	0.99	1.50 @ 0F
2000	0.0	100.0	0.0	1.31	1.11	0.93	0.79	0.82	1.91	1.60	1.35	1.14	1.23	0.29	0.39	0.99	1.24 @ 25F
2000	100.0	0.0	100.0	9.50	4.83	2.48	1.28	1.27	15.07	7.42	3.67	1.83	1.78	0.38	0.56	0.99	1.02 @ 50F
2000	50.0	0.0	50.0	4.32	2.37	1.35	0.81	0.84	6.97	3.70	2.05	1.20	1.25	0.30	0.42	0.99	0.85 @ 75F
2000	0.0	50.0	0.0	1.09	0.90	0.74	0.61	0.67	1.66	1.36	1.12	0.92	1.03	0.27	0.35	0.99	1.01 @100F
2000	50.0	50.0	50.0	5.41	2.97	1.71	1.04	1.05	8.49	4.51	2.51	1.48	1.51	0.34	0.48	0.99	
2000	20.6	27.3	20.6	2.39	1.49	0.98	0.69	0.73	3.83	2.31	1.49	1.03	1.12	0.28	0.38	0.99	
2005	0.0	0.0	0.0	0.90	0.73	0.60	0.48	0.53	1.49	1.18	0.94	0.75	0.81	0.21	0.27	0.94	1.21 @ 0F
2005	0.0	100.0	0.0	1.22	1.02	0.86	0.73	0.73	1.87	1.54	1.28	1.05	1.07	0.23	0.31	0.94	0.97 @ 25F
2005	100.0	0.0	100.0	7.63	4.08	2.19	1.18	1.18	12.56	6.34	3.21	1.63	1.63	0.32	0.46	0.94	0.77 @ 50F
2005	50.0	0.0	50.0	3.48	2.00	1.19	0.73	0.76	5.87	3.21	1.82	1.08	1.12	0.25	0.34	0.94	0.62 @ 75F
2005	0.0	50.0	0.0	0.99	0.81	0.67	0.56	0.59	1.60	1.29	1.04	0.85	0.89	0.21	0.28	0.94	0.72 @100F
2005	50.0	50.0	50.0	4.42	2.55	1.53	0.96	0.96	7.22	3.94	2.24	1.34	1.35	0.27	0.38	0.94	
2005	20.6	27.3	20.6	1.99	1.29	0.87	0.62	0.65	3.33	2.06	1.35	0.93	0.97	0.23	0.31	0.94	
2010	0.0	0.0	0.0	0.87	0.70	0.57	0.47	0.51	1.47	1.16	0.92	0.73	0.79	0.20	0.27	0.93	1.16 @ 0F
2010	0.0	100.0	0.0	1.17	0.99	0.83	0.70	0.71	1.85	1.53	1.26	1.04	1.04	0.22	0.30	0.93	0.90 @ 25F
2010	100.0	0.0	100.0	6.94	3.81	2.09	1.15	1.15	12.02	6.11	3.11	1.59	1.59	0.31	0.45	0.93	0.69 @ 50F
2010	50.0	0.0	50.0	3.17	1.87	1.13	0.71	0.73	5.62	3.09	1.76	1.04	1.08	0.24	0.34	0.93	0.53 @ 75F
2010	0.0	50.0	0.0	0.94	0.78	0.65	0.54	0.56	1.57	1.27	1.02	0.82	0.87	0.20	0.28	0.93	0.59 @100F
2010	50.0	50.0	50.0	4.05	2.40	1.46	0.93	0.93	6.93	3.82	2.18	1.31	1.32	0.27	0.38	0.93	
2010	20.6	27.3	20.6	1.83	1.21	0.83	0.60	0.62	3.20	2.00	1.31	0.90	0.95	0.22	0.30	0.93	
2020	0.0	0.0	0.0	0.85	0.69	0.56	0.46	0.50	1.45	1.14	0.90	0.71	0.78	0.21	0.28	0.93	1.15 @ 0F
2020	0.0	100.0	0.0	1.15	0.97	0.82	0.69	0.70	1.83	1.50	1.24	1.02	1.02	0.23	0.32	0.93	0.90 @ 25F
2020	100.0	0.0	100.0	6.76	3.73	2.06	1.14	1.14	11.22	5.79	2.99	1.54	1.54	0.32	0.47	0.93	0.69 @ 50F
2020	50.0	0.0	50.0	3.09	1.83	1.11	0.70	0.72	5.28	2.95	1.70	1.02	1.05	0.25	0.35	0.93	0.53 @ 75F
2020	0.0	50.0	0.0	0.93	0.77	0.63	0.53	0.55	1.55	1.25	1.00	0.81	0.85	0.21	0.29	0.93	0.59 @100F
2020	50.0	50.0	50.0	3.95	2.35	1.44	0.92	0.92	6.52	3.65	2.11	1.28	1.28	0.28	0.40	0.93	
2020	20.6	27.3	20.6	1.79	1.19	0.82	0.59	0.61	3.05	1.92	1.27	0.88	0.92	0.23	0.32	0.93	

TABLE 1.06: EXHAUST NMHC AT 55.0 MPH

TABLE 1.07

LOW ALTITUDE

EXHAUST NMHC EMISSION FACTORS (GRAMS/MILE) AT 65.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	-HDGV-
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	2.35	1.94	1.61	1.34	1.91	3.73	3.16	2.70	2.32	3.17	0.28	0.38	1.47	3.57 @ 0F
1990	0.0	100.0	0.0	2.30	2.06	1.86	1.69	2.34	3.49	3.24	3.03	2.85	3.97	0.32	0.46	1.47	3.06 @ 25F
1990	100.0	0.0	100.0	24.29	11.84	5.86	2.94	2.55	32.95	17.06	8.93	4.73	3.90	0.42	0.65	1.47	2.62 @ 50F
1990	50.0	0.0	50.0	11.77	6.17	3.41	2.01	2.19	16.41	9.17	5.38	3.35	3.49	0.33	0.49	1.47	2.25 @ 75F
1990	0.0	50.0	0.0	2.33	1.99	1.71	1.48	2.09	3.62	3.19	2.83	2.54	3.49	0.29	0.41	1.47	2.59 @100F
1990	50.0	50.0	50.0	13.30	6.95	3.86	2.32	2.44	18.22	10.15	5.98	3.79	3.93	0.37	0.56	1.47	
1990	20.6	27.3	20.6	6.19	3.70	2.40	1.69	2.12	8.89	5.65	3.88	2.87	3.48	0.30	0.44	1.47	
1995	0.0	0.0	0.0	1.81	1.48	1.21	0.99	1.20	2.94	2.43	2.01	1.67	2.09	0.30	0.41	1.12	2.26 @ 0F
1995	0.0	100.0	0.0	2.00	1.71	1.47	1.26	1.44	2.92	2.56	2.26	2.00	2.46	0.34	0.51	1.12	1.91 @ 25F
1995	100.0	0.0	100.0	18.84	8.96	4.32	2.12	2.02	25.88	12.95	6.54	3.33	3.03	0.43	0.71	1.12	1.62 @ 50F
1995	50.0	0.0	50.0	9.23	4.72	2.55	1.47	1.55	13.06	7.05	3.99	2.39	2.50	0.35	0.53	1.12	1.37 @ 75F
1995	0.0	50.0	0.0	1.88	1.57	1.31	1.10	1.30	2.92	2.47	2.11	1.81	2.24	0.31	0.45	1.12	1.68 @100F
1995	50.0	50.0	50.0	10.42	5.34	2.89	1.69	1.73	14.40	7.75	4.40	2.66	2.75	0.38	0.61	1.12	
1995	20.6	27.3	20.6	4.88	2.85	1.81	1.25	1.39	7.10	4.36	2.89	2.05	2.35	0.32	0.48	1.12	
2000	0.0	0.0	0.0	1.47	1.19	0.96	0.78	0.89	2.32	1.87	1.51	1.22	1.43	0.25	0.32	0.96	1.54 @ 0F
2000	0.0	100.0	0.0	1.67	1.41	1.19	1.01	1.06	2.46	2.08	1.76	1.49	1.65	0.28	0.38	0.96	1.27 @ 25F
2000	100.0	0.0	100.0	12.27	6.21	3.17	1.64	1.61	19.77	9.71	4.80	2.39	2.30	0.37	0.55	0.96	1.05 @ 50F
2000	50.0	0.0	50.0	6.13	3.34	1.90	1.13	1.19	10.02	5.32	2.95	1.73	1.80	0.30	0.41	0.96	0.87 @ 75F
2000	0.0	50.0	0.0	1.53	1.26	1.04	0.86	0.95	2.36	1.95	1.61	1.33	1.51	0.26	0.34	0.96	1.04 @100F
2000	50.0	50.0	50.0	6.97	3.81	2.18	1.32	1.34	11.12	5.89	3.28	1.94	1.98	0.33	0.47	0.96	
2000	20.6	27.3	20.6	3.40	2.10	1.39	0.97	1.04	5.50	3.33	2.15	1.49	1.63	0.28	0.37	0.96	
2005	0.0	0.0	0.0	1.28	1.04	0.85	0.69	0.75	2.06	1.63	1.30	1.03	1.13	0.20	0.26	0.92	1.25 @ 0F
2005	0.0	100.0	0.0	1.51	1.27	1.07	0.90	0.91	2.22	1.84	1.52	1.25	1.27	0.23	0.30	0.92	1.00 @ 25F
2005	100.0	0.0	100.0	9.51	5.07	2.72	1.46	1.46	15.10	7.60	3.83	1.94	1.94	0.31	0.45	0.92	0.80 @ 50F
2005	50.0	0.0	50.0	4.79	2.74	1.63	1.00	1.04	7.80	4.25	2.40	1.42	1.47	0.24	0.33	0.92	0.63 @ 75F
2005	0.0	50.0	0.0	1.35	1.11	0.92	0.76	0.80	2.10	1.70	1.38	1.12	1.17	0.21	0.27	0.92	0.74 @100F
2005	50.0	50.0	50.0	5.51	3.17	1.89	1.18	1.18	8.66	4.72	2.67	1.60	1.60	0.27	0.37	0.92	
2005	20.6	27.3	20.6	2.74	1.77	1.20	0.85	0.89	4.43	2.74	1.79	1.23	1.29	0.22	0.30	0.92	
2010	0.0	0.0	0.0	1.22	0.99	0.80	0.65	0.71	1.97	1.56	1.23	0.97	1.07	0.19	0.26	0.91	1.19 @ 0F
2010	0.0	100.0	0.0	1.43	1.21	1.02	0.86	0.87	2.13	1.76	1.45	1.20	1.21	0.22	0.29	0.91	0.92 @ 25F
2010	100.0	0.0	100.0	8.49	4.66	2.56	1.41	1.41	14.01	7.10	3.61	1.84	1.84	0.30	0.44	0.91	0.71 @ 50F
2010	50.0	0.0	50.0	4.29	2.53	1.53	0.96	0.99	7.26	3.98	2.26	1.34	1.39	0.23	0.33	0.91	0.55 @ 75F
2010	0.0	50.0	0.0	1.27	1.05	0.87	0.72	0.76	2.02	1.63	1.31	1.06	1.11	0.20	0.27	0.91	0.61 @100F
2010	50.0	50.0	50.0	4.96	2.93	1.79	1.13	1.14	8.07	4.43	2.53	1.52	1.52	0.26	0.37	0.91	
2010	20.6	27.3	20.6	2.49	1.65	1.13	0.81	0.85	4.15	2.58	1.69	1.17	1.22	0.21	0.29	0.91	
2020	0.0	0.0	0.0	1.20	0.97	0.79	0.64	0.70	1.93	1.52	1.20	0.94	1.03	0.20	0.28	0.91	1.18 @ 0F
2020	0.0	100.0	0.0	1.41	1.19	1.00	0.85	0.86	2.09	1.72	1.41	1.16	1.17	0.23	0.31	0.91	0.92 @ 25F
2020	100.0	0.0	100.0	8.27	4.57	2.52	1.39	1.39	12.82	6.62	3.42	1.76	1.76	0.31	0.46	0.91	0.71 @ 50F
2020	50.0	0.0	50.0	4.18	2.48	1.51	0.94	0.98	6.70	3.74	2.16	1.29	1.34	0.24	0.35	0.91	0.55 @ 75F
2020	0.0	50.0	0.0	1.25	1.04	0.86	0.71	0.75	1.97	1.58	1.27	1.03	1.08	0.21	0.28	0.91	0.61 @100F
2020	50.0	50.0	50.0	4.84	2.88	1.76	1.12	1.12	7.45	4.17	2.41	1.46	1.47	0.27	0.39	0.91	
2020	20.6	27.3	20.6	2.43	1.61	1.11	0.80	0.83	3.89	2.45	1.63	1.13	1.18	0.22	0.31	0.91	

TABLE 1.07: EXHAUST NMHC AT 65.0 MPH

TABLE 1.08

LOW ALTITUDE

EXHAUST CO EMISSION FACTORS (GRAMS/MILE) AT 2.5 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV						LDGT						-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F			
1990	0.0	0.0	0.0	298.01	226.26	173.79	135.20	297.22	374.42	299.01	241.79	198.09	414.17	4.01	4.70	44.31	636.65 @ 0F 579.63 @ 25F 528.56 @ 50F 482.77 @ 75F 783.94 @100F		
1990	0.0	100.0	0.0	272.00	231.90	200.67	176.48	290.43	315.47	283.36	258.72	240.05	422.54	6.70	8.46	44.31			
1990	100.0	0.0	100.0	1677.94	1056.94	638.93	332.09	277.80	2391.00	1474.14	904.58	529.17	407.90	9.21	10.27	44.31			
1990	50.0	0.0	50.0	842.54	556.45	359.70	213.89	293.30	1178.50	771.32	511.09	334.96	419.12	5.93	6.76	44.31			
1990	0.0	50.0	0.0	291.56	231.47	186.67	153.17	297.54	356.49	297.05	251.76	217.15	419.87	4.99	6.08	44.31			
1990	50.0	50.0	50.0	974.97	644.42	419.80	254.29	284.11	1353.24	878.74	581.65	384.61	415.22	7.96	9.36	44.31			
1990	20.6	27.3	20.6	517.27	364.23	256.92	177.22	296.06	697.14	493.75	359.32	265.92	421.76	5.32	6.28	44.31			
1995	0.0	0.0	0.0	264.63	187.16	133.13	95.33	143.71	325.12	237.57	175.53	131.27	223.81	4.13	4.84	39.55	432.14 @ 0F 388.88 @ 25F 350.77 @ 50F 317.17 @ 75F 540.72 @100F		
1995	0.0	100.0	0.0	262.58	212.02	172.16	140.75	190.97	298.89	249.04	209.71	178.71	267.23	6.97	8.77	39.55			
1995	100.0	0.0	100.0	876.77	613.68	401.69	217.70	212.38	1277.73	861.83	574.31	358.21	326.74	9.87	10.63	39.55			
1995	50.0	0.0	50.0	497.70	350.54	236.65	143.01	170.84	703.90	487.47	337.32	226.11	270.13	6.25	6.98	39.55			
1995	0.0	50.0	0.0	262.23	196.16	148.17	113.14	162.64	315.75	243.55	190.62	151.57	243.22	5.16	6.28	39.55			
1995	50.0	50.0	50.0	569.68	412.85	286.92	179.22	201.68	788.31	555.43	392.01	268.46	296.98	8.42	9.70	39.55			
1995	20.6	27.3	20.6	358.16	258.53	183.42	124.39	165.02	478.46	345.62	251.89	182.67	255.78	5.55	6.48	39.55			
2000	0.0	0.0	0.0	233.51	160.32	110.22	75.89	92.20	307.94	210.88	145.21	100.61	136.33	3.85	4.22	36.96	259.97 @ 0F 231.54 @ 25F 206.73 @ 50F 185.04 @ 75F 304.15 @100F		
2000	0.0	100.0	0.0	231.18	184.67	147.68	118.26	147.93	277.02	223.34	180.75	146.94	193.72	6.35	7.55	36.96			
2000	100.0	0.0	100.0	493.78	374.46	267.23	166.48	172.19	740.37	543.32	384.55	246.83	247.57	8.89	9.19	36.96			
2000	50.0	0.0	50.0	318.99	232.36	163.56	106.26	118.14	465.98	333.97	235.08	156.58	178.33	5.71	6.06	36.96			
2000	0.0	50.0	0.0	221.18	161.74	119.09	88.31	109.34	285.43	208.97	154.70	115.88	155.74	4.76	5.44	36.96			
2000	50.0	50.0	50.0	362.48	279.57	207.46	142.37	160.06	508.69	383.33	282.65	196.89	220.65	7.62	8.37	36.96			
2000	20.6	27.3	20.6	260.24	189.44	136.06	94.51	111.53	360.51	260.35	187.30	132.00	164.49	5.10	5.63	36.96			
2005	0.0	0.0	0.0	223.28	152.43	104.07	71.06	76.35	301.23	199.05	131.64	87.13	94.72	3.53	3.82	36.00	156.71 @ 0F 138.70 @ 25F 123.14 @ 50F 109.68 @ 75F 161.86 @100F		
2005	0.0	100.0	0.0	224.17	178.40	141.99	113.02	137.03	260.55	207.65	165.52	131.97	160.49	5.66	6.75	36.00			
2005	100.0	0.0	100.0	354.28	287.49	220.70	153.90	162.61	487.91	388.73	289.55	190.38	201.68	7.82	8.24	36.00			
2005	50.0	0.0	50.0	255.11	190.77	139.14	96.19	102.37	352.64	258.39	183.63	121.72	130.42	5.11	5.45	36.00			
2005	0.0	50.0	0.0	208.05	151.27	110.63	81.39	93.15	267.74	190.41	136.64	98.95	114.13	4.30	4.89	36.00			
2005	50.0	50.0	50.0	289.23	232.95	181.34	133.46	149.82	374.23	298.19	227.54	161.17	181.09	6.74	7.50	36.00			
2005	20.6	27.3	20.6	225.98	165.99	120.89	86.18	95.27	302.56	217.62	154.96	107.30	119.45	4.59	5.06	36.00			
2010	0.0	0.0	0.0	219.78	150.04	102.44	69.93	74.73	303.85	199.46	130.97	86.03	91.93	3.49	3.80	35.72	121.76 @ 0F 104.75 @ 25F 90.11 @ 50F 77.52 @ 75F 100.43 @100F		
2010	0.0	100.0	0.0	220.38	175.64	139.98	111.56	135.12	255.88	203.93	162.52	129.52	156.88	5.57	6.71	35.72			
2010	100.0	0.0	100.0	316.58	261.63	206.69	151.75	160.25	453.93	362.42	270.91	179.40	189.44	7.66	8.19	35.72			
2010	50.0	0.0	50.0	237.64	178.58	132.00	93.94	99.70	338.29	246.13	174.01	115.05	122.10	5.03	5.42	35.72			
2010	0.0	50.0	0.0	203.14	147.73	108.07	79.53	90.70	264.83	187.22	133.58	96.21	109.67	4.25	4.86	35.72			
2010	50.0	50.0	50.0	268.48	218.64	173.34	131.65	147.68	354.90	283.17	216.72	154.46	173.16	6.62	7.45	35.72			
2010	20.6	27.3	20.6	215.82	158.84	116.41	84.11	92.68	294.43	210.29	148.87	102.66	113.06	4.53	5.03	35.72			
2020	0.0	0.0	0.0	218.53	149.26	101.94	69.63	74.40	302.35	197.73	129.31	84.57	90.37	3.54	3.88	35.66	115.62 @ 0F 99.47 @ 25F 85.57 @ 50F 73.61 @ 75F 95.37 @100F		
2020	0.0	100.0	0.0	219.54	174.97	139.44	111.13	134.60	250.08	199.31	158.84	126.59	153.32	5.68	6.87	35.66			
2020	100.0	0.0	100.0	305.82	254.30	202.79	151.27	159.74	429.71	343.03	256.36	169.68	179.18	7.85	8.39	35.66			
2020	50.0	0.0	50.0	232.51	175.06	129.98	93.34	99.06	326.42	236.26	166.28	109.49	116.21	5.13	5.54	35.66			
2020	0.0	50.0	0.0	201.65	146.68	107.31	78.98	90.07	260.42	183.45	130.45	93.65	106.71	4.32	4.97	35.66			
2020	50.0	50.0	50.0	262.68	214.63	171.12	131.20	147.17	339.89	271.17	207.60	148.14	166.25	6.76	7.63	35.66			
2020	20.6	27.3	20.6	212.82	156.76	115.12	83.54	92.04	286.89	203.96	143.81	98.85	108.88	4.60	5.14	35.66			

TABLE 1.08: EXHAUST CO AT 2.5 MPH

TABLE 1.09

LOW ALTITUDE

EXHAUST CO EMISSION FACTORS (GRAMS/MILE) AT 5.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	154.24	117.31	90.32	70.49	153.59	198.97	159.58	129.66	106.77	221.91	3.28	3.84	36.17	508.70 @ 0F
1990	0.0	100.0	0.0	140.74	120.16	104.16	91.79	150.87	165.99	149.80	137.44	128.14	226.11	5.47	6.90	36.17	463.13 @ 25F
1990	100.0	0.0	100.0	872.50	550.54	333.00	172.76	144.34	1277.14	786.40	481.44	280.54	213.90	7.52	8.39	36.17	422.33 @ 50F
1990	50.0	0.0	50.0	437.46	289.32	187.16	111.28	151.70	627.84	410.75	272.05	178.26	222.17	4.84	5.52	36.17	385.74 @ 75F
1990	0.0	50.0	0.0	150.73	119.86	96.87	79.69	153.91	188.39	157.65	134.23	116.33	224.45	4.07	4.96	36.17	626.38 @100F
1990	50.0	50.0	50.0	506.62	335.35	218.58	132.27	147.61	721.56	468.10	309.44	204.34	220.00	6.49	7.64	36.17	
1990	20.6	27.3	20.6	268.18	189.08	133.53	92.21	153.12	370.39	262.55	191.34	141.94	224.61	4.34	5.13	36.17	
1995	0.0	0.0	0.0	139.82	98.81	70.24	50.28	75.24	172.49	125.98	93.09	69.66	118.35	3.37	3.95	32.28	345.29 @ 0F
1995	0.0	100.0	0.0	138.75	112.04	90.99	74.40	100.75	157.55	131.41	110.80	94.57	141.62	5.69	7.16	32.28	310.72 @ 25F
1995	100.0	0.0	100.0	466.86	327.24	213.99	115.21	112.52	684.87	461.14	305.69	188.29	170.81	8.06	8.68	32.28	280.28 @ 50F
1995	50.0	0.0	50.0	263.78	185.88	125.36	75.41	89.75	374.93	259.21	178.68	118.83	141.59	5.10	5.70	32.28	253.42 @ 75F
1995	0.0	50.0	0.0	138.23	103.36	78.06	59.60	85.27	166.55	128.47	100.60	80.07	128.38	4.22	5.12	32.28	432.04 @100F
1995	50.0	50.0	50.0	302.80	219.64	152.49	94.81	106.63	421.21	296.28	208.24	141.43	156.22	6.87	7.92	32.28	
1995	20.6	27.3	20.6	189.35	136.69	96.90	65.55	86.57	253.76	183.08	133.14	96.20	134.51	4.53	5.29	32.28	
2000	0.0	0.0	0.0	127.92	87.76	60.29	41.47	50.05	168.91	115.43	79.31	54.83	73.78	3.14	3.45	30.17	207.72 @ 0F
2000	0.0	100.0	0.0	126.68	101.19	80.91	64.77	80.87	151.09	121.79	98.54	80.09	105.33	5.18	6.17	30.17	185.01 @ 25F
2000	100.0	0.0	100.0	270.02	205.15	146.48	91.16	94.40	403.37	296.08	208.98	133.00	133.44	7.26	7.51	30.17	165.18 @ 50F
2000	50.0	0.0	50.0	174.25	127.01	89.40	58.02	64.34	253.76	181.70	127.54	84.42	95.94	4.66	4.94	30.17	147.85 @ 75F
2000	0.0	50.0	0.0	120.95	88.40	65.05	48.21	59.43	155.77	113.86	84.16	62.96	84.21	3.88	4.44	30.17	243.02 @100F
2000	50.0	50.0	50.0	198.35	153.17	113.69	77.97	87.64	277.23	208.94	153.76	106.54	119.39	6.22	6.84	30.17	
2000	20.6	27.3	20.6	142.22	103.54	74.34	51.59	60.65	196.47	141.71	101.72	71.42	88.69	4.16	4.59	30.17	
2005	0.0	0.0	0.0	124.21	84.78	57.88	39.51	42.44	169.23	111.71	73.80	48.79	52.94	2.88	3.12	29.39	125.21 @ 0F
2005	0.0	100.0	0.0	124.69	99.24	79.00	62.88	76.24	145.85	116.23	92.64	73.86	89.78	4.62	5.51	29.39	110.83 @ 25F
2005	100.0	0.0	100.0	197.28	160.08	122.88	85.68	90.52	274.02	217.97	161.92	105.87	112.12	6.38	6.73	29.39	98.39 @ 50F
2005	50.0	0.0	50.0	141.88	106.09	77.37	53.48	56.91	197.77	144.69	102.58	67.71	72.48	4.18	4.45	29.39	87.63 @ 75F
2005	0.0	50.0	0.0	115.65	84.08	61.49	45.24	51.76	149.98	106.57	76.41	55.29	63.69	3.51	3.99	29.39	129.33 @100F
2005	50.0	50.0	50.0	160.98	129.66	100.94	74.28	83.38	209.93	167.10	127.28	89.86	100.95	5.50	6.12	29.39	
2005	20.6	27.3	20.6	125.64	92.28	67.21	47.90	52.94	169.55	121.80	86.59	59.81	66.51	3.75	4.13	29.39	
2010	0.0	0.0	0.0	122.86	83.88	57.26	39.10	41.78	172.18	112.99	74.16	48.69	52.03	2.85	3.10	29.16	97.29 @ 0F
2010	0.0	100.0	0.0	123.21	98.20	78.26	62.37	75.54	144.77	115.38	91.95	73.28	88.76	4.55	5.48	29.16	83.70 @ 25F
2010	100.0	0.0	100.0	177.03	146.30	115.58	84.86	89.61	256.85	204.97	153.08	101.19	106.86	6.26	6.69	29.16	72.00 @ 50F
2010	50.0	0.0	50.0	132.84	99.83	73.79	52.51	55.73	191.44	139.20	98.33	64.92	68.90	4.11	4.42	29.16	61.94 @ 75F
2010	0.0	50.0	0.0	113.54	82.57	60.41	44.45	50.70	149.91	105.94	75.57	54.41	62.02	3.47	3.97	29.16	80.25 @100F
2010	50.0	50.0	50.0	150.12	122.25	96.92	73.61	82.57	200.81	160.17	122.51	87.24	97.81	5.40	6.08	29.16	
2010	20.6	27.3	20.6	120.64	88.79	65.07	47.02	51.80	166.64	118.96	84.17	58.00	63.87	3.69	4.11	29.16	
2020	0.0	0.0	0.0	122.35	83.57	57.08	38.98	41.66	172.08	112.54	73.60	48.13	51.43	2.89	3.16	29.11	92.38 @ 0F
2020	0.0	100.0	0.0	122.91	97.96	78.07	62.22	75.36	142.33	113.43	90.40	72.05	87.26	4.64	5.61	29.11	79.48 @ 25F
2020	100.0	0.0	100.0	171.22	142.38	113.53	84.69	89.43	244.57	195.23	145.90	96.57	101.98	6.41	6.84	29.11	68.37 @ 50F
2020	50.0	0.0	50.0	130.18	98.01	72.77	52.26	55.46	185.78	134.47	94.64	62.31	66.14	4.19	4.52	29.11	58.82 @ 75F
2020	0.0	50.0	0.0	112.89	82.12	60.08	44.22	50.43	148.21	104.41	74.24	53.30	60.73	3.52	4.06	29.11	76.20 @100F
2020	50.0	50.0	50.0	147.07	120.17	95.80	73.46	82.40	193.45	154.33	118.15	84.31	94.62	5.52	6.23	29.11	
2020	20.6	27.3	20.6	119.15	87.76	64.45	46.77	51.53	163.28	116.08	81.85	56.26	61.97	3.76	4.20	29.11	

TABLE 1.09: EXHAUST CO AT 5.0 MPH

TABLE 1.10

LOW ALTITUDE

EXHAUST CO EMISSION FACTORS (GRAMS/MILE) AT 10.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	79.26	60.03	46.02	35.75	76.99	99.56	79.53	64.38	52.84	110.03	2.26	2.65	24.94	338.44 @ 0F
1990	0.0	100.0	0.0	73.11	62.16	53.64	47.04	76.52	83.81	75.33	68.83	63.91	112.04	3.77	4.76	24.94	308.13 @ 25F
1990	100.0	0.0	100.0	447.98	284.40	172.30	88.44	74.69	640.06	395.35	241.94	139.62	107.32	5.18	5.78	24.94	280.98 @ 50F
1990	50.0	0.0	50.0	224.61	149.04	96.35	56.74	76.90	314.52	206.01	136.18	88.51	110.55	3.34	3.80	24.94	256.64 @ 75F
1990	0.0	50.0	0.0	77.68	61.54	49.54	40.59	77.46	94.42	78.73	66.81	57.72	111.17	2.81	3.42	24.94	416.74 @100F
1990	50.0	50.0	50.0	260.55	173.28	112.97	67.74	75.61	361.94	235.34	155.39	101.77	109.68	4.48	5.27	24.94	
1990	20.6	27.3	20.6	137.84	97.27	68.54	46.98	77.27	185.55	131.46	95.54	70.44	111.45	2.99	3.54	24.94	
1995	0.0	0.0	0.0	76.56	53.89	38.14	27.17	39.72	92.35	66.85	48.94	36.28	60.52	2.32	2.72	22.26	229.72 @ 0F
1995	0.0	100.0	0.0	76.36	61.56	49.87	40.66	54.49	84.62	70.26	58.92	49.97	73.74	3.92	4.93	22.26	206.73 @ 25F
1995	100.0	0.0	100.0	256.10	180.62	118.14	62.79	61.83	361.32	245.04	162.20	97.97	89.91	5.56	5.99	22.26	186.47 @ 50F
1995	50.0	0.0	50.0	144.08	101.80	68.54	40.80	48.15	197.74	137.02	94.07	61.58	73.11	3.52	3.93	22.26	168.60 @ 75F
1995	0.0	50.0	0.0	75.54	56.32	42.40	32.26	45.37	88.77	68.01	52.89	41.79	65.93	2.91	3.53	22.26	287.44 @100F
1995	50.0	50.0	50.0	166.23	121.09	84.00	51.72	58.16	222.97	157.65	110.56	73.97	81.82	4.74	5.46	22.26	
1995	20.6	27.3	20.6	103.42	74.67	52.80	35.46	46.19	134.30	96.76	69.99	49.99	69.19	3.12	3.65	22.26	
2000	0.0	0.0	0.0	75.00	51.38	35.23	24.20	28.75	98.28	66.77	45.58	31.29	41.00	2.16	2.38	20.80	138.20 @ 0F
2000	0.0	100.0	0.0	74.37	59.38	47.45	37.97	47.20	87.57	70.45	56.87	46.07	59.90	3.57	4.25	20.80	123.09 @ 25F
2000	100.0	0.0	100.0	157.38	120.08	85.89	53.38	55.44	228.61	168.89	119.15	74.91	75.68	5.01	5.18	20.80	109.90 @ 50F
2000	50.0	0.0	50.0	101.51	74.12	52.19	33.81	37.28	144.57	103.63	72.51	47.49	53.58	3.21	3.41	20.80	98.36 @ 75F
2000	0.0	50.0	0.0	70.74	51.65	37.96	28.10	34.29	90.06	65.53	48.20	35.87	47.08	2.68	3.06	20.80	161.68 @100F
2000	50.0	50.0	50.0	115.87	89.73	66.67	45.67	51.32	158.09	119.67	88.01	60.49	67.79	4.29	4.71	20.80	
2000	20.6	27.3	20.6	83.00	60.44	43.38	30.06	35.04	112.66	81.12	58.01	40.42	49.51	2.87	3.17	20.80	
2005	0.0	0.0	0.0	74.67	50.96	34.78	23.74	25.48	103.22	68.04	44.88	29.62	32.05	1.99	2.15	20.26	83.31 @ 0F
2005	0.0	100.0	0.0	74.95	59.66	47.50	37.82	45.84	88.49	70.52	56.21	44.80	54.43	3.19	3.80	20.26	73.73 @ 25F
2005	100.0	0.0	100.0	118.77	96.37	73.97	51.57	54.48	167.08	132.59	98.10	63.62	67.34	4.40	4.64	20.26	65.46 @ 50F
2005	50.0	0.0	50.0	85.27	63.75	46.49	32.13	34.17	120.33	87.83	62.06	40.70	43.50	2.88	3.07	20.26	58.30 @ 75F
2005	0.0	50.0	0.0	69.45	50.49	36.92	27.16	31.07	91.10	64.65	46.30	33.46	38.47	2.42	2.75	20.26	86.04 @100F
2005	50.0	50.0	50.0	96.86	78.02	60.73	44.69	50.16	127.78	101.56	77.15	54.21	60.88	3.79	4.22	20.26	
2005	20.6	27.3	20.6	75.47	55.43	40.36	28.77	31.78	103.05	73.89	52.41	36.07	40.04	2.59	2.85	20.26	
2010	0.0	0.0	0.0	74.40	50.79	34.68	23.67	25.30	106.35	69.75	45.76	30.03	32.08	1.97	2.14	20.11	64.73 @ 0F
2010	0.0	100.0	0.0	74.63	59.47	47.40	37.78	45.75	89.21	71.10	56.67	45.16	54.70	3.14	3.78	20.11	55.68 @ 25F
2010	100.0	0.0	100.0	107.25	88.64	70.03	51.41	54.29	158.31	126.24	94.16	62.09	65.57	4.31	4.61	20.11	47.90 @ 50F
2010	50.0	0.0	50.0	80.44	60.45	44.69	31.80	33.75	118.01	85.74	60.49	39.86	42.31	2.83	3.05	20.11	41.21 @ 75F
2010	0.0	50.0	0.0	68.75	50.00	36.57	26.92	30.69	92.44	65.30	46.56	33.51	38.19	2.39	2.74	20.11	53.39 @100F
2010	50.0	50.0	50.0	90.94	74.06	58.71	44.59	50.02	123.76	98.67	75.42	53.63	60.13	3.72	4.19	20.11	
2010	20.6	27.3	20.6	73.05	53.76	39.40	28.47	31.37	102.75	73.30	51.82	35.67	39.28	2.55	2.83	20.11	
2020	0.0	0.0	0.0	74.26	50.72	34.64	23.66	25.28	106.94	69.94	45.74	29.91	31.97	1.99	2.18	20.07	61.46 @ 0F
2020	0.0	100.0	0.0	74.60	59.45	47.38	37.76	45.74	88.46	70.50	56.18	44.78	54.23	3.20	3.87	20.07	52.88 @ 25F
2020	100.0	0.0	100.0	103.92	86.41	68.91	51.40	54.28	151.99	121.33	90.68	60.02	63.38	4.42	4.72	20.07	45.49 @ 50F
2020	50.0	0.0	50.0	79.01	59.49	44.17	31.72	33.66	115.46	83.57	58.81	38.73	41.11	2.89	3.12	20.07	39.13 @ 75F
2020	0.0	50.0	0.0	68.52	49.84	36.47	26.84	30.60	92.11	64.89	46.14	33.13	37.74	2.43	2.80	20.07	50.70 @100F
2020	50.0	50.0	50.0	89.26	72.93	58.15	44.58	50.01	120.23	95.92	73.43	52.40	58.81	3.81	4.29	20.07	
2020	20.6	27.3	20.6	72.32	53.27	39.12	28.39	31.27	101.48	72.14	50.87	34.96	38.51	2.59	2.89	20.07	

TABLE 1.10: EXHAUST CO AT 10.0 MPH

TABLE 1.11

LOW ALTITUDE

EXHAUST CO EMISSION FACTORS (GRAMS/MILE) AT 19.6 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	43.23	32.58	24.85	19.21	40.64	53.61	42.65	34.40	28.15	59.20	1.26	1.47	13.88	180.57 @ 0F
1990	0.0	100.0	0.0	40.38	34.18	29.34	25.58	41.03	45.11	40.44	36.85	34.12	59.58	2.10	2.65	13.88	164.40 @ 25F
1990	100.0	0.0	100.0	244.73	156.71	95.13	48.04	41.16	346.31	214.25	130.62	74.03	57.16	2.88	3.22	13.88	149.91 @ 50F
1990	50.0	0.0	50.0	122.58	81.74	52.79	30.66	41.18	169.79	111.16	73.14	46.90	59.01	1.86	2.12	13.88	136.93 @ 75F
1990	0.0	50.0	0.0	42.46	33.50	26.85	21.90	41.07	50.62	42.08	35.61	30.69	59.35	1.56	1.90	13.88	222.35 @100F
1990	50.0	50.0	50.0	142.55	95.45	62.23	36.81	41.09	195.71	127.35	83.73	54.08	58.37	2.49	2.93	13.88	
1990	20.6	27.3	20.6	75.26	53.18	37.36	25.35	41.12	99.93	70.68	51.14	37.38	59.49	1.67	1.97	13.88	
1995	0.0	0.0	0.0	45.77	32.06	22.56	15.97	22.63	54.00	38.65	27.97	20.49	33.48	1.29	1.51	12.39	122.57 @ 0F
1995	0.0	100.0	0.0	45.91	36.94	29.85	24.25	32.08	49.40	40.81	34.03	28.66	41.59	2.18	2.75	12.39	110.30 @ 25F
1995	100.0	0.0	100.0	154.12	109.51	71.60	37.35	37.16	208.78	142.57	93.85	54.84	50.93	3.09	3.33	12.39	99.49 @ 50F
1995	50.0	0.0	50.0	86.04	60.99	40.96	24.02	28.02	113.78	78.94	53.76	34.29	40.60	1.96	2.18	12.39	89.96 @ 75F
1995	0.0	50.0	0.0	44.98	33.42	25.06	18.99	26.11	51.40	39.05	30.10	23.58	36.54	1.62	1.97	12.39	153.36 @100F
1995	50.0	50.0	50.0	100.01	73.22	50.72	30.80	34.62	129.09	91.69	63.94	41.75	46.26	2.64	3.04	12.39	
1995	20.6	27.3	20.6	61.66	44.52	31.37	20.86	26.68	77.38	55.60	39.88	27.98	38.32	1.74	2.03	12.39	
2000	0.0	0.0	0.0	49.13	33.60	23.00	15.76	18.41	64.02	43.21	29.28	19.94	25.42	1.21	1.32	11.58	73.73 @ 0F
2000	0.0	100.0	0.0	48.78	38.93	31.10	24.86	30.76	56.63	45.48	36.62	29.58	38.02	1.99	2.37	11.58	65.67 @ 25F
2000	100.0	0.0	100.0	102.52	78.58	56.30	34.92	36.38	144.96	107.69	75.77	46.81	47.59	2.79	2.88	11.58	58.63 @ 50F
2000	50.0	0.0	50.0	66.03	48.30	34.02	21.99	24.09	92.04	65.98	45.94	29.65	33.19	1.79	1.90	11.58	52.48 @ 75F
2000	0.0	50.0	0.0	46.19	33.68	24.72	18.28	22.06	58.14	42.08	30.79	22.79	29.31	1.49	1.70	11.58	86.26 @100F
2000	50.0	50.0	50.0	75.65	58.76	43.70	29.89	33.57	100.79	76.58	56.20	38.20	42.81	2.39	2.62	11.58	
2000	20.6	27.3	20.6	54.08	39.39	28.25	19.54	22.57	72.16	51.83	36.87	25.44	30.71	1.60	1.76	11.58	
2005	0.0	0.0	0.0	50.41	34.40	23.47	16.02	17.18	70.90	46.65	30.72	20.23	21.82	1.11	1.20	11.28	44.45 @ 0F
2005	0.0	100.0	0.0	50.59	40.28	32.07	25.54	30.95	60.40	48.13	38.36	30.57	37.11	1.77	2.12	11.28	39.34 @ 25F
2005	100.0	0.0	100.0	80.32	65.17	50.01	34.86	36.82	114.69	90.77	66.85	42.92	45.40	2.45	2.58	11.28	34.93 @ 50F
2005	50.0	0.0	50.0	57.54	43.01	31.36	21.67	23.04	82.41	59.99	42.21	27.48	29.31	1.60	1.71	11.28	31.11 @ 75F
2005	0.0	50.0	0.0	46.82	34.03	24.89	18.31	20.93	62.26	44.12	31.55	22.77	26.12	1.35	1.53	11.28	45.91 @100F
2005	50.0	50.0	50.0	65.45	52.72	41.04	30.20	33.89	87.55	69.45	52.60	36.75	41.26	2.11	2.35	11.28	
2005	20.6	27.3	20.6	50.90	37.38	27.21	19.39	21.41	70.48	50.43	35.66	24.44	27.08	1.44	1.59	11.28	
2010	0.0	0.0	0.0	50.67	34.59	23.61	16.12	17.23	74.11	48.58	31.85	20.88	22.32	1.09	1.19	11.19	34.53 @ 0F
2010	0.0	100.0	0.0	50.83	40.51	32.28	25.73	31.16	62.00	49.42	39.38	31.39	38.01	1.75	2.10	11.19	29.71 @ 25F
2010	100.0	0.0	100.0	73.08	60.40	47.71	35.03	36.99	110.05	87.68	65.31	42.94	45.34	2.40	2.57	11.19	25.56 @ 50F
2010	50.0	0.0	50.0	54.78	41.17	30.43	21.66	22.98	82.05	59.55	41.96	27.59	29.28	1.58	1.70	11.19	21.99 @ 75F
2010	0.0	50.0	0.0	46.81	34.04	24.90	18.32	20.90	64.30	45.40	32.35	23.27	26.52	1.33	1.52	11.19	28.49 @100F
2010	50.0	50.0	50.0	61.96	50.45	40.00	30.38	34.08	86.03	68.55	52.35	37.16	41.68	2.07	2.33	11.19	
2010	20.6	27.3	20.6	49.74	36.61	26.83	19.38	21.36	71.45	50.93	35.97	24.73	27.24	1.42	1.58	11.19	
2020	0.0	0.0	0.0	50.70	34.63	23.65	16.16	17.26	75.04	49.08	32.10	20.99	22.43	1.11	1.21	11.17	32.79 @ 0F
2020	0.0	100.0	0.0	50.94	40.59	32.35	25.78	31.23	62.07	49.47	39.42	31.42	38.06	1.78	2.15	11.17	28.21 @ 25F
2020	100.0	0.0	100.0	70.95	59.00	47.05	35.10	37.06	106.65	85.14	63.63	42.12	44.47	2.46	2.63	11.17	24.27 @ 50F
2020	50.0	0.0	50.0	53.95	40.62	30.16	21.66	22.98	81.02	58.64	41.27	27.17	28.84	1.61	1.74	11.17	20.88 @ 75F
2020	0.0	50.0	0.0	46.78	34.03	24.90	18.33	20.90	64.64	45.53	32.38	23.25	26.49	1.35	1.56	11.17	27.05 @100F
2020	50.0	50.0	50.0	60.94	49.80	39.70	30.44	34.15	84.36	67.30	51.53	36.77	41.26	2.12	2.39	11.17	
2020	20.6	27.3	20.6	49.38	36.37	26.71	19.38	21.35	71.21	50.62	35.69	24.53	27.02	1.44	1.61	11.17	

TABLE 1.11: EXHAUST CO AT 19.6 MPH

TABLE 1.12

LOW ALTITUDE

EXHAUST CO EMISSION FACTORS (GRAMS/MILE) AT 35.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	27.30	20.39	15.41	11.80	23.88	33.60	26.48	21.17	17.16	35.37	0.70	0.82	7.69	100.67 @ 0F
1990	0.0	100.0	0.0	26.40	22.10	18.75	16.13	25.15	29.55	26.10	23.43	21.37	36.35	1.16	1.47	7.69	91.65 @ 25F
1990	100.0	0.0	100.0	147.45	95.55	58.39	29.31	25.61	208.82	131.10	81.25	46.93	37.67	1.60	1.78	7.69	83.58 @ 50F
1990	50.0	0.0	50.0	75.16	50.55	32.75	18.88	24.89	103.94	68.80	45.72	29.55	36.90	1.03	1.17	7.69	76.34 @ 75F
1990	0.0	50.0	0.0	27.31	21.36	16.96	13.69	24.64	32.43	26.68	22.34	19.05	35.93	0.87	1.05	7.69	123.96 @100F
1990	50.0	50.0	50.0	86.93	58.83	38.57	22.72	25.38	119.19	78.60	52.34	34.15	37.01	1.38	1.63	7.69	
1990	20.6	27.3	20.6	46.89	33.26	23.35	15.73	24.72	62.09	44.15	32.04	23.40	36.53	0.92	1.09	7.69	
1995	0.0	0.0	0.0	28.29	19.81	13.93	9.85	13.67	33.89	24.32	17.62	12.90	21.13	0.72	0.84	6.87	68.33 @ 0F
1995	0.0	100.0	0.0	28.50	22.87	18.42	14.91	19.58	31.63	26.05	21.64	18.14	26.16	1.21	1.52	6.87	61.49 @ 25F
1995	100.0	0.0	100.0	88.03	62.99	41.66	22.36	22.36	125.56	86.49	58.04	35.47	33.44	1.71	1.85	6.87	55.47 @ 50F
1995	50.0	0.0	50.0	50.98	36.32	24.61	14.72	17.06	70.07	48.99	33.86	22.24	26.42	1.09	1.21	6.87	50.15 @ 75F
1995	0.0	50.0	0.0	28.13	20.88	15.64	11.82	15.99	32.85	24.98	19.24	15.04	23.23	0.90	1.09	6.87	85.50 @100F
1995	50.0	50.0	50.0	58.27	42.93	30.04	18.64	20.97	78.59	56.27	39.84	26.81	29.80	1.46	1.68	6.87	
1995	20.6	27.3	20.6	37.43	27.10	19.19	12.89	16.31	48.45	35.00	25.33	18.03	24.66	0.96	1.13	6.87	
2000	0.0	0.0	0.0	26.31	18.01	12.34	8.47	9.94	36.49	24.75	16.85	11.53	14.87	0.67	0.73	6.42	41.11 @ 0F
2000	0.0	100.0	0.0	26.04	20.78	16.59	13.26	16.43	32.77	26.31	21.18	17.10	22.04	1.10	1.31	6.42	36.61 @ 25F
2000	100.0	0.0	100.0	53.66	41.13	29.53	18.43	19.19	82.59	61.60	43.84	27.83	28.35	1.54	1.60	6.42	32.69 @ 50F
2000	50.0	0.0	50.0	35.17	25.73	18.15	11.79	12.95	52.90	38.10	26.78	17.63	19.82	0.99	1.05	6.42	29.26 @ 75F
2000	0.0	50.0	0.0	24.89	18.16	13.34	9.87	11.94	33.58	24.39	17.90	13.28	17.21	0.83	0.94	6.42	48.09 @100F
2000	50.0	50.0	50.0	39.85	30.95	23.06	15.85	17.81	57.68	43.96	32.51	22.47	25.19	1.32	1.45	6.42	
2000	20.6	27.3	20.6	28.99	21.12	15.17	10.52	12.19	41.60	30.01	21.49	14.99	18.20	0.88	0.98	6.42	
2005	0.0	0.0	0.0	24.87	16.97	11.58	7.91	8.49	37.60	24.80	16.37	10.81	11.71	0.61	0.66	6.25	24.78 @ 0F
2005	0.0	100.0	0.0	24.92	19.84	15.79	12.57	15.24	32.31	25.74	20.52	16.35	19.87	0.98	1.17	6.25	21.93 @ 25F
2005	100.0	0.0	100.0	39.35	31.93	24.51	17.09	18.06	60.73	48.26	35.78	23.30	24.67	1.36	1.43	6.25	19.47 @ 50F
2005	50.0	0.0	50.0	28.38	21.21	15.47	10.69	11.38	43.83	32.03	22.67	14.91	15.95	0.89	0.95	6.25	17.34 @ 75F
2005	0.0	50.0	0.0	23.16	16.83	12.31	9.06	10.36	33.24	23.60	16.91	12.23	14.07	0.75	0.85	6.25	25.59 @100F
2005	50.0	50.0	50.0	32.14	25.88	20.15	14.83	16.65	46.52	37.00	28.15	19.83	22.27	1.17	1.30	6.25	
2005	20.6	27.3	20.6	25.15	18.47	13.45	9.59	10.60	37.58	26.97	19.15	13.20	14.66	0.80	0.88	6.25	
2010	0.0	0.0	0.0	24.28	16.58	11.32	7.73	8.26	38.32	25.14	16.50	10.83	11.57	0.61	0.66	6.20	19.25 @ 0F
2010	0.0	100.0	0.0	24.34	19.40	15.46	12.32	14.92	32.19	25.65	20.44	16.29	19.73	0.97	1.16	6.20	16.56 @ 25F
2010	100.0	0.0	100.0	34.95	28.88	22.82	16.75	17.69	57.06	45.53	33.99	22.45	23.71	1.33	1.42	6.20	14.25 @ 50F
2010	50.0	0.0	50.0	26.25	19.72	14.58	10.38	11.01	42.56	30.93	21.84	14.41	15.29	0.87	0.94	6.20	12.26 @ 75F
2010	0.0	50.0	0.0	22.44	16.32	11.94	8.79	10.02	33.34	23.56	16.80	12.10	13.79	0.74	0.84	6.20	15.88 @100F
2010	50.0	50.0	50.0	29.64	24.14	19.14	14.54	16.31	44.63	35.59	27.22	19.37	21.72	1.15	1.29	6.20	
2010	20.6	27.3	20.6	23.84	17.55	12.86	9.29	10.24	37.06	26.44	18.70	12.89	14.19	0.79	0.87	6.20	
2020	0.0	0.0	0.0	24.05	16.42	11.22	7.66	8.19	38.29	25.04	16.38	10.71	11.45	0.62	0.67	6.19	18.28 @ 0F
2020	0.0	100.0	0.0	24.16	19.25	15.34	12.23	14.81	31.67	25.24	20.12	16.03	19.42	0.99	1.19	6.19	15.73 @ 25F
2020	100.0	0.0	100.0	33.65	27.98	22.32	16.65	17.58	54.42	43.45	32.47	21.49	22.69	1.36	1.46	6.19	13.53 @ 50F
2020	50.0	0.0	50.0	25.59	19.26	14.30	10.27	10.90	41.34	29.92	21.06	13.87	14.72	0.89	0.96	6.19	11.64 @ 75F
2020	0.0	50.0	0.0	22.19	16.14	11.81	8.69	9.91	32.98	23.23	16.52	11.86	13.52	0.75	0.86	6.19	15.08 @100F
2020	50.0	50.0	50.0	28.91	23.62	18.83	14.44	16.19	43.05	34.34	26.29	18.76	21.06	1.17	1.32	6.19	
2020	20.6	27.3	20.6	23.42	17.25	12.67	9.19	10.13	36.34	25.83	18.21	12.52	13.79	0.80	0.89	6.19	

TABLE 1.12: EXHAUST CO AT 35.0 MPH

TABLE 1.13

LOW ALTITUDE

EXHAUST CO EMISSION FACTORS (GRAMS/MILE) AT 55.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	22.17	16.50	12.42	9.47	18.72	27.91	21.93	17.46	14.11	29.07	0.62	0.72	6.81	102.70 @ 0F
1990	0.0	100.0	0.0	21.78	18.14	15.30	13.09	20.13	24.84	21.83	19.48	17.68	29.81	1.03	1.30	6.81	93.50 @ 25F
1990	100.0	0.0	100.0	116.30	75.80	46.48	23.28	20.52	169.74	107.06	66.80	39.03	31.80	1.41	1.58	6.81	85.27 @ 50F
1990	50.0	0.0	50.0	59.96	40.50	26.29	15.12	19.74	85.19	56.59	37.78	24.56	30.73	0.91	1.04	6.81	77.88 @ 75F
1990	0.0	50.0	0.0	22.37	17.43	13.78	11.07	19.50	27.11	22.23	18.53	15.73	29.55	0.77	0.93	6.81	126.46 @100F
1990	50.0	50.0	50.0	69.04	46.97	30.89	18.19	20.32	97.29	64.44	43.14	28.35	30.81	1.22	1.44	6.81	
1990	20.6	27.3	20.6	37.75	26.83	18.84	12.66	19.58	51.23	36.50	26.53	19.40	30.22	0.82	0.96	6.81	
1995	0.0	0.0	0.0	22.38	15.68	11.03	7.80	10.75	27.27	19.65	14.28	10.49	17.43	0.63	0.74	6.08	69.71 @ 0F
1995	0.0	100.0	0.0	22.57	18.08	14.55	11.76	15.40	25.64	21.11	17.52	14.69	21.25	1.07	1.35	6.08	62.73 @ 25F
1995	100.0	0.0	100.0	65.96	47.36	31.57	17.32	17.34	99.32	68.48	46.40	29.15	27.58	1.52	1.63	6.08	56.59 @ 50F
1995	50.0	0.0	50.0	39.24	28.03	19.10	11.60	13.42	56.13	39.33	27.40	18.34	21.92	0.96	1.07	6.08	51.17 @ 75F
1995	0.0	50.0	0.0	22.41	16.64	12.45	9.41	12.66	26.68	20.33	15.69	12.28	19.13	0.79	0.96	6.08	87.23 @100F
1995	50.0	50.0	50.0	44.26	32.72	23.06	14.54	16.37	62.48	44.79	31.96	21.92	24.42	1.29	1.49	6.08	
1995	20.6	27.3	20.6	29.26	21.23	15.09	10.22	12.88	39.07	28.30	20.59	14.81	20.40	0.85	1.00	6.08	
2000	0.0	0.0	0.0	18.52	12.69	8.71	5.98	7.10	27.12	18.48	12.65	8.70	11.46	0.59	0.65	5.68	41.94 @ 0F
2000	0.0	100.0	0.0	18.26	14.57	11.63	9.30	11.55	24.60	19.75	15.91	12.86	16.68	0.98	1.16	5.68	37.35 @ 25F
2000	100.0	0.0	100.0	37.11	28.40	20.41	12.81	13.32	62.03	46.22	33.09	21.42	21.78	1.37	1.41	5.68	33.35 @ 50F
2000	50.0	0.0	50.0	24.68	18.05	12.75	8.32	9.17	39.84	28.75	20.33	13.58	15.37	0.88	0.93	5.68	29.85 @ 75F
2000	0.0	50.0	0.0	17.61	12.86	9.45	7.00	8.52	25.20	18.37	13.53	10.08	13.23	0.73	0.84	5.68	49.06 @100F
2000	50.0	50.0	50.0	27.69	21.48	16.02	11.05	12.43	43.31	32.99	24.50	17.14	19.23	1.17	1.29	5.68	
2000	20.6	27.3	20.6	20.44	14.90	10.71	7.45	8.68	31.30	22.64	16.29	11.46	14.06	0.78	0.87	5.68	
2005	0.0	0.0	0.0	16.12	11.00	7.51	5.13	5.52	26.13	17.27	11.43	7.57	8.23	0.54	0.59	5.53	25.28 @ 0F
2005	0.0	100.0	0.0	16.14	12.84	10.21	8.13	9.86	22.63	18.03	14.37	11.46	13.93	0.87	1.04	5.53	22.38 @ 25F
2005	100.0	0.0	100.0	25.32	20.55	15.78	11.01	11.64	42.17	33.63	25.08	16.54	17.52	1.20	1.27	5.53	19.86 @ 50F
2005	50.0	0.0	50.0	18.39	13.75	10.03	6.93	7.39	30.56	22.40	15.94	10.58	11.34	0.79	0.84	5.53	17.69 @ 75F
2005	0.0	50.0	0.0	15.06	10.94	8.00	5.89	6.74	23.25	16.54	11.87	8.60	9.92	0.66	0.75	5.53	26.11 @100F
2005	50.0	50.0	50.0	20.73	16.69	13.00	9.57	10.74	32.40	25.83	19.73	14.00	15.73	1.04	1.15	5.53	
2005	20.6	27.3	20.6	16.33	11.99	8.73	6.23	6.89	26.25	18.89	13.46	9.33	10.39	0.71	0.78	5.53	
2010	0.0	0.0	0.0	15.25	10.41	7.11	4.85	5.18	26.04	17.10	11.23	7.38	7.89	0.54	0.58	5.49	19.64 @ 0F
2010	0.0	100.0	0.0	15.27	12.17	9.70	7.73	9.36	21.95	17.49	13.94	11.11	13.46	0.86	1.03	5.49	16.90 @ 25F
2010	100.0	0.0	100.0	21.90	18.09	14.30	10.50	11.08	38.88	31.06	23.24	15.42	16.28	1.18	1.26	5.49	14.54 @ 50F
2010	50.0	0.0	50.0	16.48	12.39	9.15	6.51	6.91	29.00	21.11	14.93	9.89	10.49	0.77	0.83	5.49	12.51 @ 75F
2010	0.0	50.0	0.0	14.10	10.26	7.50	5.52	6.30	22.71	16.06	11.46	8.26	9.41	0.65	0.75	5.49	16.20 @100F
2010	50.0	50.0	50.0	18.58	15.13	12.00	9.11	10.22	30.41	24.27	18.59	13.26	14.87	1.02	1.14	5.49	
2010	20.6	27.3	20.6	14.98	11.02	8.08	5.84	6.43	25.25	18.04	12.78	8.82	9.71	0.69	0.77	5.49	
2020	0.0	0.0	0.0	14.93	10.19	6.96	4.76	5.08	25.69	16.80	10.99	7.18	7.68	0.54	0.60	5.48	18.65 @ 0F
2020	0.0	100.0	0.0	14.99	11.95	9.52	7.59	9.19	21.25	16.93	13.49	10.76	13.03	0.87	1.06	5.48	16.05 @ 25F
2020	100.0	0.0	100.0	20.89	17.37	13.85	10.33	10.91	36.51	29.14	21.78	14.42	15.22	1.21	1.29	5.48	13.80 @ 50F
2020	50.0	0.0	50.0	15.88	11.96	8.88	6.38	6.77	27.73	20.07	14.13	9.30	9.87	0.79	0.85	5.48	11.88 @ 75F
2020	0.0	50.0	0.0	13.77	10.02	7.33	5.39	6.15	22.12	15.59	11.08	7.96	9.07	0.66	0.76	5.48	15.39 @100F
2020	50.0	50.0	50.0	17.94	14.66	11.69	8.96	10.05	28.88	23.04	17.64	12.59	14.12	1.04	1.17	5.48	
2020	20.6	27.3	20.6	14.54	10.71	7.86	5.70	6.29	24.37	17.33	12.22	8.40	9.25	0.71	0.79	5.48	

TABLE 1.13: EXHAUST CO AT 55.0 MPH

TABLE 1.14

LOW ALTITUDE

EXHAUST CO EMISSION FACTORS (GRAMS/MILE) AT 65.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV						LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F		
1990	0.0	0.0	0.0	66.21	49.83	37.96	29.30	60.88	92.34	73.27	58.90	47.99	100.79	0.76	0.89	8.42	144.29 @ 0F	
1990	0.0	100.0	0.0	58.26	49.01	41.83	36.27	57.75	74.76	66.44	60.01	55.07	94.90	1.27	1.61	8.42	131.37 @ 25F	
1990	100.0	0.0	100.0	323.36	206.79	126.45	66.00	56.51	526.80	327.55	203.54	121.43	96.46	1.75	1.95	8.42	119.80 @ 50F	
1990	50.0	0.0	50.0	173.08	115.64	75.30	44.77	59.91	274.13	180.62	120.66	79.86	100.74	1.13	1.28	8.42	109.42 @ 75F	
1990	0.0	50.0	0.0	63.73	50.14	40.06	32.56	60.21	86.33	71.45	60.14	51.52	98.86	0.95	1.15	8.42	177.68 @100F	
1990	50.0	50.0	50.0	190.81	127.90	84.14	51.14	57.13	300.78	197.00	131.77	88.25	95.68	1.51	1.78	8.42		
1990	20.6	27.3	20.6	108.67	77.00	54.43	37.44	60.18	164.31	116.82	85.30	63.29	100.26	1.01	1.19	8.42		
1995	0.0	0.0	0.0	56.69	40.08	28.48	20.36	30.04	77.35	56.74	42.01	31.42	55.24	0.78	0.92	7.51	97.94 @ 0F	
1995	0.0	100.0	0.0	52.11	41.89	33.85	27.53	37.08	67.03	55.71	46.76	39.71	59.51	1.32	1.67	7.51	88.14 @ 25F	
1995	100.0	0.0	100.0	156.76	110.57	73.51	41.46	40.70	271.83	183.69	124.56	81.44	75.24	1.88	2.02	7.51	79.50 @ 50F	
1995	50.0	0.0	50.0	97.65	69.20	47.24	29.27	34.77	159.85	111.11	77.86	53.68	65.17	1.19	1.33	7.51	71.88 @ 75F	
1995	0.0	50.0	0.0	54.90	41.00	30.89	23.51	33.25	73.92	57.09	44.67	35.44	57.77	0.98	1.19	7.51	122.55 @100F	
1995	50.0	50.0	50.0	104.43	76.23	53.68	34.50	38.89	169.43	119.70	85.66	60.57	67.37	1.60	1.84	7.51		
1995	20.6	27.3	20.6	72.48	52.50	37.47	25.72	33.74	110.10	79.80	58.60	43.09	61.24	1.05	1.23	7.51		
2000	0.0	0.0	0.0	40.38	27.81	19.18	13.25	16.55	62.34	43.15	30.04	21.05	30.02	0.73	0.80	7.02	58.92 @ 0F	
2000	0.0	100.0	0.0	36.48	29.12	23.28	18.65	23.51	52.70	42.53	34.48	28.10	37.68	1.21	1.43	7.02	52.48 @ 25F	
2000	100.0	0.0	100.0	76.51	57.67	41.17	25.93	26.69	142.11	103.72	74.19	49.52	49.45	1.69	1.75	7.02	46.85 @ 50F	
2000	50.0	0.0	50.0	53.56	38.93	27.45	17.99	20.22	94.52	67.87	48.30	33.05	38.28	1.09	1.15	7.02	41.94 @ 75F	
2000	0.0	50.0	0.0	37.57	27.51	20.29	15.07	18.98	57.33	42.28	31.52	23.77	33.01	0.90	1.03	7.02	68.93 @100F	
2000	50.0	50.0	50.0	56.49	43.40	32.23	22.29	25.10	97.41	73.13	54.34	38.81	43.57	1.45	1.59	7.02		
2000	20.6	27.3	20.6	44.08	32.08	23.08	16.12	19.31	72.94	52.91	38.42	27.52	35.16	0.97	1.07	7.02		
2005	0.0	0.0	0.0	32.67	22.32	15.25	10.42	11.26	51.81	34.43	22.91	15.26	16.78	0.67	0.73	6.84	35.52 @ 0F	
2005	0.0	100.0	0.0	30.15	23.96	19.04	15.13	18.37	41.89	33.38	26.61	21.22	25.88	1.08	1.28	6.84	31.44 @ 25F	
2005	100.0	0.0	100.0	46.99	38.14	29.30	20.46	21.63	76.59	61.62	46.66	31.70	33.65	1.49	1.57	6.84	27.91 @ 50F	
2005	50.0	0.0	50.0	36.53	27.32	19.93	13.80	14.72	59.69	44.11	31.75	21.53	23.20	0.97	1.03	6.84	24.86 @ 75F	
2005	0.0	50.0	0.0	29.99	21.81	15.94	11.73	13.47	45.71	32.66	23.54	17.11	19.88	0.82	0.93	6.84	36.69 @100F	
2005	50.0	50.0	50.0	38.57	31.05	24.17	17.80	20.00	59.24	47.50	36.64	26.46	29.77	1.28	1.42	6.84		
2005	20.6	27.3	20.6	32.57	23.92	17.43	12.43	13.78	51.58	37.34	26.82	18.81	21.07	0.87	0.96	6.84		
2010	0.0	0.0	0.0	29.80	20.34	13.88	9.48	10.13	48.91	32.17	21.17	13.93	14.89	0.66	0.72	6.79	27.60 @ 0F	
2010	0.0	100.0	0.0	27.46	21.89	17.44	13.90	16.84	37.92	30.22	24.08	19.19	23.25	1.06	1.27	6.79	23.74 @ 25F	
2010	100.0	0.0	100.0	39.35	32.52	25.69	18.86	19.92	67.09	53.72	40.36	26.99	28.50	1.46	1.56	6.79	20.42 @ 50F	
2010	50.0	0.0	50.0	31.61	23.75	17.55	12.49	13.25	53.63	39.13	27.78	18.50	19.63	0.96	1.03	6.79	17.57 @ 75F	
2010	0.0	50.0	0.0	27.05	19.67	14.39	10.59	12.08	41.97	29.72	21.24	15.32	17.47	0.81	0.92	6.79	22.76 @100F	
2010	50.0	50.0	50.0	33.41	27.20	21.57	16.38	18.38	52.50	41.97	32.22	23.09	25.88	1.26	1.41	6.79		
2010	20.6	27.3	20.6	28.80	21.19	15.53	11.22	12.36	46.79	33.49	23.78	16.46	18.13	0.86	0.95	6.79		
2020	0.0	0.0	0.0	29.02	19.82	13.54	9.25	9.88	47.23	30.89	20.20	13.21	14.12	0.67	0.74	6.77	26.20 @ 0F	
2020	0.0	100.0	0.0	26.87	21.41	17.07	13.60	16.47	35.65	28.41	22.64	18.05	21.86	1.08	1.31	6.77	22.54 @ 25F	
2020	100.0	0.0	100.0	37.43	31.12	24.82	18.51	19.55	61.25	48.90	36.54	24.19	25.54	1.49	1.59	6.77	19.39 @ 50F	
2020	50.0	0.0	50.0	30.35	22.85	16.96	12.18	12.93	50.00	36.19	25.47	16.77	17.80	0.97	1.05	6.77	16.68 @ 75F	
2020	0.0	50.0	0.0	26.32	19.14	14.01	10.31	11.76	39.89	28.10	19.98	14.35	16.35	0.82	0.94	6.77	21.61 @100F	
2020	50.0	50.0	50.0	32.15	26.27	20.94	16.06	18.01	48.45	38.65	29.59	21.12	23.70	1.28	1.45	6.77		
2020	20.6	27.3	20.6	27.84	20.51	15.06	10.93	12.04	44.06	31.32	22.09	15.18	16.72	0.88	0.98	6.77		

TABLE 1.14: EXHAUST CO AT 65.0 MPH

TABLE 1.15

LOW ALTITUDE

EXHAUST NO<sub>x</sub> EMISSION FACTORS (GRAMS/MILE) AT 2.5 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV- 0-100F			-LDDT- 0-100F			-HDDV- 0-100F			----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0F	25F	50F	0F	25F	50F	0F	25F	50F	
1990	0.0	0.0	0.0	3.49	2.91	2.42	2.02	1.89	3.75	3.19	2.72	2.33	2.13	2.84	3.08	37.78							6.91 @ 0F
1990	0.0	100.0	0.0	4.93	4.09	3.41	2.85	2.47	5.42	4.60	3.93	3.37	2.88	2.78	3.61	37.78							6.42 @ 25F
1990	100.0	0.0	100.0	4.51	4.01	3.58	3.20	2.81	4.89	4.47	4.10	3.80	3.34	2.92	3.86	37.78							5.99 @ 50F
1990	50.0	0.0	50.0	4.07	3.52	3.05	2.66	2.40	4.44	3.94	3.52	3.16	2.83	2.88	3.43	37.78							5.59 @ 75F
1990	0.0	50.0	0.0	4.29	3.56	2.96	2.47	2.22	4.74	4.03	3.43	2.94	2.59	2.81	3.32	37.78							4.68 @100F
1990	50.0	50.0	50.0	4.72	4.05	3.49	3.03	2.64	5.15	4.53	4.01	3.58	3.11	2.85	3.73	37.78							
1990	20.6	27.3	20.6	4.16	3.52	2.98	2.53	2.28	4.58	3.96	3.44	3.01	2.68	2.84	3.35	37.78							
1995	0.0	0.0	0.0	3.46	2.88	2.40	2.00	2.08	3.70	3.13	2.65	2.24	2.27	2.91	3.08	25.43							5.68 @ 0F
1995	0.0	100.0	0.0	4.69	3.83	3.14	2.57	2.48	5.34	4.44	3.70	3.09	2.93	2.77	3.59	25.43							5.34 @ 25F
1995	100.0	0.0	100.0	4.20	3.77	3.37	3.03	2.91	4.87	4.41	3.99	3.63	3.44	2.90	3.83	25.43							5.04 @ 50F
1995	50.0	0.0	50.0	3.92	3.40	2.95	2.58	2.55	4.40	3.87	3.41	3.02	2.93	2.91	3.42	25.43							4.76 @ 75F
1995	0.0	50.0	0.0	4.17	3.43	2.83	2.34	2.33	4.65	3.89	3.27	2.74	2.67	2.85	3.31	25.43							4.18 @100F
1995	50.0	50.0	50.0	4.45	3.80	3.26	2.80	2.70	5.11	4.42	3.85	3.36	3.18	2.83	3.71	25.43							
1995	20.6	27.3	20.6	4.05	3.40	2.87	2.43	2.42	4.51	3.85	3.30	2.84	2.76	2.87	3.34	25.43							
2000	0.0	0.0	0.0	2.97	2.52	2.13	1.81	1.93	3.84	3.22	2.71	2.28	2.40	2.40	2.40	18.57							4.82 @ 0F
2000	0.0	100.0	0.0	3.93	3.24	2.68	2.22	2.20	5.35	4.37	3.58	2.93	2.88	2.30	2.83	18.57							4.59 @ 25F
2000	100.0	0.0	100.0	3.57	3.20	2.87	2.58	2.53	4.71	4.24	3.81	3.43	3.35	2.41	3.02	18.57							4.38 @ 50F
2000	50.0	0.0	50.0	3.35	2.93	2.56	2.24	2.28	4.36	3.81	3.33	2.91	2.93	2.40	2.68	18.57							4.17 @ 75F
2000	0.0	50.0	0.0	3.53	2.95	2.46	2.06	2.11	4.68	3.87	3.21	2.66	2.70	2.35	2.59	18.57							3.96 @100F
2000	50.0	50.0	50.0	3.75	3.22	2.78	2.40	2.36	5.03	4.30	3.69	3.18	3.12	2.35	2.92	18.57							
2000	20.6	27.3	20.6	3.44	2.93	2.50	2.13	2.18	4.51	3.81	3.23	2.74	2.78	2.37	2.62	18.57							
2005	0.0	0.0	0.0	2.69	2.31	1.98	1.70	1.82	3.73	3.15	2.66	2.25	2.41	1.98	1.99	13.83							4.21 @ 0F
2005	0.0	100.0	0.0	3.53	2.94	2.45	2.04	2.04	5.11	4.17	3.41	2.79	2.79	1.91	2.35	13.83							4.01 @ 25F
2005	100.0	0.0	100.0	3.29	2.95	2.65	2.38	2.35	4.40	3.95	3.55	3.19	3.15	2.01	2.52	13.83							3.83 @ 50F
2005	50.0	0.0	50.0	3.06	2.69	2.37	2.09	2.14	4.13	3.61	3.15	2.76	2.83	1.99	2.23	13.83							3.65 @ 75F
2005	0.0	50.0	0.0	3.19	2.69	2.27	1.91	1.98	4.49	3.72	3.08	2.56	2.64	1.94	2.15	13.83							3.67 @100F
2005	50.0	50.0	50.0	3.41	2.94	2.55	2.21	2.20	4.75	4.06	3.48	2.99	2.97	1.96	2.44	13.83							
2005	20.6	27.3	20.6	3.13	2.68	2.31	1.98	2.05	4.30	3.64	3.09	2.62	2.70	1.96	2.18	13.83							
2010	0.0	0.0	0.0	2.58	2.22	1.91	1.65	1.77	3.66	3.10	2.62	2.21	2.38	1.87	1.93	12.11							3.89 @ 0F
2010	0.0	100.0	0.0	3.37	2.82	2.36	1.98	1.98	5.01	4.09	3.34	2.73	2.73	1.81	2.28	12.11							3.71 @ 25F
2010	100.0	0.0	100.0	3.19	2.86	2.57	2.31	2.28	4.33	3.88	3.49	3.13	3.09	1.91	2.45	12.11							3.53 @ 50F
2010	50.0	0.0	50.0	2.95	2.60	2.29	2.02	2.07	4.05	3.54	3.10	2.71	2.77	1.89	2.16	12.11							3.36 @ 75F
2010	0.0	50.0	0.0	3.05	2.58	2.19	1.86	1.92	4.39	3.64	3.02	2.51	2.59	1.84	2.09	12.11							3.47 @100F
2010	50.0	50.0	50.0	3.28	2.84	2.47	2.14	2.13	4.67	3.99	3.41	2.93	2.91	1.86	2.37	12.11							
2010	20.6	27.3	20.6	3.00	2.59	2.23	1.92	1.98	4.21	3.56	3.02	2.57	2.65	1.86	2.11	12.11							
2020	0.0	0.0	0.0	2.54	2.19	1.89	1.63	1.75	3.56	3.02	2.56	2.17	2.33	1.90	1.97	11.39							3.59 @ 0F
2020	0.0	100.0	0.0	3.33	2.79	2.34	1.96	1.96	4.85	3.97	3.25	2.66	2.66	1.84	2.33	11.39							3.42 @ 25F
2020	100.0	0.0	100.0	3.16	2.83	2.54	2.28	2.26	4.15	3.73	3.34	3.00	2.97	1.94	2.50	11.39							3.26 @ 50F
2020	50.0	0.0	50.0	2.92	2.57	2.27	2.01	2.05	3.90	3.41	2.99	2.62	2.68	1.92	2.21	11.39							3.10 @ 75F
2020	0.0	50.0	0.0	3.01	2.55	2.16	1.84	1.90	4.26	3.54	2.94	2.44	2.53	1.87	2.13	11.39							3.20 @100F
2020	50.0	50.0	50.0	3.24	2.81	2.44	2.12	2.11	4.50	3.85	3.30	2.83	2.81	1.89	2.41	11.39							
2020	20.6	27.3	20.6	2.96	2.56	2.20	1.90	1.96	4.07	3.45	2.93	2.49	2.57	1.89	2.16	11.39							

TABLE 1.15: EXHAUST NO<sub>x</sub> AT 2.5 MPH

TABLE 1.16

LOW ALTITUDE

EXHAUST NO<sub>x</sub> EMISSION FACTORS (GRAMS/MILE) AT 5.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	-HDGV-
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	2.97	2.47	2.07	1.73	1.59	3.22	2.74	2.35	2.02	1.83	2.55	2.77	33.95	7.09 @ 0F
1990	0.0	100.0	0.0	4.19	3.49	2.92	2.45	2.09	4.66	3.98	3.41	2.94	2.48	2.49	3.25	33.95	6.59 @ 25F
1990	100.0	0.0	100.0	3.85	3.42	3.04	2.72	2.35	4.18	3.83	3.53	3.28	2.85	2.63	3.47	33.95	6.14 @ 50F
1990	50.0	0.0	50.0	3.46	2.99	2.60	2.26	2.01	3.80	3.38	3.03	2.73	2.42	2.59	3.08	33.95	5.74 @ 75F
1990	0.0	50.0	0.0	3.64	3.03	2.53	2.12	1.87	4.07	3.47	2.97	2.56	2.22	2.52	2.98	33.95	4.80 @100F
1990	50.0	50.0	50.0	4.02	3.45	2.98	2.59	2.22	4.42	3.90	3.47	3.11	2.66	2.56	3.36	33.95	
1990	20.6	27.3	20.6	3.54	2.99	2.54	2.16	1.92	3.93	3.41	2.97	2.61	2.29	2.55	3.01	33.95	
1995	0.0	0.0	0.0	2.82	2.35	1.96	1.64	1.69	3.04	2.57	2.18	1.85	1.86	2.62	2.77	22.86	5.83 @ 0F
1995	0.0	100.0	0.0	3.83	3.14	2.57	2.11	2.03	4.40	3.66	3.06	2.56	2.41	2.49	3.23	22.86	5.48 @ 25F
1995	100.0	0.0	100.0	3.44	3.08	2.76	2.47	2.37	4.00	3.62	3.29	2.99	2.82	2.61	3.44	22.86	5.17 @ 50F
1995	50.0	0.0	50.0	3.20	2.78	2.42	2.11	2.08	3.61	3.18	2.81	2.49	2.41	2.61	3.07	22.86	4.88 @ 75F
1995	0.0	50.0	0.0	3.41	2.81	2.32	1.92	1.90	3.83	3.21	2.69	2.27	2.19	2.56	2.97	22.86	4.29 @100F
1995	50.0	50.0	50.0	3.64	3.11	2.67	2.29	2.20	4.20	3.64	3.17	2.78	2.62	2.55	3.34	22.86	
1995	20.6	27.3	20.6	3.31	2.78	2.35	1.99	1.97	3.71	3.17	2.72	2.34	2.27	2.58	3.00	22.86	
2000	0.0	0.0	0.0	2.41	2.04	1.73	1.47	1.56	3.11	2.61	2.20	1.85	1.95	2.16	2.16	16.69	4.94 @ 0F
2000	0.0	100.0	0.0	3.18	2.63	2.17	1.80	1.78	4.34	3.55	2.91	2.38	2.34	2.06	2.54	16.69	4.71 @ 25F
2000	100.0	0.0	100.0	2.89	2.59	2.33	2.09	2.04	3.82	3.44	3.09	2.79	2.71	2.17	2.71	16.69	4.49 @ 50F
2000	50.0	0.0	50.0	2.71	2.37	2.08	1.82	1.84	3.54	3.09	2.70	2.37	2.38	2.16	2.41	16.69	4.28 @ 75F
2000	0.0	50.0	0.0	2.86	2.39	2.00	1.67	1.71	3.80	3.14	2.60	2.16	2.19	2.11	2.33	16.69	4.06 @100F
2000	50.0	50.0	50.0	3.04	2.61	2.25	1.94	1.91	4.08	3.49	3.00	2.59	2.53	2.12	2.63	16.69	
2000	20.6	27.3	20.6	2.79	2.37	2.02	1.73	1.76	3.66	3.09	2.62	2.23	2.25	2.13	2.36	16.69	
2005	0.0	0.0	0.0	2.17	1.86	1.60	1.37	1.47	3.01	2.54	2.15	1.82	1.95	1.78	1.79	12.43	4.32 @ 0F
2005	0.0	100.0	0.0	2.84	2.37	1.98	1.65	1.65	4.12	3.37	2.75	2.25	2.25	1.72	2.11	12.43	4.12 @ 25F
2005	100.0	0.0	100.0	2.65	2.38	2.14	1.92	1.90	3.55	3.19	2.87	2.57	2.55	1.81	2.27	12.43	3.92 @ 50F
2005	50.0	0.0	50.0	2.47	2.17	1.91	1.68	1.73	3.33	2.91	2.55	2.23	2.28	1.79	2.00	12.43	3.74 @ 75F
2005	0.0	50.0	0.0	2.57	2.17	1.83	1.54	1.60	3.62	3.00	2.49	2.07	2.13	1.75	1.93	12.43	3.76 @100F
2005	50.0	50.0	50.0	2.75	2.38	2.06	1.78	1.77	3.84	3.28	2.81	2.41	2.40	1.76	2.19	12.43	
2005	20.6	27.3	20.6	2.52	2.17	1.86	1.60	1.65	3.47	2.94	2.49	2.12	2.18	1.76	1.96	12.43	
2010	0.0	0.0	0.0	2.08	1.79	1.54	1.33	1.43	2.95	2.50	2.11	1.79	1.92	1.68	1.74	10.89	4.00 @ 0F
2010	0.0	100.0	0.0	2.72	2.28	1.91	1.60	1.60	4.04	3.30	2.70	2.20	2.20	1.63	2.05	10.89	3.80 @ 25F
2010	100.0	0.0	100.0	2.57	2.31	2.07	1.86	1.84	3.49	3.13	2.81	2.53	2.50	1.72	2.20	10.89	3.62 @ 50F
2010	50.0	0.0	50.0	2.38	2.10	1.85	1.63	1.67	3.27	2.86	2.50	2.19	2.24	1.70	1.95	10.89	3.45 @ 75F
2010	0.0	50.0	0.0	2.46	2.08	1.77	1.50	1.55	3.54	2.94	2.44	2.02	2.09	1.65	1.88	10.89	3.56 @100F
2010	50.0	50.0	50.0	2.65	2.29	1.99	1.73	1.72	3.77	3.22	2.76	2.36	2.35	1.67	2.13	10.89	
2010	20.6	27.3	20.6	2.42	2.09	1.80	1.55	1.60	3.39	2.88	2.44	2.07	2.14	1.67	1.90	10.89	
2020	0.0	0.0	0.0	2.05	1.77	1.53	1.32	1.41	2.87	2.43	2.06	1.75	1.88	1.71	1.77	10.24	3.69 @ 0F
2020	0.0	100.0	0.0	2.68	2.25	1.89	1.58	1.58	3.91	3.20	2.62	2.15	2.15	1.65	2.09	10.24	3.51 @ 25F
2020	100.0	0.0	100.0	2.55	2.29	2.05	1.84	1.82	3.35	3.01	2.70	2.42	2.39	1.75	2.24	10.24	3.34 @ 50F
2020	50.0	0.0	50.0	2.36	2.08	1.83	1.62	1.66	3.15	2.76	2.41	2.11	2.16	1.73	1.99	10.24	3.18 @ 75F
2020	0.0	50.0	0.0	2.42	2.06	1.75	1.48	1.53	3.43	2.85	2.37	1.97	2.04	1.68	1.92	10.24	3.29 @100F
2020	50.0	50.0	50.0	2.62	2.27	1.97	1.71	1.70	3.63	3.10	2.66	2.28	2.27	1.70	2.17	10.24	
2020	20.6	27.3	20.6	2.39	2.06	1.78	1.54	1.59	3.28	2.79	2.37	2.01	2.08	1.70	1.94	10.24	

TABLE 1.16: EXHAUST NO<sub>x</sub> AT 5.0 MPH

TABLE 1.17

LOW ALTITUDE

EXHAUST NO<sub>x</sub> EMISSION FACTORS (GRAMS/MILE) AT 10.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	2.65	2.22	1.85	1.55	1.42	2.93	2.51	2.16	1.86	1.67	2.12	2.30	28.17	7.45 @ 0F
1990	0.0	100.0	0.0	3.75	3.13	2.62	2.20	1.88	4.27	3.66	3.15	2.72	2.28	2.07	2.69	28.17	6.93 @ 25F
1990	100.0	0.0	100.0	3.44	3.06	2.73	2.44	2.10	3.80	3.49	3.23	3.02	2.60	2.18	2.88	28.17	6.45 @ 50F
1990	50.0	0.0	50.0	3.09	2.68	2.33	2.03	1.80	3.46	3.09	2.78	2.52	2.21	2.14	2.56	28.17	6.03 @ 75F
1990	0.0	50.0	0.0	3.26	2.72	2.27	1.91	1.68	3.72	3.18	2.74	2.37	2.04	2.09	2.47	28.17	5.04 @100F
1990	50.0	50.0	50.0	3.60	3.10	2.67	2.32	1.99	4.03	3.58	3.19	2.87	2.44	2.13	2.79	28.17	
1990	20.6	27.3	20.6	3.17	2.68	2.28	1.94	1.72	3.58	3.12	2.73	2.41	2.10	2.12	2.50	28.17	
1995	0.0	0.0	0.0	2.50	2.08	1.74	1.45	1.49	2.71	2.30	1.95	1.65	1.66	2.17	2.30	18.96	6.13 @ 0F
1995	0.0	100.0	0.0	3.39	2.78	2.28	1.87	1.79	3.93	3.28	2.74	2.30	2.15	2.06	2.68	18.96	5.76 @ 25F
1995	100.0	0.0	100.0	3.04	2.72	2.44	2.19	2.09	3.56	3.22	2.93	2.67	2.52	2.16	2.85	18.96	5.43 @ 50F
1995	50.0	0.0	50.0	2.83	2.46	2.14	1.86	1.84	3.22	2.84	2.51	2.23	2.14	2.17	2.55	18.96	5.13 @ 75F
1995	0.0	50.0	0.0	3.02	2.49	2.05	1.70	1.68	3.41	2.87	2.41	2.03	1.96	2.12	2.47	18.96	4.51 @100F
1995	50.0	50.0	50.0	3.22	2.75	2.36	2.03	1.94	3.74	3.25	2.84	2.49	2.33	2.11	2.77	18.96	
1995	20.6	27.3	20.6	2.92	2.46	2.08	1.76	1.74	3.31	2.83	2.43	2.10	2.02	2.14	2.49	18.96	
2000	0.0	0.0	0.0	2.12	1.80	1.52	1.29	1.37	2.75	2.31	1.94	1.64	1.72	1.79	1.79	13.85	5.19 @ 0F
2000	0.0	100.0	0.0	2.80	2.32	1.91	1.58	1.57	3.83	3.14	2.57	2.11	2.07	1.71	2.11	13.85	4.95 @ 25F
2000	100.0	0.0	100.0	2.55	2.29	2.05	1.84	1.80	3.38	3.04	2.74	2.47	2.40	1.80	2.25	13.85	4.72 @ 50F
2000	50.0	0.0	50.0	2.39	2.09	1.83	1.60	1.63	3.12	2.73	2.39	2.09	2.10	1.79	2.00	13.85	4.50 @ 75F
2000	0.0	50.0	0.0	2.52	2.10	1.76	1.47	1.50	3.36	2.78	2.30	1.91	1.93	1.75	1.93	13.85	4.27 @100F
2000	50.0	50.0	50.0	2.68	2.30	1.98	1.71	1.68	3.61	3.09	2.65	2.29	2.23	1.75	2.18	13.85	
2000	20.6	27.3	20.6	2.46	2.09	1.78	1.52	1.55	3.23	2.73	2.32	1.97	1.99	1.77	1.95	13.85	
2005	0.0	0.0	0.0	1.91	1.64	1.41	1.21	1.29	2.65	2.24	1.89	1.60	1.72	1.47	1.48	10.31	4.54 @ 0F
2005	0.0	100.0	0.0	2.50	2.09	1.74	1.45	1.45	3.63	2.96	2.42	1.98	1.98	1.42	1.75	10.31	4.32 @ 25F
2005	100.0	0.0	100.0	2.34	2.10	1.88	1.69	1.67	3.13	2.81	2.52	2.27	2.24	1.50	1.88	10.31	4.12 @ 50F
2005	50.0	0.0	50.0	2.18	1.91	1.68	1.48	1.52	2.93	2.56	2.24	1.96	2.01	1.49	1.66	10.31	3.93 @ 75F
2005	0.0	50.0	0.0	2.26	1.91	1.61	1.36	1.40	3.19	2.64	2.19	1.82	1.88	1.45	1.61	10.31	3.95 @100F
2005	50.0	50.0	50.0	2.42	2.09	1.81	1.57	1.56	3.38	2.89	2.47	2.12	2.11	1.46	1.82	10.31	
2005	20.6	27.3	20.6	2.22	1.91	1.64	1.41	1.45	3.05	2.59	2.19	1.86	1.92	1.46	1.62	10.31	
2010	0.0	0.0	0.0	1.83	1.58	1.36	1.17	1.26	2.60	2.20	1.86	1.57	1.69	1.39	1.44	9.03	4.20 @ 0F
2010	0.0	100.0	0.0	2.40	2.01	1.68	1.41	1.41	3.56	2.90	2.37	1.94	1.94	1.35	1.70	9.03	4.00 @ 25F
2010	100.0	0.0	100.0	2.27	2.03	1.82	1.64	1.62	3.08	2.76	2.48	2.22	2.20	1.43	1.83	9.03	3.80 @ 50F
2010	50.0	0.0	50.0	2.10	1.85	1.63	1.44	1.47	2.88	2.51	2.20	1.92	1.97	1.41	1.61	9.03	3.62 @ 75F
2010	0.0	50.0	0.0	2.16	1.83	1.55	1.32	1.36	3.12	2.59	2.15	1.78	1.84	1.37	1.56	9.03	3.74 @100F
2010	50.0	50.0	50.0	2.33	2.02	1.75	1.52	1.51	3.32	2.83	2.43	2.08	2.07	1.39	1.76	9.03	
2010	20.6	27.3	20.6	2.13	1.84	1.58	1.37	1.41	2.99	2.53	2.15	1.83	1.88	1.39	1.58	9.03	
2020	0.0	0.0	0.0	1.81	1.56	1.34	1.16	1.25	2.53	2.14	1.82	1.54	1.66	1.42	1.47	8.49	3.87 @ 0F
2020	0.0	100.0	0.0	2.36	1.98	1.66	1.39	1.39	3.44	2.82	2.31	1.89	1.89	1.37	1.74	8.49	3.69 @ 25F
2020	100.0	0.0	100.0	2.24	2.01	1.81	1.62	1.60	2.95	2.65	2.38	2.13	2.11	1.45	1.86	8.49	3.51 @ 50F
2020	50.0	0.0	50.0	2.07	1.83	1.61	1.42	1.46	2.77	2.43	2.12	1.86	1.91	1.43	1.65	8.49	3.34 @ 75F
2020	0.0	50.0	0.0	2.13	1.81	1.54	1.30	1.35	3.02	2.51	2.09	1.74	1.80	1.40	1.59	8.49	3.45 @100F
2020	50.0	50.0	50.0	2.30	2.00	1.73	1.51	1.50	3.20	2.73	2.34	2.01	2.00	1.41	1.80	8.49	
2020	20.6	27.3	20.6	2.10	1.82	1.57	1.35	1.39	2.89	2.45	2.08	1.77	1.83	1.41	1.61	8.49	

TABLE 1.17: EXHAUST NO<sub>x</sub> AT 10.0 MPH

TABLE 1.18

LOW ALTITUDE

EXHAUST NO<sub>x</sub> EMISSION FACTORS (GRAMS/MILE) AT 19.6 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	2.49	2.08	1.75	1.47	1.34	2.89	2.49	2.15	1.86	1.66	1.63	1.77	21.74	8.15 @ 0F
1990	0.0	100.0	0.0	3.52	2.94	2.47	2.08	1.77	4.21	3.63	3.14	2.74	2.27	1.60	2.08	21.74	7.57 @ 25F
1990	100.0	0.0	100.0	3.21	2.87	2.57	2.31	1.99	3.69	3.42	3.19	3.00	2.57	1.68	2.22	21.74	7.05 @ 50F
1990	50.0	0.0	50.0	2.89	2.51	2.19	1.92	1.70	3.38	3.04	2.75	2.51	2.19	1.65	1.97	21.74	6.59 @ 75F
1990	0.0	50.0	0.0	3.06	2.56	2.14	1.80	1.59	3.66	3.15	2.73	2.38	2.03	1.62	1.91	21.74	5.51 @100F
1990	50.0	50.0	50.0	3.37	2.90	2.52	2.19	1.88	3.95	3.53	3.17	2.87	2.42	1.64	2.15	21.74	
1990	20.6	27.3	20.6	2.97	2.52	2.15	1.84	1.63	3.52	3.08	2.72	2.41	2.08	1.63	1.93	21.74	
1995	0.0	0.0	0.0	2.34	1.95	1.63	1.36	1.40	2.58	2.19	1.86	1.58	1.58	1.68	1.77	14.64	6.69 @ 0F
1995	0.0	100.0	0.0	3.17	2.60	2.13	1.75	1.68	3.74	3.13	2.62	2.21	2.05	1.59	2.07	14.64	6.30 @ 25F
1995	100.0	0.0	100.0	2.84	2.55	2.29	2.05	1.96	3.37	3.06	2.79	2.55	2.39	1.67	2.20	14.64	5.93 @ 50F
1995	50.0	0.0	50.0	2.65	2.30	2.00	1.75	1.72	3.05	2.69	2.39	2.13	2.04	1.67	1.97	14.64	5.60 @ 75F
1995	0.0	50.0	0.0	2.82	2.33	1.92	1.59	1.58	3.25	2.73	2.31	1.95	1.87	1.64	1.90	14.64	4.93 @100F
1995	50.0	50.0	50.0	3.01	2.57	2.21	1.90	1.82	3.55	3.09	2.71	2.38	2.22	1.63	2.14	14.64	
1995	20.6	27.3	20.6	2.73	2.30	1.95	1.65	1.63	3.14	2.70	2.32	2.01	1.93	1.65	1.92	14.64	
2000	0.0	0.0	0.0	1.98	1.68	1.42	1.21	1.28	2.58	2.17	1.83	1.54	1.62	1.38	1.38	10.69	5.68 @ 0F
2000	0.0	100.0	0.0	2.62	2.16	1.79	1.48	1.46	3.60	2.95	2.42	1.99	1.95	1.32	1.63	10.69	5.41 @ 25F
2000	100.0	0.0	100.0	2.38	2.13	1.91	1.72	1.68	3.17	2.85	2.57	2.32	2.25	1.39	1.74	10.69	5.15 @ 50F
2000	50.0	0.0	50.0	2.23	1.95	1.71	1.50	1.52	2.93	2.56	2.24	1.97	1.97	1.38	1.54	10.69	4.92 @ 75F
2000	0.0	50.0	0.0	2.35	1.97	1.64	1.37	1.40	3.15	2.61	2.17	1.80	1.82	1.35	1.49	10.69	4.66 @100F
2000	50.0	50.0	50.0	2.50	2.15	1.85	1.60	1.57	3.38	2.90	2.50	2.16	2.10	1.36	1.68	10.69	
2000	20.6	27.3	20.6	2.29	1.95	1.66	1.42	1.45	3.03	2.57	2.18	1.86	1.87	1.37	1.51	10.69	
2005	0.0	0.0	0.0	1.79	1.53	1.31	1.13	1.21	2.47	2.09	1.77	1.49	1.60	1.14	1.14	7.96	4.96 @ 0F
2005	0.0	100.0	0.0	2.34	1.95	1.62	1.35	1.35	3.39	2.77	2.26	1.85	1.85	1.10	1.35	7.96	4.72 @ 25F
2005	100.0	0.0	100.0	2.18	1.96	1.76	1.58	1.56	2.92	2.62	2.36	2.12	2.09	1.16	1.45	7.96	4.51 @ 50F
2005	50.0	0.0	50.0	2.03	1.79	1.57	1.38	1.42	2.74	2.39	2.09	1.83	1.88	1.15	1.28	7.96	4.30 @ 75F
2005	0.0	50.0	0.0	2.11	1.78	1.50	1.27	1.31	2.97	2.47	2.05	1.70	1.75	1.12	1.24	7.96	4.32 @100F
2005	50.0	50.0	50.0	2.26	1.95	1.69	1.47	1.46	3.15	2.69	2.31	1.98	1.97	1.13	1.40	7.96	
2005	20.6	27.3	20.6	2.07	1.78	1.53	1.32	1.36	2.85	2.41	2.05	1.74	1.79	1.13	1.25	7.96	
2010	0.0	0.0	0.0	1.71	1.47	1.27	1.09	1.17	2.43	2.05	1.74	1.47	1.58	1.08	1.11	6.97	4.59 @ 0F
2010	0.0	100.0	0.0	2.24	1.87	1.57	1.31	1.31	3.32	2.71	2.22	1.81	1.81	1.04	1.31	6.97	4.37 @ 25F
2010	100.0	0.0	100.0	2.11	1.90	1.70	1.53	1.51	2.87	2.58	2.31	2.08	2.05	1.10	1.41	6.97	4.16 @ 50F
2010	50.0	0.0	50.0	1.96	1.73	1.52	1.34	1.37	2.69	2.35	2.05	1.80	1.84	1.09	1.25	6.97	3.96 @ 75F
2010	0.0	50.0	0.0	2.02	1.71	1.45	1.23	1.27	2.91	2.41	2.00	1.66	1.72	1.06	1.20	6.97	4.09 @100F
2010	50.0	50.0	50.0	2.17	1.88	1.63	1.42	1.41	3.09	2.64	2.26	1.94	1.93	1.07	1.36	6.97	
2010	20.6	27.3	20.6	1.99	1.71	1.48	1.27	1.32	2.79	2.36	2.01	1.70	1.76	1.07	1.22	6.97	
2020	0.0	0.0	0.0	1.69	1.45	1.25	1.08	1.16	2.36	2.00	1.70	1.44	1.55	1.10	1.13	6.56	4.23 @ 0F
2020	0.0	100.0	0.0	2.21	1.85	1.55	1.30	1.30	3.21	2.63	2.15	1.76	1.76	1.06	1.34	6.56	4.03 @ 25F
2020	100.0	0.0	100.0	2.09	1.88	1.69	1.51	1.50	2.75	2.47	2.22	1.99	1.97	1.12	1.44	6.56	3.84 @ 50F
2020	50.0	0.0	50.0	1.93	1.71	1.51	1.33	1.36	2.59	2.26	1.98	1.74	1.78	1.11	1.27	6.56	3.65 @ 75F
2020	0.0	50.0	0.0	1.99	1.69	1.43	1.22	1.26	2.82	2.35	1.95	1.62	1.68	1.08	1.23	6.56	3.77 @100F
2020	50.0	50.0	50.0	2.15	1.86	1.62	1.41	1.40	2.98	2.55	2.19	1.88	1.87	1.09	1.39	6.56	
2020	20.6	27.3	20.6	1.96	1.69	1.46	1.26	1.30	2.70	2.29	1.95	1.65	1.71	1.09	1.24	6.56	

TABLE 1.18: EXHAUST NO<sub>x</sub> AT 19.6 MPH

TABLE 1.19

LOW ALTITUDE

EXHAUST NO<sub>x</sub> EMISSION FACTORS (GRAMS/MILE) AT 35.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV- 0-100F			-LDDT- 0-100F			-HDDV- 0-100F			----HDGV----	
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0F	25F	50F	0F	25F	50F	0F	25F	50F		
1990	0.0	0.0	0.0	2.62	2.19	1.84	1.55	1.42	3.25	2.81	2.43	2.12	1.88	1.42	1.54	18.86								9.25 @ 0F
1990	0.0	100.0	0.0	3.69	3.09	2.59	2.18	1.87	4.72	4.07	3.54	3.10	2.57	1.39	1.80	18.86								8.60 @ 25F
1990	100.0	0.0	100.0	3.35	2.99	2.69	2.42	2.11	4.10	3.81	3.57	3.37	2.89	1.46	1.93	18.86								8.01 @ 50F
1990	50.0	0.0	50.0	3.03	2.64	2.31	2.03	1.81	3.78	3.41	3.10	2.84	2.47	1.44	1.71	18.86								7.48 @ 75F
1990	0.0	50.0	0.0	3.22	2.69	2.26	1.90	1.68	4.12	3.56	3.09	2.69	2.30	1.40	1.66	18.86								6.26 @100F
1990	50.0	50.0	50.0	3.52	3.04	2.64	2.30	1.99	4.41	3.94	3.56	3.23	2.73	1.42	1.86	18.86								
1990	20.6	27.3	20.6	3.12	2.65	2.26	1.94	1.72	3.95	3.47	3.07	2.73	2.36	1.42	1.67	18.86								
1995	0.0	0.0	0.0	2.48	2.07	1.73	1.45	1.49	2.79	2.37	2.02	1.72	1.71	1.46	1.54	12.69								7.60 @ 0F
1995	0.0	100.0	0.0	3.37	2.76	2.26	1.86	1.79	4.03	3.38	2.84	2.40	2.23	1.38	1.79	12.69								7.15 @ 25F
1995	100.0	0.0	100.0	3.01	2.70	2.42	2.18	2.09	3.62	3.29	3.01	2.76	2.58	1.45	1.91	12.69								6.74 @ 50F
1995	50.0	0.0	50.0	2.81	2.44	2.13	1.86	1.83	3.29	2.91	2.59	2.31	2.20	1.45	1.71	12.69								6.36 @ 75F
1995	0.0	50.0	0.0	3.00	2.47	2.05	1.69	1.68	3.51	2.96	2.51	2.12	2.03	1.42	1.65	12.69								5.60 @100F
1995	50.0	50.0	50.0	3.19	2.73	2.34	2.02	1.94	3.83	3.34	2.93	2.58	2.40	1.41	1.85	12.69								
1995	20.6	27.3	20.6	2.91	2.45	2.07	1.75	1.74	3.39	2.92	2.52	2.18	2.09	1.43	1.67	12.69								
2000	0.0	0.0	0.0	2.10	1.78	1.51	1.28	1.36	2.68	2.26	1.90	1.60	1.68	1.20	1.20	9.27								6.45 @ 0F
2000	0.0	100.0	0.0	2.77	2.29	1.89	1.57	1.55	3.75	3.07	2.53	2.08	2.03	1.15	1.41	9.27								6.14 @ 25F
2000	100.0	0.0	100.0	2.52	2.26	2.03	1.82	1.78	3.30	2.97	2.68	2.42	2.35	1.20	1.51	9.27								5.86 @ 50F
2000	50.0	0.0	50.0	2.37	2.07	1.81	1.59	1.61	3.05	2.67	2.34	2.06	2.06	1.20	1.34	9.27								5.59 @ 75F
2000	0.0	50.0	0.0	2.49	2.08	1.74	1.46	1.49	3.28	2.72	2.26	1.88	1.89	1.17	1.29	9.27								5.30 @100F
2000	50.0	50.0	50.0	2.65	2.28	1.96	1.70	1.67	3.52	3.02	2.60	2.25	2.19	1.17	1.46	9.27								
2000	20.6	27.3	20.6	2.43	2.07	1.76	1.51	1.54	3.16	2.68	2.28	1.94	1.95	1.18	1.31	9.27								
2005	0.0	0.0	0.0	1.90	1.63	1.39	1.20	1.28	2.52	2.13	1.79	1.52	1.63	0.99	0.99	6.91								5.63 @ 0F
2005	0.0	100.0	0.0	2.48	2.07	1.73	1.44	1.44	3.44	2.81	2.30	1.88	1.88	0.95	1.17	6.91								5.37 @ 25F
2005	100.0	0.0	100.0	2.32	2.08	1.87	1.67	1.66	2.97	2.67	2.39	2.15	2.13	1.00	1.26	6.91								5.12 @ 50F
2005	50.0	0.0	50.0	2.16	1.90	1.67	1.47	1.51	2.79	2.43	2.13	1.86	1.91	0.99	1.11	6.91								4.88 @ 75F
2005	0.0	50.0	0.0	2.24	1.89	1.60	1.35	1.39	3.03	2.51	2.08	1.73	1.78	0.97	1.08	6.91								4.91 @100F
2005	50.0	50.0	50.0	2.40	2.08	1.80	1.56	1.55	3.20	2.74	2.35	2.02	2.01	0.98	1.22	6.91								
2005	20.6	27.3	20.6	2.20	1.89	1.63	1.40	1.44	2.90	2.45	2.08	1.77	1.82	0.98	1.09	6.91								
2010	0.0	0.0	0.0	1.82	1.56	1.35	1.16	1.25	2.45	2.07	1.75	1.48	1.59	0.93	0.96	6.05								5.21 @ 0F
2010	0.0	100.0	0.0	2.38	1.99	1.66	1.39	1.39	3.35	2.74	2.24	1.83	1.83	0.90	1.14	6.05								4.96 @ 25F
2010	100.0	0.0	100.0	2.25	2.02	1.81	1.62	1.61	2.90	2.61	2.34	2.10	2.07	0.96	1.22	6.05								4.72 @ 50F
2010	50.0	0.0	50.0	2.08	1.83	1.62	1.43	1.46	2.72	2.37	2.07	1.82	1.86	0.94	1.08	6.05								4.49 @ 75F
2010	0.0	50.0	0.0	2.15	1.82	1.54	1.31	1.35	2.94	2.44	2.02	1.68	1.74	0.92	1.04	6.05								4.64 @100F
2010	50.0	50.0	50.0	2.31	2.00	1.74	1.51	1.50	3.13	2.67	2.29	1.96	1.95	0.93	1.18	6.05								
2010	20.6	27.3	20.6	2.11	1.82	1.57	1.36	1.40	2.82	2.39	2.03	1.72	1.77	0.93	1.05	6.05								
2020	0.0	0.0	0.0	1.79	1.54	1.33	1.15	1.24	2.37	2.01	1.71	1.45	1.55	0.95	0.99	5.69								4.81 @ 0F
2020	0.0	100.0	0.0	2.34	1.96	1.65	1.38	1.38	3.23	2.65	2.17	1.77	1.77	0.92	1.16	5.69								4.58 @ 25F
2020	100.0	0.0	100.0	2.22	2.00	1.79	1.61	1.59	2.77	2.49	2.23	2.00	1.98	0.97	1.25	5.69								4.36 @ 50F
2020	50.0	0.0	50.0	2.06	1.81	1.60	1.41	1.45	2.61	2.28	1.99	1.75	1.79	0.96	1.10	5.69								4.15 @ 75F
2020	0.0	50.0	0.0	2.12	1.80	1.52	1.29	1.34	2.84	2.36	1.96	1.63	1.69	0.94	1.07	5.69								4.28 @100F
2020	50.0	50.0	50.0	2.28	1.98	1.72	1.50	1.49	3.00	2.57	2.20	1.89	1.88	0.94	1.21	5.69								
2020	20.6	27.3	20.6	2.09	1.80	1.55	1.34	1.38	2.71	2.30	1.96	1.66	1.72	0.94	1.08	5.69								

TABLE 1.19: EXHAUST NO<sub>x</sub> AT 35.0 MPH

TABLE 1.20

LOW ALTITUDE

EXHAUST NO<sub>x</sub> EMISSION FACTORS (GRAMS/MILE) AT 55.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	3.63	3.04	2.55	2.15	1.95	4.45	3.84	3.32	2.89	2.56	1.95	2.11	25.92	10.69 @ 0F
1990	0.0	100.0	0.0	5.15	4.31	3.62	3.06	2.59	6.64	5.74	5.00	4.38	3.61	1.90	2.48	25.92	9.93 @ 25F
1990	100.0	0.0	100.0	4.67	4.17	3.74	3.37	2.90	5.76	5.36	5.03	4.75	4.05	2.01	2.65	25.92	9.25 @ 50F
1990	50.0	0.0	50.0	4.20	3.65	3.18	2.79	2.46	5.20	4.69	4.26	3.90	3.38	1.97	2.35	25.92	8.65 @ 75F
1990	0.0	50.0	0.0	4.45	3.72	3.12	2.63	2.30	5.66	4.89	4.25	3.71	3.16	1.93	2.28	25.92	7.23 @100F
1990	50.0	50.0	50.0	4.91	4.24	3.68	3.22	2.75	6.20	5.55	5.01	4.56	3.83	1.96	2.56	25.92	
1990	20.6	27.3	20.6	4.31	3.66	3.13	2.68	2.35	5.42	4.77	4.22	3.76	3.23	1.95	2.30	25.92	
1995	0.0	0.0	0.0	3.28	2.73	2.28	1.90	1.95	3.72	3.16	2.69	2.30	2.27	2.00	2.11	17.45	8.79 @ 0F
1995	0.0	100.0	0.0	4.47	3.66	3.00	2.47	2.36	5.45	4.58	3.86	3.27	3.01	1.90	2.47	17.45	8.26 @ 25F
1995	100.0	0.0	100.0	3.97	3.56	3.19	2.87	2.74	4.87	4.44	4.06	3.73	3.47	1.99	2.63	17.45	7.79 @ 50F
1995	50.0	0.0	50.0	3.68	3.19	2.78	2.42	2.38	4.38	3.87	3.44	3.07	2.92	1.99	2.34	17.45	7.36 @ 75F
1995	0.0	50.0	0.0	3.93	3.24	2.68	2.22	2.19	4.68	3.95	3.34	2.84	2.69	1.95	2.27	17.45	6.47 @100F
1995	50.0	50.0	50.0	4.22	3.61	3.10	2.67	2.55	5.16	4.51	3.96	3.50	3.24	1.95	2.55	17.45	
1995	20.6	27.3	20.6	3.81	3.21	2.71	2.29	2.26	4.51	3.89	3.36	2.91	2.77	1.97	2.29	17.45	
2000	0.0	0.0	0.0	2.67	2.26	1.91	1.62	1.72	3.50	2.94	2.48	2.09	2.19	1.65	1.65	12.74	7.45 @ 0F
2000	0.0	100.0	0.0	3.54	2.93	2.42	2.00	1.98	4.91	4.03	3.31	2.73	2.66	1.57	1.94	12.74	7.10 @ 25F
2000	100.0	0.0	100.0	3.21	2.88	2.58	2.32	2.27	4.32	3.89	3.52	3.18	3.07	1.65	2.07	12.74	6.76 @ 50F
2000	50.0	0.0	50.0	2.98	2.61	2.28	2.00	2.03	3.96	3.47	3.04	2.67	2.67	1.65	1.84	12.74	6.45 @ 75F
2000	0.0	50.0	0.0	3.15	2.63	2.20	1.84	1.88	4.26	3.53	2.94	2.44	2.46	1.61	1.78	12.74	6.12 @100F
2000	50.0	50.0	50.0	3.38	2.90	2.50	2.16	2.12	4.61	3.96	3.41	2.95	2.86	1.62	2.01	12.74	
2000	20.6	27.3	20.6	3.07	2.61	2.22	1.90	1.93	4.10	3.48	2.96	2.52	2.53	1.63	1.80	12.74	
2005	0.0	0.0	0.0	2.36	2.02	1.73	1.49	1.60	3.22	2.72	2.30	1.94	2.08	1.36	1.37	9.49	6.51 @ 0F
2005	0.0	100.0	0.0	3.11	2.59	2.16	1.80	1.80	4.40	3.60	2.94	2.41	2.41	1.31	1.61	9.49	6.20 @ 25F
2005	100.0	0.0	100.0	2.89	2.60	2.33	2.09	2.07	3.79	3.41	3.06	2.75	2.72	1.38	1.73	9.49	5.91 @ 50F
2005	50.0	0.0	50.0	2.67	2.35	2.06	1.82	1.86	3.55	3.10	2.71	2.37	2.43	1.37	1.53	9.49	5.64 @ 75F
2005	0.0	50.0	0.0	2.78	2.34	1.98	1.67	1.72	3.85	3.19	2.65	2.20	2.27	1.33	1.48	9.49	5.67 @100F
2005	50.0	50.0	50.0	3.00	2.59	2.24	1.95	1.93	4.10	3.50	3.00	2.58	2.56	1.35	1.67	9.49	
2005	20.6	27.3	20.6	2.72	2.34	2.01	1.73	1.78	3.69	3.13	2.65	2.25	2.32	1.35	1.49	9.49	
2010	0.0	0.0	0.0	2.24	1.93	1.66	1.43	1.54	3.13	2.64	2.23	1.89	2.03	1.28	1.32	8.31	6.02 @ 0F
2010	0.0	100.0	0.0	2.95	2.47	2.07	1.73	1.73	4.26	3.48	2.84	2.32	2.32	1.24	1.57	8.31	5.73 @ 25F
2010	100.0	0.0	100.0	2.79	2.50	2.25	2.02	1.99	3.69	3.31	2.97	2.67	2.63	1.31	1.68	8.31	5.45 @ 50F
2010	50.0	0.0	50.0	2.55	2.25	1.98	1.75	1.79	3.44	3.00	2.63	2.30	2.35	1.29	1.49	8.31	5.19 @ 75F
2010	0.0	50.0	0.0	2.63	2.23	1.89	1.61	1.66	3.72	3.09	2.56	2.13	2.20	1.26	1.43	8.31	5.37 @100F
2010	50.0	50.0	50.0	2.87	2.49	2.16	1.87	1.86	3.97	3.39	2.91	2.49	2.48	1.28	1.62	8.31	
2010	20.6	27.3	20.6	2.59	2.23	1.92	1.66	1.71	3.57	3.03	2.57	2.18	2.25	1.28	1.45	8.31	
2020	0.0	0.0	0.0	2.21	1.90	1.64	1.41	1.52	3.02	2.56	2.17	1.84	1.98	1.31	1.35	7.82	5.55 @ 0F
2020	0.0	100.0	0.0	2.90	2.43	2.04	1.71	1.71	4.09	3.35	2.74	2.24	2.24	1.26	1.60	7.82	5.29 @ 25F
2020	100.0	0.0	100.0	2.76	2.48	2.22	1.99	1.97	3.50	3.14	2.82	2.53	2.50	1.33	1.71	7.82	5.03 @ 50F
2020	50.0	0.0	50.0	2.52	2.22	1.96	1.73	1.77	3.29	2.88	2.52	2.20	2.26	1.32	1.51	7.82	4.79 @ 75F
2020	0.0	50.0	0.0	2.60	2.20	1.87	1.59	1.64	3.58	2.98	2.48	2.06	2.13	1.28	1.46	7.82	4.95 @100F
2020	50.0	50.0	50.0	2.83	2.45	2.13	1.85	1.84	3.80	3.25	2.78	2.39	2.37	1.30	1.66	7.82	
2020	20.6	27.3	20.6	2.55	2.20	1.90	1.64	1.69	3.43	2.91	2.47	2.10	2.17	1.30	1.48	7.82	

TABLE 1.20: EXHAUST NO<sub>x</sub> AT 55.0 MPH

TABLE 1.21

LOW ALTITUDE

EXHAUST NO<sub>x</sub> EMISSION FACTORS (GRAMS/MILE) AT 65.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	4.89	4.09	3.43	2.88	2.62	5.89	5.07	4.38	3.81	3.38	2.83	3.06	37.60	11.41 @ 0F
1990	0.0	100.0	0.0	6.96	5.83	4.90	4.14	3.51	8.99	7.78	6.78	5.93	4.89	2.76	3.59	37.60	10.60 @ 25F
1990	100.0	0.0	100.0	6.31	5.63	5.05	4.55	3.92	7.79	7.25	6.80	6.43	5.47	2.91	3.84	37.60	9.88 @ 50F
1990	50.0	0.0	50.0	5.63	4.89	4.27	3.74	3.29	6.91	6.23	5.66	5.18	4.48	2.86	3.41	37.60	9.23 @ 75F
1990	0.0	50.0	0.0	5.97	4.99	4.19	3.53	3.08	7.53	6.50	5.65	4.93	4.19	2.80	3.30	37.60	7.72 @100F
1990	50.0	50.0	50.0	6.64	5.73	4.98	4.34	3.71	8.39	7.52	6.79	6.18	5.18	2.84	3.72	37.60	
1990	20.6	27.3	20.6	5.78	4.91	4.19	3.59	3.15	7.21	6.33	5.60	4.99	4.28	2.82	3.34	37.60	
1995	0.0	0.0	0.0	4.31	3.58	2.99	2.49	2.55	4.92	4.18	3.56	3.03	3.00	2.90	3.06	25.31	9.38 @ 0F
1995	0.0	100.0	0.0	5.90	4.83	3.96	3.26	3.10	7.30	6.13	5.17	4.38	4.03	2.75	3.58	25.31	8.82 @ 25F
1995	100.0	0.0	100.0	5.22	4.68	4.20	3.77	3.59	6.51	5.93	5.43	4.98	4.63	2.89	3.81	25.31	8.31 @ 50F
1995	50.0	0.0	50.0	4.80	4.16	3.62	3.16	3.10	5.78	5.11	4.54	4.05	3.86	2.89	3.40	25.31	7.85 @ 75F
1995	0.0	50.0	0.0	5.14	4.24	3.50	2.90	2.85	6.18	5.21	4.41	3.74	3.55	2.83	3.29	25.31	6.90 @100F
1995	50.0	50.0	50.0	5.56	4.75	4.08	3.51	3.35	6.90	6.03	5.30	4.68	4.33	2.82	3.69	25.31	
1995	20.6	27.3	20.6	4.97	4.18	3.53	2.99	2.94	5.96	5.13	4.43	3.84	3.65	2.86	3.33	25.31	
2000	0.0	0.0	0.0	3.42	2.89	2.44	2.07	2.20	4.60	3.87	3.26	2.74	2.87	2.39	2.39	18.48	7.95 @ 0F
2000	0.0	100.0	0.0	4.56	3.76	3.11	2.57	2.54	6.47	5.31	4.37	3.61	3.50	2.28	2.81	18.48	7.57 @ 25F
2000	100.0	0.0	100.0	4.12	3.69	3.31	2.97	2.91	5.69	5.14	4.64	4.20	4.05	2.40	3.01	18.48	7.22 @ 50F
2000	50.0	0.0	50.0	3.79	3.31	2.90	2.54	2.57	5.19	4.54	3.98	3.50	3.49	2.39	2.67	18.48	6.89 @ 75F
2000	0.0	50.0	0.0	4.02	3.35	2.80	2.34	2.38	5.58	4.63	3.85	3.20	3.21	2.34	2.58	18.48	6.54 @100F
2000	50.0	50.0	50.0	4.34	3.73	3.21	2.77	2.72	6.08	5.22	4.51	3.90	3.78	2.34	2.91	18.48	
2000	20.6	27.3	20.6	3.90	3.32	2.83	2.41	2.45	5.37	4.56	3.88	3.30	3.31	2.36	2.61	18.48	
2005	0.0	0.0	0.0	2.97	2.54	2.18	1.87	2.00	4.21	3.56	3.00	2.54	2.72	1.97	1.98	13.77	6.94 @ 0F
2005	0.0	100.0	0.0	3.93	3.27	2.72	2.27	2.27	5.73	4.69	3.83	3.14	3.14	1.90	2.34	13.77	6.62 @ 25F
2005	100.0	0.0	100.0	3.65	3.28	2.94	2.64	2.61	4.94	4.44	3.99	3.59	3.55	2.00	2.51	13.77	6.31 @ 50F
2005	50.0	0.0	50.0	3.34	2.93	2.58	2.27	2.32	4.61	4.02	3.52	3.08	3.15	1.98	2.22	13.77	6.02 @ 75F
2005	0.0	50.0	0.0	3.47	2.93	2.47	2.08	2.15	5.00	4.15	3.44	2.85	2.95	1.93	2.14	13.77	6.05 @100F
2005	50.0	50.0	50.0	3.79	3.27	2.83	2.45	2.44	5.34	4.56	3.91	3.36	3.34	1.95	2.43	13.77	
2005	20.6	27.3	20.6	3.40	2.92	2.50	2.15	2.22	4.80	4.07	3.45	2.93	3.02	1.96	2.17	13.77	
2010	0.0	0.0	0.0	2.80	2.41	2.07	1.78	1.92	4.07	3.44	2.91	2.46	2.64	1.86	1.92	12.06	6.43 @ 0F
2010	0.0	100.0	0.0	3.70	3.10	2.60	2.17	2.17	5.53	4.51	3.69	3.01	3.01	1.80	2.27	12.06	6.12 @ 25F
2010	100.0	0.0	100.0	3.50	3.14	2.82	2.53	2.50	4.79	4.30	3.86	3.46	3.42	1.91	2.44	12.06	5.82 @ 50F
2010	50.0	0.0	50.0	3.17	2.79	2.46	2.17	2.22	4.45	3.89	3.40	2.98	3.05	1.88	2.15	12.06	5.54 @ 75F
2010	0.0	50.0	0.0	3.27	2.77	2.35	1.99	2.06	4.82	4.00	3.32	2.75	2.84	1.83	2.08	12.06	5.73 @100F
2010	50.0	50.0	50.0	3.60	3.12	2.71	2.35	2.34	5.16	4.41	3.77	3.24	3.22	1.86	2.36	12.06	
2010	20.6	27.3	20.6	3.21	2.77	2.39	2.06	2.12	4.63	3.92	3.33	2.83	2.91	1.85	2.10	12.06	
2020	0.0	0.0	0.0	2.75	2.37	2.04	1.76	1.89	3.92	3.33	2.82	2.39	2.57	1.89	1.96	11.34	5.93 @ 0F
2020	0.0	100.0	0.0	3.64	3.05	2.56	2.14	2.14	5.30	4.34	3.55	2.90	2.90	1.83	2.32	11.34	5.64 @ 25F
2020	100.0	0.0	100.0	3.46	3.10	2.79	2.50	2.47	4.53	4.07	3.65	3.28	3.24	1.93	2.48	11.34	5.37 @ 50F
2020	50.0	0.0	50.0	3.13	2.76	2.43	2.15	2.20	4.25	3.72	3.25	2.85	2.92	1.91	2.20	11.34	5.11 @ 75F
2020	0.0	50.0	0.0	3.22	2.73	2.32	1.97	2.03	4.63	3.85	3.20	2.66	2.75	1.86	2.12	11.34	5.28 @100F
2020	50.0	50.0	50.0	3.55	3.08	2.67	2.32	2.31	4.92	4.20	3.60	3.09	3.07	1.88	2.40	11.34	
2020	20.6	27.3	20.6	3.16	2.73	2.36	2.04	2.10	4.44	3.77	3.20	2.72	2.81	1.88	2.15	11.34	

TABLE 1.21: EXHAUST NO<sub>x</sub> AT 65.0 MPH

TABLE 1.22

HIGH ALTITUDE

EXHAUST NMHC EMISSION FACTORS (GRAMS/MILE) AT 2.5 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	19.73	16.19	13.32	11.00	16.68	27.06	22.86	19.44	16.65	23.36	1.78	2.74	15.00	57.71 @ 0F
1990	0.0	100.0	0.0	20.68	18.67	16.97	15.53	22.52	27.43	25.48	23.81	22.39	32.12	2.03	3.30	15.00	49.27 @ 25F
1990	100.0	0.0	100.0	215.52	106.61	53.50	27.21	23.13	259.04	134.22	70.32	37.22	30.55	2.69	4.68	15.00	42.08 @ 50F
1990	50.0	0.0	50.0	97.06	51.74	29.02	17.26	19.14	121.67	68.17	40.05	24.89	26.21	2.12	3.47	15.00	35.95 @ 75F
1990	0.0	50.0	0.0	20.00	17.07	14.66	12.70	18.86	27.01	23.74	21.05	18.83	26.68	1.85	2.92	15.00	41.48 @100F
1990	50.0	50.0	50.0	118.10	62.64	35.23	21.37	22.83	143.23	79.85	47.06	29.81	31.33	2.36	3.99	15.00	
1990	20.6	27.3	20.6	51.44	31.17	20.45	14.47	18.86	66.00	42.04	28.85	21.28	26.42	1.96	3.13	15.00	
1995	0.0	0.0	0.0	13.56	11.05	9.01	7.37	9.25	19.91	16.38	13.53	11.21	14.25	1.76	2.82	12.08	35.94 @ 0F
1995	0.0	100.0	0.0	16.64	14.29	12.32	10.66	12.52	22.23	19.45	17.13	15.18	18.86	1.97	3.49	12.08	30.18 @ 25F
1995	100.0	0.0	100.0	156.05	74.93	36.48	18.01	16.99	197.08	98.97	50.11	25.57	23.32	2.52	4.85	12.08	25.37 @ 50F
1995	50.0	0.0	50.0	70.26	36.31	19.77	11.45	12.19	92.06	49.89	28.27	16.91	17.78	2.03	3.59	12.08	21.35 @ 75F
1995	0.0	50.0	0.0	14.60	12.19	10.20	8.57	10.43	20.58	17.41	14.81	12.67	15.94	1.82	3.05	12.08	26.28 @100F
1995	50.0	50.0	50.0	86.35	44.61	24.40	14.34	14.76	109.65	59.21	33.62	20.37	21.09	2.24	4.17	12.08	
1995	20.6	27.3	20.6	37.22	21.94	14.02	9.66	11.06	50.02	30.80	20.35	14.41	16.70	1.90	3.26	12.08	
2000	0.0	0.0	0.0	10.93	8.85	7.17	5.80	6.71	16.29	13.11	10.56	8.53	10.03	1.37	2.01	10.68	24.84 @ 0F
2000	0.0	100.0	0.0	14.03	11.87	10.05	8.52	9.09	19.73	16.64	14.08	11.95	13.26	1.53	2.38	10.68	20.31 @ 25F
2000	100.0	0.0	100.0	102.71	52.26	26.86	13.93	13.66	156.19	77.14	38.34	19.18	18.45	2.01	3.42	10.68	16.60 @ 50F
2000	50.0	0.0	50.0	46.77	25.63	14.65	8.79	9.22	72.45	38.65	21.52	12.62	13.20	1.60	2.54	10.68	13.56 @ 75F
2000	0.0	50.0	0.0	11.81	9.76	8.07	6.68	7.44	17.29	14.22	11.73	9.71	11.11	1.41	2.13	10.68	16.33 @100F
2000	50.0	50.0	50.0	58.37	32.06	18.46	11.23	11.37	87.96	46.89	26.21	15.57	15.85	1.77	2.90	10.68	
2000	20.6	27.3	20.6	25.93	16.12	10.66	7.46	8.09	39.81	24.17	15.68	10.85	11.92	1.48	2.29	10.68	
2005	0.0	0.0	0.0	9.60	7.80	6.33	5.14	5.63	14.95	11.86	9.42	7.47	8.18	1.00	1.54	10.22	20.08 @ 0F
2005	0.0	100.0	0.0	12.77	10.76	9.06	7.63	7.70	18.70	15.45	12.77	10.56	10.67	1.12	1.73	10.22	15.86 @ 25F
2005	100.0	0.0	100.0	80.04	42.76	22.97	12.39	12.39	125.81	63.53	32.17	16.32	16.32	1.54	2.59	10.22	12.48 @ 50F
2005	50.0	0.0	50.0	36.62	21.05	12.52	7.73	8.00	58.85	32.16	18.22	10.78	11.18	1.20	1.94	10.22	9.77 @ 75F
2005	0.0	50.0	0.0	10.41	8.60	7.11	5.89	6.19	15.98	12.93	10.47	8.48	8.92	1.03	1.59	10.22	11.49 @100F
2005	50.0	50.0	50.0	46.40	26.76	16.01	10.01	10.05	72.25	39.49	22.47	13.44	13.50	1.33	2.16	10.22	
2005	20.6	27.3	20.6	20.92	13.55	9.21	6.55	6.84	33.34	20.66	13.53	9.33	9.77	1.10	1.73	10.22	
2010	0.0	0.0	0.0	9.22	7.49	6.09	4.95	5.42	14.47	11.44	9.04	7.15	7.82	0.92	1.48	10.12	19.25 @ 0F
2010	0.0	100.0	0.0	12.27	10.35	8.74	7.38	7.44	18.24	15.04	12.40	10.22	10.31	1.02	1.65	10.12	14.81 @ 25F
2010	100.0	0.0	100.0	72.66	39.86	21.88	12.02	12.02	118.75	60.32	30.72	15.67	15.67	1.43	2.49	10.12	11.29 @ 50F
2010	50.0	0.0	50.0	33.31	19.65	11.90	7.45	7.71	55.51	30.51	17.36	10.30	10.69	1.11	1.86	10.12	8.50 @ 75F
2010	0.0	50.0	0.0	9.96	8.25	6.83	5.66	5.95	15.49	12.49	10.08	8.14	8.55	0.94	1.52	10.12	9.47 @100F
2010	50.0	50.0	50.0	42.46	25.10	15.31	9.70	9.73	68.50	37.68	21.56	12.95	12.99	1.23	2.07	10.12	
2010	20.6	27.3	20.6	19.30	12.75	8.78	6.29	6.58	31.61	19.68	12.92	8.91	9.32	1.01	1.66	10.12	
2020	0.0	0.0	0.0	9.07	7.38	6.00	4.88	5.34	14.24	11.23	8.85	6.98	7.64	0.96	1.54	10.11	19.21 @ 0F
2020	0.0	100.0	0.0	12.09	10.20	8.61	7.27	7.34	17.93	14.74	12.13	9.98	10.06	1.07	1.74	10.11	14.79 @ 25F
2020	100.0	0.0	100.0	70.77	39.07	21.57	11.90	11.90	110.18	56.88	29.37	15.16	15.16	1.47	2.60	10.11	11.29 @ 50F
2020	50.0	0.0	50.0	32.42	19.24	11.71	7.35	7.61	51.79	28.95	16.68	9.99	10.36	1.15	1.94	10.11	8.51 @ 75F
2020	0.0	50.0	0.0	9.79	8.11	6.72	5.57	5.85	15.22	12.24	9.85	7.93	8.34	0.99	1.60	10.11	9.47 @100F
2020	50.0	50.0	50.0	41.43	24.64	15.09	9.59	9.62	64.05	35.81	20.75	12.57	12.61	1.27	2.17	10.11	
2020	20.6	27.3	20.6	18.83	12.50	8.64	6.20	6.48	29.91	18.88	12.50	8.65	9.06	1.05	1.73	10.11	

TABLE 1.22: EXHAUST NMHC AT 2.5 MPH

TABLE 1.23

HIGH ALTITUDE

EXHAUST NMHC EMISSION FACTORS (GRAMS/MILE) AT 5.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	10.43	8.58	7.08	5.87	8.82	15.16	12.87	11.01	9.48	13.16	1.57	2.41	13.18	46.00 @ 0F
1990	0.0	100.0	0.0	10.91	9.87	8.98	8.24	11.90	15.27	14.24	13.36	12.61	18.00	1.78	2.90	13.18	39.26 @ 25F
1990	100.0	0.0	100.0	113.73	56.35	28.32	14.43	12.27	143.68	74.81	39.38	20.94	17.09	2.37	4.11	13.18	33.54 @ 50F
1990	50.0	0.0	50.0	51.27	27.38	15.39	9.18	10.14	67.64	38.10	22.52	14.08	14.72	1.86	3.05	13.18	28.65 @ 75F
1990	0.0	50.0	0.0	10.56	9.03	7.78	6.76	9.97	15.09	13.32	11.87	10.67	14.99	1.63	2.56	13.18	33.06 @100F
1990	50.0	50.0	50.0	62.32	33.11	18.65	11.34	12.08	79.48	44.52	26.37	16.78	17.55	2.07	3.50	13.18	
1990	20.6	27.3	20.6	27.17	16.50	10.85	7.70	9.97	36.73	23.53	16.24	12.05	14.84	1.72	2.75	13.18	
1995	0.0	0.0	0.0	7.21	5.88	4.80	3.93	4.91	10.85	8.95	7.41	6.16	7.81	1.54	2.48	10.61	28.64 @ 0F
1995	0.0	100.0	0.0	8.86	7.61	6.56	5.68	6.66	12.07	10.59	9.35	8.31	10.34	1.73	3.07	10.61	24.05 @ 25F
1995	100.0	0.0	100.0	82.92	39.91	19.48	9.64	9.10	107.11	53.93	27.38	14.01	12.73	2.21	4.26	10.61	20.22 @ 50F
1995	50.0	0.0	50.0	37.33	19.33	10.55	6.12	6.50	50.05	27.20	15.46	9.28	9.72	1.79	3.15	10.61	17.02 @ 75F
1995	0.0	50.0	0.0	7.76	6.48	5.43	4.57	5.54	11.19	9.49	8.10	6.95	8.73	1.60	2.68	10.61	20.95 @100F
1995	50.0	50.0	50.0	45.89	23.76	13.02	7.66	7.88	59.59	32.26	18.36	11.16	11.53	1.97	3.66	10.61	
1995	20.6	27.3	20.6	19.77	11.68	7.47	5.16	5.89	27.19	16.79	11.13	7.90	9.14	1.67	2.86	10.61	
2000	0.0	0.0	0.0	5.94	4.81	3.89	3.15	3.64	8.85	7.13	5.75	4.65	5.47	1.20	1.76	9.39	19.80 @ 0F
2000	0.0	100.0	0.0	7.64	6.46	5.47	4.64	4.94	10.71	9.04	7.65	6.50	7.22	1.34	2.09	9.39	16.18 @ 25F
2000	100.0	0.0	100.0	55.69	28.40	14.63	7.60	7.46	84.64	41.87	20.85	10.45	10.03	1.76	3.01	9.39	13.23 @ 50F
2000	50.0	0.0	50.0	25.35	13.93	7.97	4.78	5.02	39.27	20.99	11.70	6.87	7.19	1.41	2.23	9.39	10.81 @ 75F
2000	0.0	50.0	0.0	6.42	5.30	4.39	3.63	4.04	9.39	7.73	6.38	5.29	6.05	1.24	1.87	9.39	13.02 @100F
2000	50.0	50.0	50.0	31.67	17.43	10.05	6.12	6.20	47.68	25.45	14.25	8.47	8.63	1.55	2.55	9.39	
2000	20.6	27.3	20.6	14.07	8.76	5.80	4.06	4.39	21.59	13.12	8.53	5.91	6.49	1.30	2.01	9.39	
2005	0.0	0.0	0.0	5.30	4.30	3.49	2.84	3.11	8.14	6.46	5.13	4.07	4.45	0.88	1.35	8.98	16.00 @ 0F
2005	0.0	100.0	0.0	7.05	5.94	5.00	4.21	4.25	10.19	8.42	6.96	5.75	5.81	0.98	1.52	8.98	12.64 @ 25F
2005	100.0	0.0	100.0	44.08	23.59	12.69	6.85	6.85	68.41	34.56	17.51	8.89	8.89	1.35	2.28	8.98	9.94 @ 50F
2005	50.0	0.0	50.0	20.16	11.61	6.91	4.27	4.42	32.00	17.50	9.91	5.87	6.09	1.06	1.70	8.98	7.79 @ 75F
2005	0.0	50.0	0.0	5.74	4.75	3.93	3.25	3.41	8.71	7.04	5.70	4.61	4.86	0.91	1.40	8.98	9.16 @100F
2005	50.0	50.0	50.0	25.57	14.76	8.84	5.53	5.55	39.30	21.49	12.23	7.32	7.35	1.17	1.90	8.98	
2005	20.6	27.3	20.6	11.53	7.47	5.08	3.61	3.78	18.14	11.24	7.36	5.08	5.32	0.97	1.52	8.98	
2010	0.0	0.0	0.0	5.11	4.16	3.38	2.75	3.01	7.91	6.25	4.94	3.91	4.28	0.81	1.30	8.89	15.34 @ 0F
2010	0.0	100.0	0.0	6.80	5.74	4.85	4.09	4.13	9.97	8.22	6.78	5.59	5.63	0.90	1.45	8.89	11.80 @ 25F
2010	100.0	0.0	100.0	40.28	22.10	12.14	6.67	6.67	64.81	32.94	16.78	8.57	8.57	1.26	2.18	8.89	9.00 @ 50F
2010	50.0	0.0	50.0	18.46	10.89	6.60	4.13	4.28	30.30	16.67	9.49	5.63	5.84	0.98	1.63	8.89	6.78 @ 75F
2010	0.0	50.0	0.0	5.52	4.57	3.79	3.14	3.30	8.47	6.83	5.51	4.45	4.68	0.83	1.34	8.89	7.54 @100F
2010	50.0	50.0	50.0	23.54	13.92	8.49	5.38	5.40	37.39	20.58	11.78	7.08	7.10	1.08	1.82	8.89	
2010	20.6	27.3	20.6	10.70	7.07	4.87	3.49	3.65	17.26	10.75	7.06	4.87	5.10	0.89	1.46	8.89	
2020	0.0	0.0	0.0	5.04	4.10	3.33	2.71	2.97	7.80	6.15	4.85	3.82	4.18	0.84	1.35	8.88	15.31 @ 0F
2020	0.0	100.0	0.0	6.71	5.67	4.79	4.04	4.07	9.82	8.08	6.64	5.46	5.51	0.94	1.53	8.88	11.79 @ 25F
2020	100.0	0.0	100.0	39.32	21.70	11.98	6.61	6.61	60.35	31.16	16.09	8.31	8.31	1.29	2.29	8.88	9.00 @ 50F
2020	50.0	0.0	50.0	18.01	10.69	6.51	4.08	4.23	28.37	15.85	9.14	5.47	5.68	1.01	1.71	8.88	6.78 @ 75F
2020	0.0	50.0	0.0	5.44	4.50	3.73	3.09	3.25	8.33	6.70	5.39	4.34	4.57	0.87	1.40	8.88	7.55 @100F
2020	50.0	50.0	50.0	23.02	13.69	8.38	5.33	5.34	35.08	19.62	11.36	6.89	6.91	1.12	1.91	8.88	
2020	20.6	27.3	20.6	10.46	6.95	4.80	3.44	3.60	16.38	10.34	6.85	4.74	4.96	0.92	1.52	8.88	

TABLE 1.23: EXHAUST NMHC AT 5.0 MPH

TABLE 1.24

HIGH ALTITUDE

EXHAUST NMHC EMISSION FACTORS (GRAMS/MILE) AT 10.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	5.48	4.51	3.73	3.10	4.60	8.17	6.95	5.95	5.14	7.07	1.23	1.89	10.35	30.14 @ 0F
1990	0.0	100.0	0.0	5.79	5.23	4.75	4.35	6.22	8.26	7.70	7.22	6.81	9.65	1.40	2.27	10.35	25.73 @ 25F
1990	100.0	0.0	100.0	60.84	30.08	15.09	7.67	6.56	78.34	40.73	21.42	11.38	9.32	1.86	3.23	10.35	21.97 @ 50F
1990	50.0	0.0	50.0	27.38	14.59	8.18	4.87	5.35	36.85	20.73	12.23	7.64	7.96	1.46	2.40	10.35	18.77 @ 75F
1990	0.0	50.0	0.0	5.57	4.76	4.11	3.57	5.21	8.15	7.20	6.42	5.77	8.05	1.28	2.01	10.35	21.66 @100F
1990	50.0	50.0	50.0	33.31	17.65	9.92	6.01	6.39	43.30	24.22	14.32	9.09	9.48	1.63	2.75	10.35	
1990	20.6	27.3	20.6	14.47	8.76	5.75	4.07	5.23	19.96	12.77	8.80	6.53	7.99	1.35	2.16	10.35	
1995	0.0	0.0	0.0	3.96	3.23	2.64	2.16	2.67	6.00	4.95	4.10	3.41	4.29	1.21	1.95	8.33	18.77 @ 0F
1995	0.0	100.0	0.0	4.91	4.21	3.63	3.13	3.63	6.72	5.88	5.18	4.60	5.68	1.36	2.41	8.33	15.76 @ 25F
1995	100.0	0.0	100.0	45.85	22.11	10.81	5.36	5.08	59.73	30.06	15.25	7.80	7.11	1.74	3.34	8.33	13.25 @ 50F
1995	50.0	0.0	50.0	20.62	10.69	5.84	3.38	3.59	27.88	15.14	8.59	5.15	5.39	1.40	2.48	8.33	11.15 @ 75F
1995	0.0	50.0	0.0	4.28	3.57	2.99	2.51	3.02	6.21	5.26	4.48	3.85	4.80	1.25	2.10	8.33	13.73 @100F
1995	50.0	50.0	50.0	25.38	13.16	7.22	4.25	4.36	33.23	17.97	10.22	6.20	6.39	1.55	2.88	8.33	
1995	20.6	27.3	20.6	10.91	6.45	4.12	2.84	3.22	15.13	9.33	6.17	4.38	5.04	1.31	2.24	8.33	
2000	0.0	0.0	0.0	3.43	2.78	2.25	1.82	2.09	5.04	4.06	3.27	2.64	3.09	0.94	1.38	7.37	12.97 @ 0F
2000	0.0	100.0	0.0	4.43	3.74	3.17	2.68	2.84	6.12	5.16	4.36	3.70	4.08	1.05	1.64	7.37	10.60 @ 25F
2000	100.0	0.0	100.0	32.05	16.40	8.47	4.41	4.34	48.16	23.84	11.87	5.95	5.73	1.38	2.36	7.37	8.67 @ 50F
2000	50.0	0.0	50.0	14.58	8.03	4.61	2.77	2.90	22.34	11.94	6.66	3.91	4.08	1.10	1.75	7.37	7.08 @ 75F
2000	0.0	50.0	0.0	3.71	3.06	2.53	2.10	2.32	5.35	4.40	3.63	3.00	3.42	0.97	1.47	7.37	8.53 @100F
2000	50.0	50.0	50.0	18.24	10.07	5.82	3.55	3.59	27.14	14.50	8.12	4.82	4.91	1.22	2.00	7.37	
2000	20.6	27.3	20.6	8.10	5.05	3.35	2.34	2.53	12.28	7.47	4.85	3.36	3.67	1.02	1.58	7.37	
2005	0.0	0.0	0.0	3.15	2.56	2.08	1.69	1.85	4.74	3.76	2.98	2.37	2.59	0.69	1.06	7.05	10.49 @ 0F
2005	0.0	100.0	0.0	4.19	3.53	2.97	2.50	2.53	5.93	4.90	4.05	3.35	3.38	0.77	1.19	7.05	8.28 @ 25F
2005	100.0	0.0	100.0	26.10	14.00	7.54	4.08	4.08	39.71	20.08	10.18	5.17	5.17	1.06	1.79	7.05	6.51 @ 50F
2005	50.0	0.0	50.0	11.94	6.89	4.10	2.54	2.63	18.58	10.16	5.76	3.41	3.54	0.83	1.34	7.05	5.10 @ 75F
2005	0.0	50.0	0.0	3.41	2.82	2.33	1.93	2.03	5.07	4.10	3.32	2.68	2.82	0.71	1.10	7.05	6.00 @100F
2005	50.0	50.0	50.0	15.15	8.76	5.26	3.29	3.30	22.82	12.49	7.11	4.26	4.28	0.92	1.49	7.05	
2005	20.6	27.3	20.6	6.83	4.43	3.02	2.15	2.24	10.53	6.53	4.28	2.95	3.09	0.76	1.19	7.05	
2010	0.0	0.0	0.0	3.06	2.49	2.02	1.64	1.80	4.63	3.66	2.89	2.29	2.50	0.63	1.02	6.98	10.05 @ 0F
2010	0.0	100.0	0.0	4.07	3.44	2.90	2.45	2.47	5.84	4.81	3.97	3.27	3.30	0.71	1.14	6.98	7.73 @ 25F
2010	100.0	0.0	100.0	24.09	13.23	7.27	3.99	3.99	37.83	19.25	9.81	5.01	5.01	0.99	1.72	6.98	5.90 @ 50F
2010	50.0	0.0	50.0	11.04	6.52	3.95	2.47	2.56	17.69	9.74	5.55	3.30	3.42	0.76	1.28	6.98	4.44 @ 75F
2010	0.0	50.0	0.0	3.30	2.73	2.27	1.88	1.97	4.96	4.00	3.22	2.60	2.74	0.65	1.05	6.98	4.94 @100F
2010	50.0	50.0	50.0	14.08	8.33	5.08	3.22	3.23	21.84	12.03	6.89	4.14	4.16	0.85	1.43	6.98	
2010	20.6	27.3	20.6	6.40	4.23	2.91	2.09	2.18	10.09	6.29	4.13	2.85	2.98	0.70	1.14	6.98	
2020	0.0	0.0	0.0	3.02	2.46	2.00	1.63	1.78	4.58	3.61	2.85	2.24	2.46	0.66	1.06	6.97	10.03 @ 0F
2020	0.0	100.0	0.0	4.03	3.40	2.87	2.42	2.44	5.76	4.74	3.90	3.21	3.23	0.74	1.20	6.97	7.72 @ 25F
2020	100.0	0.0	100.0	23.59	13.02	7.19	3.97	3.97	35.43	18.29	9.44	4.88	4.88	1.02	1.79	6.97	5.89 @ 50F
2020	50.0	0.0	50.0	10.81	6.41	3.90	2.45	2.54	16.66	9.31	5.37	3.21	3.33	0.79	1.34	6.97	4.45 @ 75F
2020	0.0	50.0	0.0	3.26	2.70	2.24	1.86	1.95	4.89	3.94	3.17	2.55	2.68	0.68	1.10	6.97	4.95 @100F
2020	50.0	50.0	50.0	13.81	8.21	5.03	3.20	3.21	20.60	11.52	6.67	4.04	4.06	0.88	1.50	6.97	
2020	20.6	27.3	20.6	6.28	4.17	2.88	2.07	2.16	9.62	6.07	4.02	2.78	2.91	0.72	1.20	6.97	

TABLE 1.24: EXHAUST NMHC AT 10.0 MPH

TABLE 1.25

HIGH ALTITUDE

EXHAUST NMHC EMISSION FACTORS (GRAMS/MILE) AT 19.6 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	3.07	2.54	2.10	1.75	2.55	4.80	4.09	3.52	3.05	4.13	0.82	1.26	6.91	15.04 @ 0F
1990	0.0	100.0	0.0	3.30	2.97	2.69	2.46	3.46	4.87	4.54	4.25	4.01	5.62	0.94	1.52	6.91	12.84 @ 25F
1990	100.0	0.0	100.0	35.03	17.27	8.64	4.38	3.78	46.71	24.26	12.74	6.76	5.56	1.24	2.16	6.91	10.96 @ 50F
1990	50.0	0.0	50.0	15.73	8.35	4.66	2.77	3.02	21.95	12.33	7.27	4.54	4.70	0.98	1.60	6.91	9.37 @ 75F
1990	0.0	50.0	0.0	3.14	2.69	2.32	2.02	2.89	4.79	4.24	3.79	3.41	4.70	0.85	1.35	6.91	10.81 @100F
1990	50.0	50.0	50.0	19.17	10.12	5.66	3.42	3.62	25.79	14.40	8.50	5.39	5.59	1.09	1.84	6.91	
1990	20.6	27.3	20.6	8.28	4.99	3.26	2.31	2.92	11.86	7.57	5.22	3.87	4.68	0.90	1.44	6.91	
1995	0.0	0.0	0.0	2.37	1.93	1.58	1.29	1.58	3.64	3.00	2.49	2.07	2.58	0.81	1.30	5.57	9.36 @ 0F
1995	0.0	100.0	0.0	2.98	2.55	2.19	1.89	2.16	4.11	3.59	3.16	2.80	3.41	0.91	1.61	5.57	7.86 @ 25F
1995	100.0	0.0	100.0	27.72	13.41	6.58	3.27	3.12	36.64	18.44	9.35	4.78	4.38	1.16	2.23	5.57	6.61 @ 50F
1995	50.0	0.0	50.0	12.44	6.47	3.53	2.05	2.16	17.08	9.26	5.25	3.14	3.28	0.94	1.65	5.57	5.56 @ 75F
1995	0.0	50.0	0.0	2.57	2.15	1.80	1.51	1.78	3.78	3.20	2.72	2.34	2.88	0.84	1.40	5.57	6.85 @100F
1995	50.0	50.0	50.0	15.35	7.98	4.39	2.58	2.64	20.38	11.02	6.26	3.79	3.89	1.03	1.92	5.57	
1995	20.6	27.3	20.6	6.58	3.89	2.49	1.71	1.92	9.25	5.69	3.76	2.67	3.04	0.88	1.50	5.57	
2000	0.0	0.0	0.0	2.20	1.78	1.44	1.17	1.33	3.18	2.56	2.06	1.66	1.93	0.63	0.93	4.92	6.47 @ 0F
2000	0.0	100.0	0.0	2.86	2.41	2.04	1.72	1.81	3.88	3.26	2.75	2.33	2.55	0.70	1.10	4.92	5.29 @ 25F
2000	100.0	0.0	100.0	20.48	10.53	5.46	2.86	2.82	30.33	15.02	7.49	3.75	3.63	0.92	1.58	4.92	4.32 @ 50F
2000	50.0	0.0	50.0	9.31	5.15	2.96	1.78	1.86	14.06	7.52	4.20	2.46	2.57	0.74	1.17	4.92	3.53 @ 75F
2000	0.0	50.0	0.0	2.38	1.97	1.62	1.34	1.47	3.38	2.78	2.29	1.89	2.13	0.65	0.98	4.92	4.26 @100F
2000	50.0	50.0	50.0	11.67	6.47	3.75	2.29	2.31	17.10	9.14	5.12	3.04	3.09	0.81	1.34	4.92	
2000	20.6	27.3	20.6	5.18	3.24	2.15	1.51	1.62	7.74	4.70	3.06	2.11	2.30	0.68	1.05	4.92	
2005	0.0	0.0	0.0	2.09	1.70	1.38	1.12	1.23	3.07	2.43	1.93	1.53	1.67	0.46	0.71	4.71	5.23 @ 0F
2005	0.0	100.0	0.0	2.79	2.35	1.98	1.67	1.68	3.85	3.18	2.63	2.17	2.19	0.52	0.80	4.71	4.13 @ 25F
2005	100.0	0.0	100.0	17.30	9.30	5.02	2.72	2.72	25.66	12.99	6.59	3.35	3.35	0.71	1.20	4.71	3.25 @ 50F
2005	50.0	0.0	50.0	7.91	4.57	2.73	1.69	1.75	12.00	6.57	3.73	2.21	2.29	0.56	0.89	4.71	2.55 @ 75F
2005	0.0	50.0	0.0	2.27	1.88	1.55	1.28	1.35	3.29	2.65	2.15	1.74	1.83	0.48	0.73	4.71	2.99 @100F
2005	50.0	50.0	50.0	10.04	5.82	3.50	2.19	2.20	14.75	8.08	4.61	2.76	2.77	0.61	1.00	4.71	
2005	20.6	27.3	20.6	4.53	2.95	2.01	1.43	1.49	6.81	4.23	2.77	1.91	2.00	0.51	0.80	4.71	
2010	0.0	0.0	0.0	2.05	1.67	1.36	1.10	1.21	3.03	2.39	1.89	1.49	1.63	0.42	0.68	4.67	5.01 @ 0F
2010	0.0	100.0	0.0	2.73	2.31	1.95	1.64	1.66	3.82	3.14	2.59	2.13	2.15	0.47	0.76	4.67	3.86 @ 25F
2010	100.0	0.0	100.0	16.16	8.88	4.88	2.68	2.68	24.62	12.54	6.40	3.27	3.27	0.66	1.15	4.67	2.94 @ 50F
2010	50.0	0.0	50.0	7.41	4.37	2.65	1.66	1.72	11.52	6.35	3.62	2.15	2.23	0.51	0.86	4.67	2.21 @ 75F
2010	0.0	50.0	0.0	2.22	1.84	1.52	1.26	1.32	3.24	2.61	2.11	1.70	1.79	0.44	0.70	4.67	2.47 @100F
2010	50.0	50.0	50.0	9.45	5.59	3.41	2.16	2.17	14.22	7.84	4.49	2.70	2.71	0.57	0.95	4.67	
2010	20.6	27.3	20.6	4.29	2.84	1.96	1.40	1.47	6.57	4.10	2.70	1.86	1.95	0.47	0.76	4.67	
2020	0.0	0.0	0.0	2.04	1.66	1.35	1.10	1.20	3.00	2.37	1.87	1.47	1.61	0.44	0.71	4.66	5.01 @ 0F
2020	0.0	100.0	0.0	2.71	2.29	1.93	1.63	1.65	3.78	3.11	2.56	2.10	2.12	0.49	0.80	4.66	3.85 @ 25F
2020	100.0	0.0	100.0	15.89	8.77	4.84	2.67	2.67	23.23	11.99	6.19	3.20	3.20	0.68	1.20	4.66	2.94 @ 50F
2020	50.0	0.0	50.0	7.28	4.32	2.63	1.65	1.71	10.92	6.10	3.52	2.11	2.18	0.53	0.89	4.66	2.22 @ 75F
2020	0.0	50.0	0.0	2.20	1.82	1.51	1.25	1.31	3.21	2.58	2.08	1.67	1.76	0.45	0.74	4.66	2.47 @100F
2020	50.0	50.0	50.0	9.30	5.53	3.39	2.15	2.16	13.50	7.55	4.37	2.65	2.66	0.59	1.00	4.66	
2020	20.6	27.3	20.6	4.23	2.81	1.94	1.39	1.46	6.30	3.98	2.63	1.83	1.91	0.48	0.80	4.66	

TABLE 1.25: EXHAUST NMHC AT 19.6 MPH

TABLE 1.26

HIGH ALTITUDE

EXHAUST NMHC EMISSION FACTORS (GRAMS/MILE) AT 35.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	1.85	1.53	1.28	1.07	1.52	3.10	2.66	2.30	2.00	2.64	0.51	0.78	4.29	6.78 @ 0F
1990	0.0	100.0	0.0	2.02	1.81	1.64	1.50	2.07	3.18	2.95	2.77	2.61	3.58	0.58	0.94	4.29	5.79 @ 25F
1990	100.0	0.0	100.0	21.50	10.53	5.24	2.64	2.29	30.68	15.90	8.33	4.42	3.66	0.77	1.34	4.29	4.95 @ 50F
1990	50.0	0.0	50.0	9.68	5.10	2.84	1.68	1.82	14.43	8.09	4.76	2.98	3.05	0.61	0.99	4.29	4.23 @ 75F
1990	0.0	50.0	0.0	1.90	1.63	1.41	1.23	1.73	3.11	2.76	2.47	2.24	3.00	0.53	0.83	4.29	4.88 @100F
1990	50.0	50.0	50.0	11.76	6.17	3.44	2.07	2.18	16.93	9.43	5.55	3.52	3.62	0.68	1.14	4.29	
1990	20.6	27.3	20.6	5.07	3.04	1.99	1.41	1.75	7.77	4.95	3.41	2.54	3.01	0.56	0.90	4.29	
1995	0.0	0.0	0.0	1.47	1.20	0.99	0.81	0.97	2.40	1.99	1.65	1.38	1.70	0.50	0.81	3.46	4.22 @ 0F
1995	0.0	100.0	0.0	1.86	1.59	1.36	1.17	1.33	2.71	2.37	2.08	1.85	2.23	0.56	1.00	3.46	3.55 @ 25F
1995	100.0	0.0	100.0	17.30	8.31	4.05	2.00	1.91	24.17	12.14	6.15	3.14	2.88	0.72	1.39	3.46	2.98 @ 50F
1995	50.0	0.0	50.0	7.78	4.02	2.19	1.27	1.33	11.29	6.12	3.47	2.08	2.16	0.58	1.03	3.46	2.51 @ 75F
1995	0.0	50.0	0.0	1.60	1.34	1.12	0.94	1.10	2.49	2.12	1.80	1.55	1.89	0.52	0.87	3.46	3.09 @100F
1995	50.0	50.0	50.0	9.58	4.95	2.70	1.59	1.62	13.44	7.26	4.12	2.49	2.56	0.64	1.19	3.46	
1995	20.6	27.3	20.6	4.11	2.42	1.54	1.06	1.18	6.11	3.76	2.49	1.77	2.00	0.54	0.93	3.46	
2000	0.0	0.0	0.0	1.32	1.07	0.87	0.70	0.80	2.03	1.64	1.32	1.07	1.23	0.39	0.57	3.06	2.92 @ 0F
2000	0.0	100.0	0.0	1.72	1.45	1.22	1.03	1.08	2.48	2.09	1.76	1.49	1.62	0.44	0.68	3.06	2.39 @ 25F
2000	100.0	0.0	100.0	12.35	6.31	3.26	1.69	1.67	19.47	9.62	4.78	2.39	2.32	0.57	0.98	3.06	1.95 @ 50F
2000	50.0	0.0	50.0	5.62	3.09	1.77	1.06	1.11	9.03	4.82	2.69	1.58	1.64	0.46	0.73	3.06	1.59 @ 75F
2000	0.0	50.0	0.0	1.43	1.18	0.98	0.81	0.88	2.16	1.78	1.47	1.21	1.36	0.40	0.61	3.06	1.92 @100F
2000	50.0	50.0	50.0	7.03	3.88	2.24	1.36	1.38	10.98	5.85	3.27	1.94	1.97	0.51	0.83	3.06	
2000	20.6	27.3	20.6	3.12	1.95	1.29	0.90	0.97	4.97	3.02	1.96	1.35	1.47	0.43	0.65	3.06	
2005	0.0	0.0	0.0	1.22	0.99	0.81	0.65	0.72	1.92	1.52	1.21	0.96	1.05	0.29	0.44	2.93	2.36 @ 0F
2005	0.0	100.0	0.0	1.63	1.37	1.15	0.97	0.98	2.40	1.99	1.64	1.36	1.37	0.32	0.50	2.93	1.86 @ 25F
2005	100.0	0.0	100.0	10.14	5.43	2.93	1.58	1.58	16.09	8.14	4.12	2.09	2.09	0.44	0.74	2.93	1.47 @ 50F
2005	50.0	0.0	50.0	4.64	2.67	1.59	0.99	1.02	7.53	4.12	2.34	1.38	1.43	0.34	0.55	2.93	1.15 @ 75F
2005	0.0	50.0	0.0	1.33	1.10	0.91	0.75	0.79	2.05	1.66	1.34	1.09	1.14	0.30	0.46	2.93	1.35 @100F
2005	50.0	50.0	50.0	5.88	3.40	2.04	1.28	1.28	9.25	5.06	2.88	1.73	1.73	0.38	0.62	2.93	
2005	20.6	27.3	20.6	2.65	1.72	1.17	0.83	0.87	4.27	2.65	1.74	1.20	1.25	0.31	0.49	2.93	
2010	0.0	0.0	0.0	1.18	0.96	0.78	0.64	0.70	1.87	1.48	1.17	0.92	1.01	0.26	0.42	2.90	2.26 @ 0F
2010	0.0	100.0	0.0	1.58	1.33	1.12	0.95	0.95	2.36	1.94	1.60	1.32	1.33	0.29	0.47	2.90	1.74 @ 25F
2010	100.0	0.0	100.0	9.33	5.12	2.81	1.55	1.55	15.26	7.76	3.96	2.02	2.02	0.41	0.71	2.90	1.33 @ 50F
2010	50.0	0.0	50.0	4.28	2.52	1.53	0.96	0.99	7.13	3.93	2.24	1.33	1.38	0.32	0.53	2.90	1.00 @ 75F
2010	0.0	50.0	0.0	1.28	1.06	0.88	0.73	0.76	2.00	1.61	1.30	1.05	1.10	0.27	0.44	2.90	1.11 @100F
2010	50.0	50.0	50.0	5.45	3.22	1.97	1.25	1.25	8.81	4.85	2.78	1.67	1.67	0.35	0.59	2.90	
2010	20.6	27.3	20.6	2.48	1.64	1.13	0.81	0.85	4.07	2.54	1.66	1.15	1.20	0.29	0.47	2.90	
2020	0.0	0.0	0.0	1.17	0.95	0.77	0.63	0.69	1.84	1.45	1.15	0.90	0.99	0.27	0.44	2.89	2.26 @ 0F
2020	0.0	100.0	0.0	1.56	1.32	1.11	0.94	0.95	2.32	1.91	1.57	1.29	1.30	0.31	0.50	2.89	1.74 @ 25F
2020	100.0	0.0	100.0	9.12	5.04	2.78	1.53	1.53	14.27	7.37	3.80	1.96	1.96	0.42	0.74	2.89	1.33 @ 50F
2020	50.0	0.0	50.0	4.18	2.48	1.51	0.95	0.98	6.71	3.75	2.16	1.29	1.34	0.33	0.56	2.89	1.00 @ 75F
2020	0.0	50.0	0.0	1.26	1.04	0.87	0.72	0.75	1.97	1.59	1.28	1.03	1.08	0.28	0.46	2.89	1.11 @100F
2020	50.0	50.0	50.0	5.34	3.18	1.95	1.24	1.24	8.30	4.64	2.69	1.63	1.63	0.36	0.62	2.89	
2020	20.6	27.3	20.6	2.43	1.61	1.11	0.80	0.84	3.87	2.44	1.62	1.12	1.17	0.30	0.50	2.89	

TABLE 1.26: EXHAUST NMHC AT 35.0 MPH

TABLE 1.27

HIGH ALTITUDE

EXHAUST NMHC EMISSION FACTORS (GRAMS/MILE) AT 55.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	1.45	1.21	1.01	0.85	1.19	2.57	2.22	1.93	1.69	2.18	0.37	0.58	3.15	4.34 @ 0F
1990	0.0	100.0	0.0	1.59	1.43	1.29	1.18	1.61	2.64	2.46	2.31	2.18	2.95	0.43	0.69	3.15	3.71 @ 25F
1990	100.0	0.0	100.0	16.97	8.28	4.11	2.07	1.79	25.58	13.26	6.96	3.69	3.06	0.57	0.98	3.15	3.17 @ 50F
1990	50.0	0.0	50.0	7.66	4.03	2.23	1.33	1.42	12.05	6.76	3.99	2.50	2.54	0.44	0.73	3.15	2.70 @ 75F
1990	0.0	50.0	0.0	1.50	1.29	1.11	0.97	1.35	2.58	2.30	2.07	1.88	2.48	0.39	0.61	3.15	3.12 @100F
1990	50.0	50.0	50.0	9.28	4.86	2.70	1.62	1.70	14.11	7.86	4.63	2.94	3.01	0.50	0.84	3.15	
1990	20.6	27.3	20.6	4.01	2.40	1.57	1.11	1.37	6.48	4.14	2.86	2.13	2.50	0.41	0.66	3.15	
1995	0.0	0.0	0.0	1.17	0.96	0.79	0.64	0.77	1.99	1.65	1.37	1.15	1.41	0.37	0.59	2.54	2.70 @ 0F
1995	0.0	100.0	0.0	1.48	1.26	1.08	0.93	1.05	2.24	1.96	1.73	1.53	1.85	0.41	0.74	2.54	2.27 @ 25F
1995	100.0	0.0	100.0	13.76	6.58	3.19	1.57	1.50	19.99	10.04	5.08	2.60	2.38	0.53	1.02	2.54	1.91 @ 50F
1995	50.0	0.0	50.0	6.20	3.19	1.73	1.00	1.05	9.35	5.07	2.88	1.73	1.79	0.43	0.75	2.54	1.61 @ 75F
1995	0.0	50.0	0.0	1.28	1.07	0.89	0.75	0.87	2.06	1.75	1.50	1.29	1.57	0.38	0.64	2.54	1.98 @100F
1995	50.0	50.0	50.0	7.62	3.92	2.14	1.25	1.28	11.11	6.00	3.40	2.06	2.11	0.47	0.88	2.54	
1995	20.6	27.3	20.6	3.28	1.92	1.23	0.85	0.94	5.06	3.12	2.07	1.47	1.66	0.40	0.68	2.54	
2000	0.0	0.0	0.0	1.02	0.83	0.67	0.54	0.62	1.64	1.32	1.07	0.87	1.00	0.29	0.42	2.25	1.87 @ 0F
2000	0.0	100.0	0.0	1.33	1.12	0.94	0.80	0.83	2.00	1.68	1.42	1.21	1.31	0.32	0.50	2.25	1.53 @ 25F
2000	100.0	0.0	100.0	9.59	4.88	2.51	1.30	1.28	15.78	7.79	3.87	1.93	1.87	0.42	0.72	2.25	1.25 @ 50F
2000	50.0	0.0	50.0	4.37	2.39	1.37	0.82	0.86	7.33	3.91	2.18	1.28	1.33	0.34	0.54	2.25	1.02 @ 75F
2000	0.0	50.0	0.0	1.11	0.92	0.76	0.63	0.68	1.75	1.44	1.19	0.98	1.10	0.30	0.45	2.25	1.23 @100F
2000	50.0	50.0	50.0	5.46	3.00	1.73	1.05	1.06	8.89	4.74	2.65	1.57	1.59	0.37	0.61	2.25	
2000	20.6	27.3	20.6	2.42	1.51	1.00	0.70	0.75	4.02	2.44	1.59	1.10	1.19	0.31	0.48	2.25	
2005	0.0	0.0	0.0	0.93	0.75	0.61	0.50	0.54	1.53	1.21	0.96	0.76	0.83	0.21	0.32	2.15	1.51 @ 0F
2005	0.0	100.0	0.0	1.23	1.04	0.87	0.74	0.74	1.91	1.58	1.30	1.08	1.09	0.23	0.36	2.15	1.19 @ 25F
2005	100.0	0.0	100.0	7.70	4.12	2.21	1.20	1.20	12.82	6.47	3.28	1.66	1.66	0.32	0.55	2.15	0.94 @ 50F
2005	50.0	0.0	50.0	3.52	2.03	1.21	0.75	0.77	6.00	3.28	1.86	1.10	1.14	0.25	0.41	2.15	0.74 @ 75F
2005	0.0	50.0	0.0	1.00	0.83	0.69	0.57	0.60	1.63	1.32	1.07	0.87	0.91	0.22	0.33	2.15	0.87 @100F
2005	50.0	50.0	50.0	4.46	2.58	1.54	0.96	0.97	7.36	4.03	2.29	1.37	1.38	0.28	0.45	2.15	
2005	20.6	27.3	20.6	2.01	1.30	0.89	0.63	0.66	3.40	2.11	1.38	0.95	1.00	0.23	0.36	2.15	
2010	0.0	0.0	0.0	0.89	0.72	0.59	0.48	0.52	1.47	1.16	0.92	0.73	0.80	0.19	0.31	2.13	1.45 @ 0F
2010	0.0	100.0	0.0	1.18	1.00	0.84	0.71	0.72	1.86	1.53	1.26	1.04	1.05	0.22	0.35	2.13	1.12 @ 25F
2010	100.0	0.0	100.0	7.00	3.84	2.11	1.16	1.16	12.06	6.13	3.12	1.60	1.60	0.30	0.52	2.13	0.85 @ 50F
2010	50.0	0.0	50.0	3.21	1.89	1.15	0.72	0.74	5.64	3.10	1.77	1.05	1.09	0.23	0.39	2.13	0.64 @ 75F
2010	0.0	50.0	0.0	0.96	0.80	0.66	0.55	0.57	1.58	1.27	1.03	0.83	0.87	0.20	0.32	2.13	0.71 @100F
2010	50.0	50.0	50.0	4.09	2.42	1.48	0.94	0.94	6.96	3.83	2.19	1.32	1.32	0.26	0.44	2.13	
2010	20.6	27.3	20.6	1.86	1.23	0.85	0.61	0.63	3.21	2.00	1.31	0.91	0.95	0.21	0.35	2.13	
2020	0.0	0.0	0.0	0.87	0.71	0.58	0.47	0.51	1.45	1.14	0.90	0.71	0.78	0.20	0.32	2.13	1.45 @ 0F
2020	0.0	100.0	0.0	1.16	0.98	0.83	0.70	0.71	1.83	1.50	1.24	1.02	1.02	0.22	0.37	2.13	1.11 @ 25F
2020	100.0	0.0	100.0	6.82	3.77	2.08	1.15	1.15	11.22	5.79	2.99	1.54	1.54	0.31	0.55	2.13	0.85 @ 50F
2020	50.0	0.0	50.0	3.13	1.86	1.13	0.71	0.73	5.28	2.95	1.70	1.02	1.05	0.24	0.41	2.13	0.64 @ 75F
2020	0.0	50.0	0.0	0.94	0.78	0.65	0.54	0.56	1.55	1.25	1.00	0.81	0.85	0.21	0.34	2.13	0.71 @100F
2020	50.0	50.0	50.0	3.99	2.38	1.46	0.93	0.93	6.52	3.65	2.11	1.28	1.28	0.27	0.46	2.13	
2020	20.6	27.3	20.6	1.82	1.21	0.83	0.60	0.63	3.05	1.92	1.27	0.88	0.92	0.22	0.36	2.13	

TABLE 1.27: EXHAUST NMHC AT 55.0 MPH

TABLE 1.28

HIGH ALTITUDE

EXHAUST NMHC EMISSION FACTORS (GRAMS/MILE) AT 65.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	2.59	2.15	1.80	1.51	2.15	4.65	4.00	3.47	3.04	3.98	0.37	0.56	3.09	4.46 @ 0F
1990	0.0	100.0	0.0	2.47	2.22	2.02	1.86	2.59	4.21	3.93	3.70	3.51	4.82	0.42	0.68	3.09	3.81 @ 25F
1990	100.0	0.0	100.0	25.92	12.74	6.36	3.22	2.77	39.90	20.80	10.96	5.84	4.80	0.55	0.96	3.09	3.25 @ 50F
1990	50.0	0.0	50.0	12.65	6.70	3.75	2.24	2.42	20.27	11.44	6.78	4.27	4.35	0.44	0.71	3.09	2.78 @ 75F
1990	0.0	50.0	0.0	2.54	2.18	1.89	1.65	2.34	4.45	3.96	3.56	3.23	4.34	0.38	0.60	3.09	3.20 @100F
1990	50.0	50.0	50.0	14.19	7.48	4.19	2.54	2.68	22.06	12.36	7.33	4.68	4.81	0.49	0.82	3.09	
1990	20.6	27.3	20.6	6.68	4.03	2.65	1.88	2.36	10.98	7.05	4.89	3.66	4.34	0.40	0.64	3.09	
1995	0.0	0.0	0.0	1.88	1.54	1.26	1.04	1.26	3.35	2.78	2.32	1.95	2.42	0.36	0.58	2.48	2.78 @ 0F
1995	0.0	100.0	0.0	2.04	1.75	1.51	1.30	1.50	3.26	2.87	2.55	2.27	2.80	0.41	0.72	2.48	2.33 @ 25F
1995	100.0	0.0	100.0	19.23	9.18	4.45	2.19	2.07	29.00	14.59	7.40	3.79	3.43	0.52	1.00	2.48	1.96 @ 50F
1995	50.0	0.0	50.0	9.44	4.86	2.63	1.53	1.61	14.75	8.02	4.57	2.76	2.86	0.42	0.74	2.48	1.65 @ 75F
1995	0.0	50.0	0.0	1.94	1.62	1.36	1.15	1.36	3.30	2.81	2.41	2.09	2.58	0.37	0.63	2.48	2.03 @100F
1995	50.0	50.0	50.0	10.63	5.47	2.98	1.75	1.79	16.13	8.73	4.97	3.03	3.12	0.46	0.86	2.48	
1995	20.6	27.3	20.6	5.00	2.94	1.88	1.29	1.46	8.02	4.97	3.31	2.36	2.70	0.39	0.67	2.48	
2000	0.0	0.0	0.0	1.50	1.22	0.99	0.80	0.92	2.47	2.00	1.62	1.32	1.54	0.28	0.41	2.20	1.92 @ 0F
2000	0.0	100.0	0.0	1.69	1.43	1.21	1.02	1.08	2.59	2.19	1.86	1.59	1.76	0.31	0.49	2.20	1.57 @ 25F
2000	100.0	0.0	100.0	12.39	6.28	3.21	1.66	1.63	20.77	10.23	5.08	2.54	2.43	0.41	0.70	2.20	1.28 @ 50F
2000	50.0	0.0	50.0	6.20	3.38	1.93	1.15	1.21	10.56	5.63	3.14	1.85	1.92	0.33	0.52	2.20	1.05 @ 75F
2000	0.0	50.0	0.0	1.56	1.29	1.06	0.88	0.97	2.50	2.06	1.71	1.42	1.62	0.29	0.44	2.20	1.26 @100F
2000	50.0	50.0	50.0	7.04	3.85	2.21	1.34	1.36	11.68	6.21	3.47	2.06	2.10	0.36	0.60	2.20	
2000	20.6	27.3	20.6	3.45	2.14	1.41	0.99	1.06	5.81	3.53	2.29	1.59	1.74	0.31	0.47	2.20	
2005	0.0	0.0	0.0	1.32	1.07	0.87	0.70	0.77	2.11	1.68	1.33	1.06	1.16	0.21	0.32	2.10	1.55 @ 0F
2005	0.0	100.0	0.0	1.52	1.28	1.08	0.91	0.92	2.27	1.88	1.55	1.29	1.30	0.23	0.36	2.10	1.23 @ 25F
2005	100.0	0.0	100.0	9.59	5.11	2.74	1.48	1.48	15.47	7.78	3.93	1.99	1.99	0.32	0.53	2.10	0.96 @ 50F
2005	50.0	0.0	50.0	4.84	2.78	1.65	1.02	1.05	7.99	4.36	2.46	1.46	1.51	0.25	0.40	2.10	0.75 @ 75F
2005	0.0	50.0	0.0	1.37	1.13	0.94	0.77	0.81	2.15	1.74	1.41	1.15	1.21	0.21	0.33	2.10	0.89 @100F
2005	50.0	50.0	50.0	5.56	3.20	1.91	1.19	1.20	8.87	4.83	2.74	1.64	1.64	0.27	0.44	2.10	
2005	20.6	27.3	20.6	2.78	1.79	1.22	0.87	0.91	4.54	2.81	1.84	1.27	1.33	0.23	0.35	2.10	
2010	0.0	0.0	0.0	1.25	1.02	0.83	0.67	0.74	1.98	1.56	1.24	0.98	1.07	0.19	0.30	2.08	1.49 @ 0F
2010	0.0	100.0	0.0	1.45	1.22	1.03	0.87	0.88	2.14	1.77	1.46	1.20	1.21	0.21	0.34	2.08	1.14 @ 25F
2010	100.0	0.0	100.0	8.57	4.70	2.58	1.42	1.42	14.06	7.13	3.62	1.84	1.84	0.29	0.51	2.08	0.87 @ 50F
2010	50.0	0.0	50.0	4.34	2.56	1.55	0.97	1.01	7.29	4.00	2.27	1.35	1.40	0.23	0.38	2.08	0.66 @ 75F
2010	0.0	50.0	0.0	1.30	1.08	0.89	0.74	0.78	2.02	1.63	1.32	1.06	1.12	0.19	0.31	2.08	0.73 @100F
2010	50.0	50.0	50.0	5.01	2.96	1.81	1.14	1.15	8.10	4.45	2.54	1.52	1.53	0.25	0.43	2.08	
2010	20.6	27.3	20.6	2.53	1.67	1.15	0.83	0.86	4.16	2.59	1.70	1.17	1.22	0.21	0.34	2.08	
2020	0.0	0.0	0.0	1.23	1.00	0.81	0.66	0.72	1.93	1.52	1.20	0.94	1.03	0.20	0.32	2.08	1.48 @ 0F
2020	0.0	100.0	0.0	1.43	1.21	1.02	0.86	0.87	2.09	1.72	1.41	1.16	1.17	0.22	0.36	2.08	1.14 @ 25F
2020	100.0	0.0	100.0	8.35	4.61	2.55	1.40	1.40	12.82	6.62	3.42	1.76	1.76	0.30	0.54	2.08	0.87 @ 50F
2020	50.0	0.0	50.0	4.23	2.51	1.53	0.96	0.99	6.70	3.74	2.16	1.29	1.34	0.24	0.40	2.08	0.66 @ 75F
2020	0.0	50.0	0.0	1.28	1.06	0.88	0.73	0.76	1.97	1.58	1.27	1.03	1.08	0.20	0.33	2.08	0.73 @100F
2020	50.0	50.0	50.0	4.89	2.91	1.78	1.13	1.14	7.45	4.17	2.41	1.46	1.47	0.26	0.45	2.08	
2020	20.6	27.3	20.6	2.47	1.64	1.13	0.81	0.85	3.89	2.45	1.63	1.13	1.18	0.22	0.36	2.08	

TABLE 1.28: EXHAUST NMHC AT 65.0 MPH

TABLE 1.29

HIGH ALTITUDE

EXHAUST CO EMISSION FACTORS (GRAMS/MILE) AT 2.5 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	349.06	265.23	203.53	157.87	366.18	464.41	365.54	290.94	234.30	507.77	5.58	9.57	71.18	960.79 @ 0F
1990	0.0	100.0	0.0	308.07	262.56	226.85	198.85	332.95	398.20	350.24	312.52	282.93	489.52	9.34	17.21	71.18	873.38 @ 25F
1990	100.0	0.0	100.0	1901.03	1183.82	715.77	383.08	320.57	2692.84	1659.88	1033.34	630.60	509.92	12.86	20.91	71.18	795.22 @ 50F
1990	50.0	0.0	50.0	964.97	631.89	408.67	247.64	350.92	1385.42	904.30	602.95	403.50	516.62	8.27	13.75	71.18	725.24 @ 75F
1990	0.0	50.0	0.0	336.05	266.60	214.54	175.37	355.88	443.54	363.86	303.14	256.68	504.71	6.95	12.36	71.18	1169.70 @100F
1990	50.0	50.0	50.0	1104.55	723.19	471.31	290.96	326.76	1545.52	1005.06	672.93	456.77	499.72	11.10	19.06	71.18	
1990	20.6	27.3	20.6	594.02	416.07	293.53	204.18	354.66	835.87	589.38	428.44	318.15	513.63	7.41	12.78	71.18	
1995	0.0	0.0	0.0	278.70	197.71	141.04	101.28	160.15	392.81	286.51	210.97	156.96	273.17	5.45	10.21	64.53	646.65 @ 0F
1995	0.0	100.0	0.0	273.56	221.06	179.63	146.93	201.70	368.58	305.41	255.27	215.45	317.86	9.22	18.52	64.53	579.91 @ 25F
1995	100.0	0.0	100.0	924.21	641.76	419.79	230.71	223.98	1418.98	964.65	658.30	433.17	405.39	13.08	22.45	64.53	521.24 @ 50F
1995	50.0	0.0	50.0	525.98	368.53	248.79	151.75	185.07	815.63	566.95	397.92	275.38	333.08	8.27	14.73	64.53	469.59 @ 75F
1995	0.0	50.0	0.0	274.89	205.95	155.79	119.10	176.74	385.64	296.69	231.23	182.74	294.93	6.82	13.25	64.53	789.58 @100F
1995	50.0	50.0	50.0	598.88	431.41	299.71	188.82	212.84	893.78	635.03	456.79	324.31	361.63	11.15	20.49	64.53	
1995	20.6	27.3	20.6	377.31	271.74	192.92	131.49	179.30	567.35	410.78	301.52	221.84	313.20	7.34	13.69	64.53	
2000	0.0	0.0	0.0	237.79	163.60	112.74	77.84	97.61	331.88	228.11	157.65	109.62	153.64	4.48	7.84	60.88	415.64 @ 0F
2000	0.0	100.0	0.0	234.43	187.48	150.15	120.46	151.97	300.25	242.34	196.32	159.73	211.80	7.44	14.05	60.88	368.26 @ 25F
2000	100.0	0.0	100.0	512.43	385.35	273.95	170.96	175.81	794.36	580.72	413.43	271.37	272.11	10.47	17.09	60.88	327.00 @ 50F
2000	50.0	0.0	50.0	328.78	238.54	167.67	109.16	122.80	504.86	361.10	255.31	172.66	198.92	6.69	11.25	60.88	291.01 @ 75F
2000	0.0	50.0	0.0	225.04	164.82	121.57	90.34	114.18	309.23	227.08	168.59	126.61	173.68	5.55	10.11	60.88	465.35 @100F
2000	50.0	50.0	50.0	373.43	286.42	212.05	145.71	163.89	547.31	411.53	304.88	215.55	241.96	8.95	15.57	60.88	
2000	20.6	27.3	20.6	266.54	193.80	139.21	96.89	116.32	391.00	282.48	204.00	145.07	183.80	5.96	10.45	60.88	
2005	0.0	0.0	0.0	223.96	152.90	104.40	71.28	76.64	313.12	207.45	137.58	91.34	99.92	3.71	6.54	59.46	276.69 @ 0F
2005	0.0	100.0	0.0	224.88	178.94	142.39	113.32	137.41	272.95	217.73	173.73	138.66	168.90	5.96	11.57	59.46	243.02 @ 25F
2005	100.0	0.0	100.0	354.70	287.90	221.11	154.31	163.06	499.99	400.82	301.64	202.46	214.72	8.27	14.12	59.46	213.96 @ 50F
2005	50.0	0.0	50.0	255.69	191.22	139.51	96.50	102.73	364.93	268.62	192.40	129.46	139.18	5.39	9.33	59.46	188.86 @ 75F
2005	0.0	50.0	0.0	208.75	151.78	111.00	81.65	93.49	280.09	199.71	143.68	104.33	120.84	4.53	8.38	59.46	270.08 @100F
2005	50.0	50.0	50.0	289.79	233.42	181.75	133.82	150.24	386.47	309.27	237.68	170.56	191.81	7.11	12.85	59.46	
2005	20.6	27.3	20.6	226.63	166.47	121.26	86.46	95.61	315.14	227.47	162.84	113.74	127.12	4.83	8.67	59.46	
2010	0.0	0.0	0.0	219.78	150.04	102.44	69.93	74.73	305.16	200.33	131.55	86.42	92.35	3.49	6.21	59.03	236.56 @ 0F
2010	0.0	100.0	0.0	220.38	175.64	139.98	111.56	135.12	257.03	204.85	163.26	130.11	157.59	5.57	10.96	59.03	203.51 @ 25F
2010	100.0	0.0	100.0	316.58	261.63	206.69	151.75	160.25	454.79	363.28	271.77	180.26	190.35	7.66	13.39	59.03	175.08 @ 50F
2010	50.0	0.0	50.0	237.64	178.58	132.00	93.94	99.70	339.38	246.97	174.69	115.61	122.70	5.03	8.86	59.03	150.62 @ 75F
2010	0.0	50.0	0.0	203.14	147.73	108.07	79.53	90.70	266.02	188.08	134.20	96.66	110.18	4.25	7.95	59.03	195.13 @100F
2010	50.0	50.0	50.0	268.48	218.64	173.34	131.65	147.68	355.91	284.06	217.51	155.18	173.97	6.62	12.18	59.03	
2010	20.6	27.3	20.6	215.82	158.84	116.41	84.11	92.68	295.58	211.13	149.51	103.16	113.60	4.53	8.22	59.03	
2020	0.0	0.0	0.0	218.53	149.26	101.94	69.63	74.40	302.35	197.73	129.31	84.57	90.37	3.54	6.29	58.94	229.59 @ 0F
2020	0.0	100.0	0.0	219.54	174.97	139.44	111.13	134.60	250.08	199.31	158.84	126.59	153.32	5.68	11.13	58.94	197.51 @ 25F
2020	100.0	0.0	100.0	305.82	254.30	202.79	151.27	159.74	429.71	343.03	256.36	169.68	179.18	7.85	13.59	58.94	169.92 @ 50F
2020	50.0	0.0	50.0	232.51	175.06	129.98	93.34	99.06	326.42	236.26	166.28	109.49	116.21	5.13	8.98	58.94	146.18 @ 75F
2020	0.0	50.0	0.0	201.65	146.68	107.31	78.98	90.07	260.42	183.45	130.45	93.65	106.71	4.32	8.06	58.94	189.38 @100F
2020	50.0	50.0	50.0	262.68	214.63	171.12	131.20	147.17	339.89	271.17	207.60	148.14	166.25	6.76	12.36	58.94	
2020	20.6	27.3	20.6	212.82	156.76	115.12	83.54	92.04	286.89	203.96	143.81	98.85	108.88	4.60	8.34	58.94	

TABLE 1.29: EXHAUST CO AT 2.5 MPH

TABLE 1.30

HIGH ALTITUDE

EXHAUST CO EMISSION FACTORS (GRAMS/MILE) AT 5.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	181.37	138.21	106.46	82.98	190.35	249.55	197.73	158.54	128.70	275.76	4.56	7.81	58.11	767.69 @ 0F
1990	0.0	100.0	0.0	159.54	136.22	117.95	103.68	173.39	209.12	185.03	166.16	151.44	263.14	7.62	14.05	58.11	697.85 @ 25F
1990	100.0	0.0	100.0	989.52	617.35	373.56	199.68	166.83	1444.42	888.97	551.62	334.76	267.15	10.50	17.07	58.11	635.40 @ 50F
1990	50.0	0.0	50.0	502.44	329.55	213.41	129.46	182.17	743.66	485.33	323.46	216.41	275.57	6.75	11.23	58.11	579.47 @ 75F
1990	0.0	50.0	0.0	174.14	138.48	111.79	91.72	184.88	235.56	194.37	162.98	138.97	272.31	5.67	10.09	58.11	934.61 @100F
1990	50.0	50.0	50.0	574.53	376.78	245.76	151.68	170.11	826.77	537.00	358.89	243.10	265.15	9.06	15.56	58.11	
1990	20.6	27.3	20.6	308.82	216.68	153.15	106.78	184.18	447.08	315.72	230.02	171.38	275.72	6.05	10.43	58.11	
1995	0.0	0.0	0.0	147.28	104.46	74.52	53.54	84.05	208.32	152.07	112.15	83.63	145.11	4.45	8.33	52.67	516.68 @ 0F
1995	0.0	100.0	0.0	144.44	116.75	94.90	77.66	106.43	193.12	160.25	134.18	113.50	167.94	7.52	15.12	52.67	463.35 @ 25F
1995	100.0	0.0	100.0	491.97	342.13	223.58	122.08	118.60	759.53	514.97	349.17	226.72	210.83	10.68	18.33	52.67	416.48 @ 50F
1995	50.0	0.0	50.0	278.89	195.52	131.87	80.10	97.29	434.35	301.26	210.53	144.55	174.40	6.75	12.02	52.67	375.21 @ 75F
1995	0.0	50.0	0.0	144.87	108.53	82.11	62.80	92.77	202.79	156.13	121.84	96.48	155.78	5.57	10.81	52.67	630.89 @100F
1995	50.0	50.0	50.0	318.20	229.44	159.24	99.87	112.51	476.32	337.61	241.68	170.11	189.38	9.10	16.72	52.67	
1995	20.6	27.3	20.6	199.52	143.72	101.97	69.37	94.16	300.44	217.26	159.15	116.72	164.70	5.99	11.17	52.67	
2000	0.0	0.0	0.0	130.15	89.47	61.60	42.49	52.90	181.78	124.74	86.08	59.77	83.28	3.65	6.40	49.69	332.10 @ 0F
2000	0.0	100.0	0.0	128.37	102.64	82.19	65.91	82.97	163.13	131.67	106.67	86.79	114.90	6.07	11.47	49.69	294.25 @ 25F
2000	100.0	0.0	100.0	279.78	210.84	149.99	93.49	96.28	432.43	316.01	224.17	145.75	146.06	8.55	13.95	49.69	261.28 @ 50F
2000	50.0	0.0	50.0	179.37	130.24	91.55	59.53	66.77	274.70	196.23	138.30	92.91	106.82	5.46	9.19	49.69	232.52 @ 75F
2000	0.0	50.0	0.0	122.96	90.00	66.35	49.27	61.96	168.31	123.43	91.53	68.68	93.86	4.53	8.25	49.69	371.82 @100F
2000	50.0	50.0	50.0	204.07	156.74	116.09	79.70	89.63	297.78	223.84	165.42	116.27	130.48	7.31	12.71	49.69	
2000	20.6	27.3	20.6	145.51	105.81	75.98	52.83	63.16	212.72	153.48	110.59	78.35	99.00	4.86	8.53	49.69	
2005	0.0	0.0	0.0	124.56	85.03	58.05	39.63	42.59	175.36	116.03	76.85	50.95	55.59	3.03	5.34	48.53	221.08 @ 0F
2005	0.0	100.0	0.0	125.06	99.52	79.20	63.04	76.43	152.18	121.38	96.84	77.27	94.07	4.87	9.44	48.53	194.18 @ 25F
2005	100.0	0.0	100.0	197.49	160.29	123.09	85.89	90.75	280.12	224.07	168.02	111.97	118.70	6.75	11.53	48.53	170.96 @ 50F
2005	50.0	0.0	50.0	142.18	106.32	77.56	53.64	57.09	204.04	149.88	107.03	71.62	76.90	4.40	7.62	48.53	150.90 @ 75F
2005	0.0	50.0	0.0	116.01	84.34	61.68	45.37	51.94	156.31	111.32	80.00	58.03	67.10	3.69	6.84	48.53	215.79 @100F
2005	50.0	50.0	50.0	161.27	129.90	101.15	74.46	83.59	216.15	172.73	132.43	94.62	106.38	5.81	10.49	48.53	
2005	20.6	27.3	20.6	125.97	92.53	67.39	48.05	53.12	175.98	126.82	90.60	63.08	70.39	3.94	7.07	48.53	
2010	0.0	0.0	0.0	122.86	83.88	57.26	39.10	41.78	172.91	113.47	74.49	48.91	52.26	2.85	5.07	48.19	189.02 @ 0F
2010	0.0	100.0	0.0	123.21	98.20	78.26	62.37	75.54	145.40	115.88	92.35	73.60	89.15	4.55	8.95	48.19	162.61 @ 25F
2010	100.0	0.0	100.0	177.03	146.30	115.58	84.86	89.61	257.32	205.43	153.54	101.66	107.35	6.26	10.93	48.19	139.89 @ 50F
2010	50.0	0.0	50.0	132.84	99.83	73.79	52.51	55.73	192.04	139.66	98.70	65.23	69.23	4.11	7.23	48.19	120.35 @ 75F
2010	0.0	50.0	0.0	113.54	82.57	60.41	44.45	50.70	150.56	106.41	75.90	54.66	62.30	3.47	6.49	48.19	155.91 @100F
2010	50.0	50.0	50.0	150.12	122.25	96.92	73.61	82.57	201.36	160.66	122.95	87.63	98.25	5.40	9.94	48.19	
2010	20.6	27.3	20.6	120.64	88.79	65.07	47.02	51.80	167.27	119.42	84.52	58.27	64.17	3.69	6.71	48.19	
2020	0.0	0.0	0.0	122.35	83.57	57.08	38.98	41.66	172.08	112.54	73.60	48.13	51.43	2.89	5.13	48.11	183.45 @ 0F
2020	0.0	100.0	0.0	122.91	97.96	78.07	62.22	75.36	142.33	113.43	90.40	72.05	87.26	4.64	9.09	48.11	157.82 @ 25F
2020	100.0	0.0	100.0	171.22	142.38	113.53	84.69	89.43	244.57	195.23	145.90	96.57	101.98	6.41	11.09	48.11	135.77 @ 50F
2020	50.0	0.0	50.0	130.18	98.01	72.77	52.26	55.46	185.78	134.47	94.64	62.31	66.14	4.19	7.33	48.11	116.80 @ 75F
2020	0.0	50.0	0.0	112.89	82.12	60.08	44.22	50.43	148.21	104.41	74.24	53.30	60.73	3.52	6.58	48.11	151.32 @100F
2020	50.0	50.0	50.0	147.07	120.17	95.80	73.46	82.40	193.45	154.33	118.15	84.31	94.62	5.52	10.09	48.11	
2020	20.6	27.3	20.6	119.15	87.76	64.45	46.77	51.53	163.28	116.08	81.85	56.26	61.97	3.76	6.80	48.11	

TABLE 1.30: EXHAUST CO AT 5.0 MPH

TABLE 1.31

HIGH ALTITUDE

EXHAUST CO EMISSION FACTORS (GRAMS/MILE) AT 10.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	94.40	71.93	55.43	43.26	97.44	130.84	103.95	83.64	68.18	144.09	3.14	5.39	40.07	510.75 @ 0F
1990	0.0	100.0	0.0	83.56	71.27	61.65	54.15	89.84	108.59	96.29	86.68	79.22	137.38	5.26	9.69	40.07	464.29 @ 25F
1990	100.0	0.0	100.0	515.18	323.30	196.12	104.25	87.60	755.19	465.76	288.70	173.87	138.11	7.24	11.77	40.07	422.74 @ 50F
1990	50.0	0.0	50.0	261.64	172.28	111.72	67.52	93.98	388.96	254.31	169.48	113.03	143.01	4.66	7.74	40.07	385.53 @ 75F
1990	0.0	50.0	0.0	90.72	72.12	58.22	47.80	94.98	122.72	101.51	85.37	73.04	141.98	3.91	6.96	40.07	621.80 @100F
1990	50.0	50.0	50.0	299.37	197.28	128.89	79.20	88.72	431.89	281.03	187.69	126.55	137.74	6.25	10.73	40.07	
1990	20.6	27.3	20.6	160.82	113.10	79.99	55.67	94.76	233.50	165.20	120.48	89.76	143.43	4.17	7.19	40.07	
1995	0.0	0.0	0.0	80.75	57.11	40.64	29.11	44.69	112.54	81.80	60.09	44.67	76.19	3.07	5.75	36.32	343.75 @ 0F
1995	0.0	100.0	0.0	79.48	64.18	52.10	42.57	57.86	103.66	85.89	71.81	60.65	89.15	5.19	10.42	36.32	308.27 @ 25F
1995	100.0	0.0	100.0	271.04	189.55	123.88	66.85	65.33	409.03	278.24	187.78	119.57	111.32	7.36	12.64	36.32	277.09 @ 50F
1995	50.0	0.0	50.0	152.87	107.46	72.39	43.58	52.43	232.97	161.68	112.46	76.18	91.38	4.66	8.29	36.32	249.63 @ 75F
1995	0.0	50.0	0.0	79.22	59.25	44.74	34.16	49.67	108.65	83.39	64.90	51.28	81.85	3.84	7.46	36.32	419.73 @100F
1995	50.0	50.0	50.0	175.26	126.86	87.99	54.71	61.59	256.34	182.07	129.80	90.11	100.24	6.28	11.53	36.32	
1995	20.6	27.3	20.6	109.23	78.73	55.76	37.72	50.51	160.95	116.27	84.84	61.72	86.35	4.13	7.70	36.32	
2000	0.0	0.0	0.0	76.14	52.25	35.91	24.72	30.20	105.58	72.09	49.49	34.18	46.46	2.52	4.41	34.27	220.95 @ 0F
2000	0.0	100.0	0.0	75.24	60.13	48.11	38.55	48.28	94.05	75.81	61.32	49.79	65.33	4.19	7.91	34.27	195.77 @ 25F
2000	100.0	0.0	100.0	162.35	122.98	87.69	54.58	56.42	245.55	180.33	127.68	81.89	82.40	5.89	9.62	34.27	173.83 @ 50F
2000	50.0	0.0	50.0	104.12	75.77	53.29	34.59	38.52	156.50	111.87	78.56	52.21	59.58	3.77	6.33	34.27	154.70 @ 75F
2000	0.0	50.0	0.0	71.77	52.47	38.63	28.64	35.58	96.99	70.85	52.34	39.12	52.56	3.13	5.69	34.27	247.38 @100F
2000	50.0	50.0	50.0	118.79	91.56	67.90	46.57	52.35	169.80	128.07	94.50	65.84	73.86	5.04	8.77	34.27	
2000	20.6	27.3	20.6	84.68	61.60	44.22	30.70	36.32	121.78	87.73	62.98	44.31	55.28	3.35	5.88	34.27	
2005	0.0	0.0	0.0	74.86	51.09	34.87	23.80	25.56	106.48	70.32	46.48	30.75	33.42	2.09	3.68	33.47	147.09 @ 0F
2005	0.0	100.0	0.0	75.14	59.81	47.61	37.90	45.94	91.80	73.21	58.39	46.58	56.65	3.36	6.51	33.47	129.19 @ 25F
2005	100.0	0.0	100.0	118.89	96.48	74.08	51.68	54.60	170.18	135.70	101.21	66.72	70.69	4.65	7.95	33.47	113.74 @ 50F
2005	50.0	0.0	50.0	85.43	63.88	46.59	32.21	34.27	123.59	90.51	64.34	42.71	45.76	3.03	5.25	33.47	100.40 @ 75F
2005	0.0	50.0	0.0	69.64	50.63	37.02	27.23	31.16	94.42	67.13	48.17	34.88	40.23	2.55	4.72	33.47	143.57 @100F
2005	50.0	50.0	50.0	97.01	78.15	60.84	44.79	50.27	130.99	104.45	79.80	56.65	63.67	4.01	7.23	33.47	
2005	20.6	27.3	20.6	75.65	55.56	40.46	28.84	31.87	106.40	76.50	54.47	37.75	42.03	2.72	4.88	33.47	
2010	0.0	0.0	0.0	74.40	50.79	34.68	23.67	25.30	106.78	70.04	45.95	30.15	32.22	1.97	3.49	33.22	125.76 @ 0F
2010	0.0	100.0	0.0	74.63	59.47	47.40	37.78	45.75	89.59	71.40	56.90	45.35	54.93	3.14	6.17	33.22	108.19 @ 25F
2010	100.0	0.0	100.0	107.25	88.64	70.03	51.41	54.29	158.58	126.51	94.43	62.36	65.85	4.31	7.54	33.22	93.07 @ 50F
2010	50.0	0.0	50.0	80.44	60.45	44.69	31.80	33.75	118.36	86.00	60.71	40.04	42.49	2.83	4.99	33.22	80.07 @ 75F
2010	0.0	50.0	0.0	68.75	50.00	36.57	26.92	30.69	92.83	65.58	46.76	33.65	38.36	2.39	4.47	33.22	103.73 @100F
2010	50.0	50.0	50.0	90.94	74.06	58.71	44.59	50.02	124.08	98.95	75.67	53.85	60.39	3.72	6.85	33.22	
2010	20.6	27.3	20.6	73.05	53.76	39.40	28.47	31.37	103.12	73.57	52.02	35.83	39.45	2.55	4.63	33.22	
2020	0.0	0.0	0.0	74.26	50.72	34.64	23.66	25.28	106.94	69.94	45.74	29.91	31.97	1.99	3.54	33.17	122.05 @ 0F
2020	0.0	100.0	0.0	74.60	59.45	47.38	37.76	45.74	88.46	70.50	56.18	44.78	54.23	3.20	6.27	33.17	105.00 @ 25F
2020	100.0	0.0	100.0	103.92	86.41	68.91	51.40	54.28	151.99	121.33	90.68	60.02	63.38	4.42	7.65	33.17	90.33 @ 50F
2020	50.0	0.0	50.0	79.01	59.49	44.17	31.72	33.66	115.46	83.57	58.81	38.73	41.11	2.89	5.05	33.17	77.71 @ 75F
2020	0.0	50.0	0.0	68.52	49.84	36.47	26.84	30.60	92.11	64.89	46.14	33.13	37.74	2.43	4.53	33.17	100.67 @100F
2020	50.0	50.0	50.0	89.26	72.93	58.15	44.58	50.01	120.23	95.92	73.43	52.40	58.81	3.81	6.96	33.17	
2020	20.6	27.3	20.6	72.32	53.27	39.12	28.39	31.27	101.48	72.14	50.87	34.96	38.51	2.59	4.69	33.17	

TABLE 1.31: EXHAUST CO AT 10.0 MPH

TABLE 1.32

HIGH ALTITUDE

EXHAUST CO EMISSION FACTORS (GRAMS/MILE) AT 19.6 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	52.74	40.27	31.15	24.43	53.53	76.28	61.08	49.58	40.80	84.77	1.75	3.00	22.29	272.51 @ 0F
1990	0.0	100.0	0.0	46.82	39.94	34.58	30.42	50.01	61.11	54.62	49.58	45.72	79.67	2.92	5.39	22.29	247.71 @ 25F
1990	100.0	0.0	100.0	288.45	182.44	111.01	58.53	49.44	438.92	270.56	166.78	98.98	77.17	4.03	6.55	22.29	225.55 @ 50F
1990	50.0	0.0	50.0	146.54	97.02	63.05	37.95	51.97	226.18	147.95	98.42	65.31	81.94	2.59	4.31	22.29	205.70 @ 75F
1990	0.0	50.0	0.0	50.58	40.27	32.60	26.86	52.30	70.20	58.50	49.60	42.81	82.69	2.18	3.87	22.29	331.76 @100F
1990	50.0	50.0	50.0	167.64	111.19	72.79	44.47	49.73	250.02	162.59	108.18	72.35	78.42	3.48	5.97	22.29	
1990	20.6	27.3	20.6	89.93	63.49	44.99	31.29	52.25	135.03	95.74	69.96	52.21	82.93	2.32	4.00	22.29	
1995	0.0	0.0	0.0	48.41	34.14	24.23	17.32	25.84	66.82	48.40	35.48	26.34	44.14	1.71	3.20	20.21	183.40 @ 0F
1995	0.0	100.0	0.0	47.79	38.56	31.28	25.53	34.36	60.44	50.08	41.89	35.40	51.87	2.89	5.80	20.21	164.48 @ 25F
1995	100.0	0.0	100.0	164.31	115.65	75.52	40.06	39.41	244.47	166.33	111.03	68.39	63.33	4.10	7.03	20.21	147.84 @ 50F
1995	50.0	0.0	50.0	91.90	64.80	43.56	25.90	30.76	137.99	95.59	65.89	43.68	51.98	2.59	4.61	20.21	133.19 @ 75F
1995	0.0	50.0	0.0	47.27	35.28	26.60	20.28	28.91	63.47	48.59	37.76	29.83	47.14	2.14	4.15	20.21	223.95 @100F
1995	50.0	50.0	50.0	106.05	77.11	53.40	32.80	36.88	152.45	108.21	76.46	51.90	57.60	3.49	6.42	20.21	
1995	20.6	27.3	20.6	65.43	47.19	33.35	22.40	29.48	94.68	68.23	49.49	35.59	49.38	2.30	4.29	20.21	
2000	0.0	0.0	0.0	49.77	34.09	23.38	16.05	19.22	68.68	46.66	31.86	21.89	29.05	1.40	2.46	19.07	117.89 @ 0F
2000	0.0	100.0	0.0	49.26	39.35	31.46	25.19	31.36	60.41	48.65	39.30	31.86	41.47	2.33	4.40	19.07	104.45 @ 25F
2000	100.0	0.0	100.0	105.28	80.20	57.31	35.60	36.93	156.26	115.13	81.12	51.00	51.45	3.28	5.35	19.07	92.75 @ 50F
2000	50.0	0.0	50.0	67.49	49.22	34.63	22.42	24.78	99.78	71.27	49.76	32.58	36.89	2.10	3.52	19.07	82.54 @ 75F
2000	0.0	50.0	0.0	46.76	34.14	25.09	18.58	22.77	62.38	45.38	33.39	24.86	32.85	1.74	3.17	19.07	131.98 @100F
2000	50.0	50.0	50.0	77.27	59.77	44.38	30.39	34.15	108.33	81.89	60.21	41.43	46.46	2.81	4.88	19.07	
2000	20.6	27.3	20.6	55.02	40.04	28.72	19.90	23.28	77.91	55.99	40.00	27.88	34.36	1.87	3.27	19.07	
2005	0.0	0.0	0.0	50.51	34.47	23.52	16.05	17.23	72.75	47.94	31.61	20.85	22.56	1.16	2.05	18.62	78.48 @ 0F
2005	0.0	100.0	0.0	50.70	40.36	32.13	25.58	31.01	62.23	49.61	39.56	31.55	38.32	1.87	3.62	18.62	68.93 @ 25F
2005	100.0	0.0	100.0	80.39	65.23	50.08	34.92	36.89	116.34	92.41	68.49	44.56	47.17	2.59	4.42	18.62	60.68 @ 50F
2005	50.0	0.0	50.0	57.63	43.08	31.42	21.72	23.10	84.19	61.44	43.43	28.54	30.50	1.69	2.92	18.62	53.56 @ 75F
2005	0.0	50.0	0.0	46.92	34.11	24.94	18.35	20.98	64.11	45.49	32.57	23.54	27.06	1.42	2.62	18.62	76.60 @100F
2005	50.0	50.0	50.0	65.54	52.79	41.10	30.25	33.95	89.28	71.01	54.02	38.06	42.75	2.23	4.02	18.62	
2005	20.6	27.3	20.6	51.00	37.45	27.27	19.43	21.47	72.32	51.85	36.78	25.34	28.13	1.51	2.71	18.62	
2010	0.0	0.0	0.0	50.67	34.59	23.61	16.12	17.23	74.40	48.77	31.97	20.97	22.41	1.09	1.95	18.49	67.10 @ 0F
2010	0.0	100.0	0.0	50.83	40.51	32.28	25.73	31.16	62.25	49.61	39.54	31.51	38.17	1.75	3.43	18.49	57.72 @ 25F
2010	100.0	0.0	100.0	73.08	60.40	47.71	35.03	36.99	110.22	87.85	65.48	43.11	45.52	2.40	4.19	18.49	49.66 @ 50F
2010	50.0	0.0	50.0	54.78	41.17	30.43	21.66	22.98	82.28	59.72	42.10	27.70	29.40	1.58	2.77	18.49	42.72 @ 75F
2010	0.0	50.0	0.0	46.81	34.04	24.90	18.32	20.90	64.56	45.58	32.48	23.37	26.63	1.33	2.49	18.49	55.34 @100F
2010	50.0	50.0	50.0	61.96	50.45	40.00	30.38	34.08	86.24	68.73	52.51	37.31	41.84	2.07	3.81	18.49	
2010	20.6	27.3	20.6	49.74	36.61	26.83	19.38	21.36	71.70	51.11	36.11	24.83	27.35	1.42	2.58	18.49	
2020	0.0	0.0	0.0	50.70	34.63	23.65	16.16	17.23	75.04	49.08	32.10	20.99	22.43	1.11	1.97	18.46	65.12 @ 0F
2020	0.0	100.0	0.0	50.94	40.59	32.35	25.78	31.23	62.07	49.47	39.42	31.42	38.06	1.78	3.49	18.46	56.02 @ 25F
2020	100.0	0.0	100.0	70.95	59.00	47.05	35.10	37.06	106.65	85.14	63.63	42.12	44.47	2.46	4.26	18.46	48.19 @ 50F
2020	50.0	0.0	50.0	53.95	40.62	30.16	21.66	22.98	81.02	58.64	41.27	27.17	28.84	1.61	2.81	18.46	41.46 @ 75F
2020	0.0	50.0	0.0	46.78	34.03	24.90	18.33	20.90	64.64	45.53	32.38	23.25	26.49	1.35	2.52	18.46	53.71 @100F
2020	50.0	50.0	50.0	60.94	49.80	39.70	30.44	34.15	84.36	67.30	51.53	36.77	41.26	2.12	3.87	18.46	
2020	20.6	27.3	20.6	49.38	36.37	26.71	19.38	21.35	71.21	50.62	35.69	24.53	27.02	1.44	2.61	18.46	

TABLE 1.32: EXHAUST CO AT 19.6 MPH

TABLE 1.33

HIGH ALTITUDE

EXHAUST CO EMISSION FACTORS (GRAMS/MILE) AT 35.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	33.66	25.66	19.84	15.58	32.53	52.48	42.09	34.23	28.24	56.36	0.97	1.66	12.36	151.93 @ 0F
1990	0.0	100.0	0.0	30.67	25.99	22.36	19.57	31.49	42.76	38.03	34.38	31.58	54.13	1.62	2.99	12.36	138.10 @ 25F
1990	100.0	0.0	100.0	177.19	113.18	69.26	36.40	31.01	288.77	180.25	112.91	68.62	54.45	2.23	3.63	12.36	125.74 @ 50F
1990	50.0	0.0	50.0	91.46	61.06	39.87	23.99	32.07	151.32	100.11	67.46	45.49	55.96	1.44	2.39	12.36	114.68 @ 75F
1990	0.0	50.0	0.0	32.72	25.98	20.98	17.27	32.30	48.79	40.63	34.43	29.71	55.62	1.21	2.15	12.36	184.96 @100F
1990	50.0	50.0	50.0	103.93	69.58	45.81	27.98	31.25	165.76	109.14	73.64	50.10	54.29	1.93	3.31	12.36	
1990	20.6	27.3	20.6	56.81	40.33	28.67	19.94	32.24	91.51	65.46	48.24	36.33	56.15	1.29	2.22	12.36	
1995	0.0	0.0	0.0	30.07	21.24	15.10	10.81	15.83	43.93	32.10	23.73	17.77	29.78	0.95	1.77	11.20	102.25 @ 0F
1995	0.0	100.0	0.0	29.74	23.96	19.40	15.81	21.18	40.15	33.31	27.90	23.63	34.75	1.60	3.21	11.20	91.70 @ 25F
1995	100.0	0.0	100.0	95.01	67.20	44.33	24.17	23.82	156.65	106.99	72.58	46.65	43.29	2.27	3.90	11.20	82.42 @ 50F
1995	50.0	0.0	50.0	54.98	38.94	26.40	16.02	18.90	90.15	62.81	43.91	29.99	35.63	1.44	2.56	11.20	74.25 @ 75F
1995	0.0	50.0	0.0	29.67	22.15	16.70	12.73	17.91	42.32	32.59	25.46	20.21	31.96	1.18	2.30	11.20	124.85 @100F
1995	50.0	50.0	50.0	62.38	45.58	31.86	19.99	22.50	98.40	70.15	50.24	35.14	39.02	1.93	3.56	11.20	
1995	20.6	27.3	20.6	39.98	28.93	20.57	13.97	18.20	62.47	45.30	33.21	24.32	33.71	1.27	2.38	11.20	
2000	0.0	0.0	0.0	26.69	18.30	12.56	8.64	10.40	39.93	27.34	18.83	13.06	17.66	0.78	1.36	10.57	65.72 @ 0F
2000	0.0	100.0	0.0	26.33	21.02	16.81	13.45	16.77	35.53	28.64	23.17	18.82	24.71	1.29	2.44	10.57	58.23 @ 25F
2000	100.0	0.0	100.0	55.20	42.03	30.09	18.81	19.50	91.57	67.52	48.05	31.09	31.29	1.82	2.97	10.57	51.71 @ 50F
2000	50.0	0.0	50.0	35.99	26.25	18.50	12.04	13.34	58.88	42.22	29.77	19.92	22.67	1.16	1.95	10.57	46.02 @ 75F
2000	0.0	50.0	0.0	25.23	18.43	13.56	10.04	12.35	36.72	26.87	19.89	14.89	19.96	0.96	1.75	10.57	73.58 @100F
2000	50.0	50.0	50.0	40.77	31.53	23.45	16.13	18.14	63.55	48.08	35.61	24.96	28.00	1.55	2.70	10.57	
2000	20.6	27.3	20.6	29.53	21.50	15.44	10.73	12.60	45.97	33.20	23.91	16.90	21.02	1.03	1.82	10.57	
2005	0.0	0.0	0.0	24.94	17.02	11.62	7.93	8.53	38.85	25.68	16.99	11.25	12.24	0.64	1.13	10.32	43.75 @ 0F
2005	0.0	100.0	0.0	25.00	19.90	15.83	12.60	15.28	33.58	26.78	21.36	17.04	20.73	1.03	2.01	10.32	38.43 @ 25F
2005	100.0	0.0	100.0	39.39	31.97	24.56	17.14	18.11	61.94	49.46	36.99	24.51	25.97	1.43	2.45	10.32	33.83 @ 50F
2005	50.0	0.0	50.0	28.44	21.26	15.51	10.73	11.42	45.09	33.07	23.55	15.69	16.83	0.94	1.62	10.32	29.86 @ 75F
2005	0.0	50.0	0.0	33.23	16.89	12.35	9.08	10.40	34.52	24.56	17.64	12.78	14.75	0.79	1.45	10.32	42.71 @100F
2005	50.0	50.0	50.0	22.20	25.93	20.19	14.87	16.69	47.76	38.12	29.17	20.77	23.35	1.24	2.23	10.32	
2005	20.6	27.3	20.6	25.22	18.52	13.49	9.61	10.63	38.87	27.97	19.95	13.85	15.44	0.84	1.50	10.32	
2010	0.0	0.0	0.0	24.28	16.58	11.32	7.73	8.26	38.48	25.25	16.57	10.88	11.63	0.61	1.08	10.25	37.41 @ 0F
2010	0.0	100.0	0.0	24.34	19.40	15.46	12.32	14.92	32.33	25.76	20.53	16.36	19.82	0.97	1.90	10.25	32.18 @ 25F
2010	100.0	0.0	100.0	34.95	28.88	22.82	16.75	17.69	57.16	45.63	34.09	22.55	23.82	1.33	2.32	10.25	27.68 @ 50F
2010	50.0	0.0	50.0	26.25	19.72	14.58	10.38	11.01	42.69	31.03	21.92	14.48	15.37	0.87	1.54	10.25	23.82 @ 75F
2010	0.0	50.0	0.0	22.44	16.32	11.94	8.79	10.02	33.49	23.66	16.88	12.15	13.85	0.74	1.38	10.25	30.85 @100F
2010	50.0	50.0	50.0	29.64	24.14	19.14	14.54	16.31	44.75	35.70	27.31	19.46	21.82	1.15	2.11	10.25	
2010	20.6	27.3	20.6	23.84	17.55	12.86	9.29	10.24	37.19	26.55	18.78	12.94	14.26	0.79	1.43	10.25	
2020	0.0	0.0	0.0	24.05	16.42	11.22	7.66	8.19	38.29	25.04	16.38	10.71	11.45	0.62	1.09	10.23	36.30 @ 0F
2020	0.0	100.0	0.0	24.16	19.25	15.34	12.23	14.81	31.67	25.24	20.12	16.03	19.42	0.99	1.93	10.23	31.23 @ 25F
2020	100.0	0.0	100.0	33.65	27.98	22.32	16.65	17.58	54.42	43.45	32.47	21.49	22.69	1.36	2.36	10.23	26.87 @ 50F
2020	50.0	0.0	50.0	25.59	19.26	14.30	10.27	10.90	41.34	29.92	21.06	13.87	14.72	0.89	1.56	10.23	23.11 @ 75F
2020	0.0	50.0	0.0	22.19	16.14	11.81	8.69	9.91	32.98	23.23	16.52	11.86	13.52	0.75	1.40	10.23	29.94 @100F
2020	50.0	50.0	50.0	28.91	23.62	18.83	14.44	16.19	43.05	34.34	26.29	18.76	21.06	1.17	2.15	10.23	
2020	20.6	27.3	20.6	23.42	17.25	12.67	9.19	10.13	36.34	25.83	18.21	12.52	13.79	0.80	1.45	10.23	

TABLE 1.33: EXHAUST CO AT 35.0 MPH

TABLE 1.34

HIGH ALTITUDE

EXHAUST CO EMISSION FACTORS (GRAMS/MILE) AT 55.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	27.63	21.08	16.34	12.87	26.20	45.84	36.87	30.07	24.88	49.04	0.86	1.47	10.94	154.99 @ 0F
1990	0.0	100.0	0.0	25.38	21.47	18.44	16.12	25.72	37.20	33.10	29.95	27.54	47.07	1.43	2.64	10.94	140.89 @ 25F
1990	100.0	0.0	100.0	142.21	91.19	55.92	29.36	25.02	247.04	154.68	97.42	59.86	47.58	1.98	3.21	10.94	128.28 @ 50F
1990	50.0	0.0	50.0	74.15	49.70	32.54	19.61	25.88	130.50	86.64	58.69	39.91	48.79	1.27	2.11	10.94	116.99 @ 75F
1990	0.0	50.0	0.0	26.99	21.43	17.32	14.27	26.17	42.60	35.53	30.17	26.08	48.40	1.07	1.90	10.94	188.69 @100F
1990	50.0	50.0	50.0	83.79	56.33	37.18	22.74	25.37	142.12	93.89	63.68	43.70	47.32	1.71	2.93	10.94	
1990	20.6	27.3	20.6	46.34	32.99	23.51	16.40	26.07	79.26	56.89	42.12	31.90	48.92	1.14	1.96	10.94	
1995	0.0	0.0	0.0	23.90	16.92	12.06	8.66	12.63	36.43	26.82	19.98	15.07	25.55	0.84	1.57	9.92	104.32 @ 0F
1995	0.0	100.0	0.0	23.61	19.00	15.38	12.54	16.81	33.30	27.69	23.26	19.76	29.31	1.42	2.85	9.92	93.55 @ 25F
1995	100.0	0.0	100.0	72.07	51.04	33.88	18.86	18.55	129.31	88.11	60.15	39.56	36.56	2.01	3.45	9.92	84.08 @ 50F
1995	50.0	0.0	50.0	42.73	30.31	20.67	12.73	14.99	75.06	52.34	36.84	25.58	30.46	1.27	2.26	9.92	75.75 @ 75F
1995	0.0	50.0	0.0	23.72	17.73	13.38	10.22	14.33	35.30	27.33	21.46	17.12	27.32	1.05	2.04	9.92	127.37 @100F
1995	50.0	50.0	50.0	47.84	35.02	24.63	15.70	17.68	81.30	57.90	41.70	29.66	32.94	1.71	3.15	9.92	
1995	20.6	27.3	20.6	31.48	22.82	16.29	11.17	14.52	52.10	37.89	27.95	20.69	28.84	1.13	2.10	9.92	
2000	0.0	0.0	0.0	18.82	12.92	8.89	6.12	7.47	30.17	20.81	14.45	10.10	14.02	0.69	1.21	9.35	67.05 @ 0F
2000	0.0	100.0	0.0	18.50	14.77	11.80	9.45	11.82	27.00	21.80	17.68	14.40	19.10	1.14	2.16	9.35	59.41 @ 25F
2000	100.0	0.0	100.0	38.33	29.11	20.85	13.10	13.55	70.37	51.69	36.95	24.38	24.41	1.61	2.63	9.35	52.75 @ 50F
2000	50.0	0.0	50.0	25.34	18.46	13.02	8.51	9.48	45.31	32.51	23.07	15.67	17.96	1.03	1.73	9.35	46.95 @ 75F
2000	0.0	50.0	0.0	17.89	13.08	9.63	7.14	8.85	27.98	20.59	15.32	11.54	15.74	0.85	1.55	9.35	75.07 @100F
2000	50.0	50.0	50.0	28.41	21.94	16.32	11.27	12.69	48.68	36.74	27.31	19.39	21.75	1.38	2.39	9.35	
2000	20.6	27.3	20.6	20.87	15.19	10.93	7.61	9.00	35.24	25.53	18.49	13.20	16.63	0.92	1.61	9.35	
2005	0.0	0.0	0.0	16.18	11.05	7.54	5.15	5.55	27.17	18.00	11.94	7.93	8.68	0.57	1.00	9.14	44.63 @ 0F
2005	0.0	100.0	0.0	16.20	12.89	10.25	8.15	9.89	23.71	18.91	15.09	12.04	14.66	0.92	1.78	9.14	39.20 @ 25F
2005	100.0	0.0	100.0	25.35	20.58	15.82	11.05	11.68	43.22	34.68	26.13	17.59	18.65	1.27	2.17	9.14	34.51 @ 50F
2005	50.0	0.0	50.0	18.44	13.79	10.06	6.96	7.42	31.63	23.29	16.70	11.26	12.10	0.83	1.43	9.14	30.47 @ 75F
2005	0.0	50.0	0.0	15.12	10.99	8.04	5.91	6.78	24.33	17.35	12.48	9.06	10.50	0.69	1.29	9.14	43.57 @100F
2005	50.0	50.0	50.0	20.78	16.74	13.03	9.60	10.78	33.46	26.79	20.61	14.81	16.66	1.09	1.97	9.14	
2005	20.6	27.3	20.6	16.39	12.04	8.77	6.25	6.92	27.34	19.74	14.14	9.89	11.05	0.74	1.33	9.14	
2010	0.0	0.0	0.0	15.25	10.41	7.11	4.85	5.18	26.16	17.18	11.28	7.41	7.92	0.54	0.95	9.07	38.16 @ 0F
2010	0.0	100.0	0.0	15.27	12.17	9.70	7.73	9.36	22.05	17.58	14.01	11.16	13.52	0.86	1.68	9.07	32.83 @ 25F
2010	100.0	0.0	100.0	21.90	18.09	14.30	10.50	11.08	38.95	31.13	23.31	15.49	16.36	1.18	2.06	9.07	28.24 @ 50F
2010	50.0	0.0	50.0	16.48	12.39	9.15	6.51	6.91	29.09	21.18	14.99	9.94	10.55	0.77	1.36	9.07	24.30 @ 75F
2010	0.0	50.0	0.0	14.10	10.26	7.50	5.52	6.30	22.82	16.14	11.52	8.30	9.46	0.65	1.22	9.07	31.48 @100F
2010	50.0	50.0	50.0	18.58	15.13	12.00	9.11	10.22	30.50	24.35	18.66	13.33	14.94	1.02	1.87	9.07	
2010	20.6	27.3	20.6	14.98	11.02	8.08	5.84	6.43	25.35	18.11	12.83	8.86	9.76	0.69	1.26	9.07	
2020	0.0	0.0	0.0	14.93	10.19	6.96	4.76	5.08	25.69	16.80	10.99	7.18	7.68	0.54	0.97	9.06	37.04 @ 0F
2020	0.0	100.0	0.0	14.99	11.95	9.52	7.59	9.19	21.25	16.93	13.49	10.76	13.03	0.87	1.71	9.06	31.86 @ 25F
2020	100.0	0.0	100.0	20.89	17.37	13.85	10.33	10.91	36.51	29.14	21.78	14.42	15.22	1.21	2.09	9.06	27.41 @ 50F
2020	50.0	0.0	50.0	15.88	11.96	8.88	6.38	6.77	27.73	20.07	14.13	9.30	9.87	0.79	1.38	9.06	23.58 @ 75F
2020	0.0	50.0	0.0	13.77	10.02	7.33	5.39	6.15	22.12	15.59	11.08	7.96	9.07	0.66	1.24	9.06	30.55 @100F
2020	50.0	50.0	50.0	17.94	14.66	11.69	8.96	10.05	28.88	23.04	17.64	12.59	14.12	1.04	1.90	9.06	
2020	20.6	27.3	20.6	14.54	10.71	7.86	5.70	6.29	24.37	17.33	12.22	8.40	9.25	0.71	1.28	9.06	

TABLE 1.34: EXHAUST CO AT 55.0 MPH

TABLE 1.35

HIGH ALTITUDE

EXHAUST CO EMISSION FACTORS (GRAMS/MILE) AT 65.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	83.98	64.68	50.56	40.17	85.24	150.43	121.68	99.72	82.84	166.29	1.06	1.82	13.52	217.76 @ 0F
1990	0.0	100.0	0.0	69.35	59.23	51.44	45.51	74.85	112.29	100.74	91.88	85.17	147.89	1.77	3.27	13.52	197.95 @ 25F
1990	100.0	0.0	100.0	403.17	254.08	155.47	84.69	70.45	767.22	474.90	297.73	185.11	144.50	2.44	3.97	13.52	180.23 @ 50F
1990	50.0	0.0	50.0	218.20	144.79	95.05	58.91	79.52	418.84	276.20	186.90	128.30	158.18	1.57	2.61	13.52	164.37 @ 75F
1990	0.0	50.0	0.0	78.45	62.82	51.22	42.59	81.39	135.06	113.37	96.81	84.15	159.00	1.32	2.35	13.52	265.11 @100F
1990	50.0	50.0	50.0	236.26	156.65	103.46	65.10	72.65	439.75	287.82	194.80	135.14	146.20	2.11	3.62	13.52	
1990	20.6	27.3	20.6	136.01	96.53	69.18	49.19	80.87	253.38	181.43	134.57	102.71	159.83	1.41	2.43	13.52	
1995	0.0	0.0	0.0	61.67	44.11	31.79	23.12	36.17	106.39	79.61	60.23	46.12	81.71	1.03	1.94	12.26	146.56 @ 0F
1995	0.0	100.0	0.0	55.31	44.72	36.41	29.91	41.40	89.73	75.26	63.85	54.86	83.84	1.75	3.52	12.26	131.43 @ 25F
1995	100.0	0.0	100.0	175.63	121.93	80.65	46.22	44.45	364.32	243.81	166.37	112.87	102.23	2.48	4.26	12.26	118.14 @ 50F
1995	50.0	0.0	50.0	108.77	76.46	52.22	32.86	39.79	219.61	152.02	107.44	76.31	92.05	1.57	2.80	12.26	106.43 @ 75F
1995	0.0	50.0	0.0	59.06	44.46	33.83	26.07	38.56	100.44	78.69	62.54	50.48	83.60	1.29	2.52	12.26	178.95 @100F
1995	50.0	50.0	50.0	115.47	83.32	58.53	38.07	42.92	227.02	159.54	115.11	83.87	93.04	2.12	3.89	12.26	
1995	20.6	27.3	20.6	79.53	57.55	41.27	28.72	38.97	150.79	109.70	81.53	61.41	87.79	1.39	2.60	12.26	
2000	0.0	0.0	0.0	41.40	28.58	19.77	13.71	17.81	71.68	50.35	35.64	25.43	38.29	0.85	1.49	11.56	94.20 @ 0F
2000	0.0	100.0	0.0	37.20	29.74	23.82	19.12	24.38	59.56	48.41	39.58	32.57	44.84	1.41	2.67	11.56	83.46 @ 25F
2000	100.0	0.0	100.0	80.44	59.96	42.58	26.86	27.44	167.92	120.43	85.82	58.31	57.19	1.99	3.25	11.56	74.11 @ 50F
2000	50.0	0.0	50.0	55.74	40.31	28.36	18.63	21.25	111.62	79.56	56.73	39.48	46.34	1.27	2.14	11.56	65.96 @ 75F
2000	0.0	50.0	0.0	38.46	28.22	20.86	15.53	20.06	65.62	48.93	36.92	28.21	40.83	1.05	1.92	11.56	105.47 @100F
2000	50.0	50.0	50.0	58.82	44.85	33.20	22.99	25.91	113.74	84.42	62.70	45.44	51.02	1.70	2.96	11.56	
2000	20.6	27.3	20.6	45.51	33.07	23.80	16.66	20.38	85.00	61.73	45.13	32.83	43.17	1.13	1.99	11.56	
2005	0.0	0.0	0.0	32.88	22.46	15.35	10.49	11.34	54.81	36.57	24.44	16.35	18.15	0.70	1.24	11.29	62.71 @ 0F
2005	0.0	100.0	0.0	30.35	24.11	19.15	15.22	18.48	44.90	35.84	28.61	22.85	27.94	1.13	2.20	11.29	55.08 @ 25F
2005	100.0	0.0	100.0	47.10	38.26	29.42	20.57	21.75	79.64	64.68	49.71	34.75	36.95	1.57	2.68	11.29	48.49 @ 50F
2005	50.0	0.0	50.0	36.69	27.45	20.04	13.89	14.83	62.81	46.73	34.02	23.54	25.49	1.02	1.77	11.29	42.80 @ 75F
2005	0.0	50.0	0.0	30.20	21.95	16.05	11.80	13.56	48.79	34.99	25.32	18.48	21.60	0.86	1.59	11.29	61.21 @100F
2005	50.0	50.0	50.0	38.72	31.18	24.28	17.90	20.12	62.27	50.26	39.16	28.80	32.44	1.35	2.44	11.29	
2005	20.6	27.3	20.6	32.76	24.06	17.53	12.51	13.88	54.74	39.83	28.83	20.46	23.05	0.92	1.65	11.29	
2010	0.0	0.0	0.0	29.80	20.34	13.88	9.48	10.13	49.15	32.33	21.28	14.01	14.97	0.66	1.18	11.21	53.62 @ 0F
2010	0.0	100.0	0.0	27.46	21.89	17.44	13.90	16.84	38.12	30.38	24.21	19.30	23.37	1.06	2.08	11.21	46.13 @ 25F
2010	100.0	0.0	100.0	39.35	32.52	25.69	18.86	19.92	67.25	53.88	40.52	27.15	28.67	1.46	2.54	11.21	39.68 @ 50F
2010	50.0	0.0	50.0	31.61	23.75	17.55	12.49	13.25	53.83	39.29	27.91	18.61	19.75	0.96	1.68	11.21	34.14 @ 75F
2010	0.0	50.0	0.0	27.05	19.67	14.39	10.59	12.08	42.19	29.88	21.35	15.40	17.56	0.81	1.51	11.21	44.22 @100F
2010	50.0	50.0	50.0	33.41	27.20	21.57	16.38	18.38	52.68	42.13	32.37	23.23	26.02	1.26	2.31	11.21	
2010	20.6	27.3	20.6	28.80	21.19	15.53	11.22	12.36	47.00	33.65	23.90	16.56	18.23	0.86	1.56	11.21	
2020	0.0	0.0	0.0	29.02	19.82	13.54	9.25	9.88	47.23	30.89	20.20	13.21	14.12	0.67	1.19	11.20	52.03 @ 0F
2020	0.0	100.0	0.0	26.87	21.41	17.07	13.60	16.47	35.65	28.41	22.64	18.05	21.86	1.08	2.12	11.20	44.76 @ 25F
2020	100.0	0.0	100.0	37.43	31.12	24.82	18.51	19.55	61.25	48.90	36.54	24.19	25.54	1.49	2.58	11.20	38.51 @ 50F
2020	50.0	0.0	50.0	30.35	22.85	16.96	12.18	12.93	50.00	36.19	25.47	16.77	17.80	0.97	1.71	11.20	33.13 @ 75F
2020	0.0	50.0	0.0	26.32	19.14	14.01	10.31	11.76	39.89	28.10	19.98	14.35	16.35	0.82	1.53	11.20	42.92 @100F
2020	50.0	50.0	50.0	32.15	26.27	20.94	16.06	18.01	48.45	38.65	29.59	21.12	23.70	1.28	2.35	11.20	
2020	20.6	27.3	20.6	27.84	20.51	15.06	10.93	12.04	44.06	31.32	22.09	15.18	16.72	0.88	1.58	11.20	

TABLE 1.35: EXHAUST CO AT 65.0 MPH

TABLE 1.36

HIGH ALTITUDE

EXHAUST NO<sub>x</sub> EMISSION FACTORS (GRAMS/MILE) AT 2.5 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	3.29	2.73	2.27	1.89	1.79	3.54	3.01	2.57	2.20	2.04	2.84	3.01	37.77	4.75 @ 0F
1990	0.0	100.0	0.0	4.62	3.82	3.16	2.63	2.32	5.03	4.26	3.62	3.10	2.68	2.78	3.54	37.77	4.41 @ 25F
1990	100.0	0.0	100.0	4.20	3.74	3.34	2.99	2.66	4.51	4.12	3.80	3.52	3.11	2.92	3.78	37.77	4.12 @ 50F
1990	50.0	0.0	50.0	3.81	3.30	2.86	2.49	2.28	4.15	3.69	3.30	2.98	2.68	2.88	3.36	37.77	3.85 @ 75F
1990	0.0	50.0	0.0	4.04	3.34	2.77	2.31	2.10	4.46	3.79	3.23	2.76	2.45	2.81	3.25	37.77	3.21 @100F
1990	50.0	50.0	50.0	4.41	3.78	3.25	2.81	2.49	4.77	4.19	3.71	3.31	2.90	2.85	3.66	37.77	
1990	20.6	27.3	20.6	3.91	3.30	2.79	2.37	2.16	4.30	3.72	3.24	2.83	2.54	2.84	3.28	37.77	
1995	0.0	0.0	0.0	3.42	2.84	2.37	1.98	2.06	3.60	3.04	2.57	2.18	2.21	2.91	3.03	25.42	4.14 @ 0F
1995	0.0	100.0	0.0	4.63	3.78	3.09	2.53	2.45	5.18	4.30	3.57	2.98	2.83	2.77	3.54	25.42	3.90 @ 25F
1995	100.0	0.0	100.0	4.14	3.71	3.33	2.98	2.88	4.72	4.27	3.87	3.52	3.35	2.90	3.77	25.42	3.68 @ 50F
1995	50.0	0.0	50.0	3.87	3.36	2.92	2.54	2.53	4.28	3.76	3.32	2.93	2.86	2.91	3.37	25.42	3.48 @ 75F
1995	0.0	50.0	0.0	4.12	3.39	2.80	2.31	2.31	4.53	3.78	3.17	2.66	2.60	2.85	3.26	25.42	3.08 @100F
1995	50.0	50.0	50.0	4.38	3.74	3.21	2.76	2.66	4.95	4.28	3.72	3.25	3.09	2.83	3.66	25.42	
1995	20.6	27.3	20.6	4.00	3.36	2.83	2.39	2.39	4.38	3.74	3.20	2.75	2.69	2.87	3.29	25.42	
2000	0.0	0.0	0.0	2.96	2.51	2.13	1.80	1.92	3.81	3.20	2.69	2.26	2.39	2.40	2.39	18.56	3.66 @ 0F
2000	0.0	100.0	0.0	3.91	3.23	2.67	2.20	2.19	5.31	4.34	3.55	2.90	2.86	2.30	2.81	18.56	3.48 @ 25F
2000	100.0	0.0	100.0	3.56	3.19	2.86	2.57	2.52	4.67	4.20	3.78	3.41	3.33	2.41	3.00	18.56	3.32 @ 50F
2000	50.0	0.0	50.0	3.34	2.92	2.55	2.24	2.27	4.33	3.78	3.30	2.89	2.92	2.40	2.66	18.56	3.17 @ 75F
2000	0.0	50.0	0.0	3.52	2.94	2.45	2.05	2.10	4.65	3.85	3.18	2.64	2.68	2.35	2.58	18.56	3.02 @100F
2000	50.0	50.0	50.0	3.73	3.21	2.76	2.39	2.36	4.99	4.27	3.66	3.15	3.09	2.35	2.90	18.56	
2000	20.6	27.3	20.6	3.43	2.92	2.49	2.12	2.17	4.48	3.79	3.21	2.72	2.76	2.37	2.60	18.56	
2005	0.0	0.0	0.0	2.69	2.31	1.98	1.70	1.82	3.72	3.14	2.65	2.24	2.41	1.98	1.99	13.83	3.35 @ 0F
2005	0.0	100.0	0.0	3.52	2.94	2.45	2.04	2.04	5.09	4.16	3.40	2.78	2.78	1.91	2.35	13.83	3.20 @ 25F
2005	100.0	0.0	100.0	3.29	2.95	2.65	2.38	2.35	4.39	3.94	3.54	3.18	3.15	2.01	2.52	13.83	3.05 @ 50F
2005	50.0	0.0	50.0	3.06	2.69	2.37	2.09	2.14	4.12	3.60	3.14	2.75	2.82	1.99	2.23	13.83	2.91 @ 75F
2005	0.0	50.0	0.0	3.18	2.69	2.27	1.91	1.98	4.47	3.71	3.07	2.55	2.63	1.94	2.15	13.83	2.93 @100F
2005	50.0	50.0	50.0	3.41	2.94	2.55	2.21	2.20	4.74	4.05	3.47	2.98	2.96	1.96	2.44	13.83	
2005	20.6	27.3	20.6	3.13	2.68	2.31	1.98	2.04	4.28	3.63	3.08	2.61	2.69	1.96	2.18	13.83	
2010	0.0	0.0	0.0	2.58	2.22	1.91	1.65	1.77	3.66	3.10	2.62	2.21	2.38	1.87	1.93	12.11	3.18 @ 0F
2010	0.0	100.0	0.0	3.37	2.82	2.36	1.98	1.98	5.01	4.09	3.34	2.73	2.73	1.81	2.28	12.11	3.03 @ 25F
2010	100.0	0.0	100.0	3.19	2.86	2.57	2.31	2.28	4.33	3.88	3.49	3.13	3.09	1.91	2.45	12.11	2.88 @ 50F
2010	50.0	0.0	50.0	2.95	2.60	2.29	2.02	2.07	4.05	3.54	3.10	2.71	2.77	1.89	2.16	12.11	2.75 @ 75F
2010	0.0	50.0	0.0	3.05	2.58	2.19	1.86	1.92	4.39	3.64	3.02	2.51	2.59	1.84	2.09	12.11	2.84 @100F
2010	50.0	50.0	50.0	3.28	2.84	2.47	2.14	2.13	4.67	3.99	3.41	2.93	2.91	1.86	2.37	12.11	
2010	20.6	27.3	20.6	3.00	2.59	2.23	1.92	1.98	4.21	3.56	3.02	2.57	2.65	1.86	2.11	12.11	
2020	0.0	0.0	0.0	2.54	2.19	1.89	1.63	1.75	3.56	3.02	2.56	2.17	2.33	1.90	1.97	11.39	3.00 @ 0F
2020	0.0	100.0	0.0	3.33	2.79	2.34	1.96	1.96	4.85	3.97	3.25	2.66	2.66	1.84	2.33	11.39	2.86 @ 25F
2020	100.0	0.0	100.0	3.16	2.83	2.54	2.28	2.26	4.15	3.73	3.34	3.00	2.97	1.94	2.50	11.39	2.72 @ 50F
2020	50.0	0.0	50.0	2.92	2.57	2.27	2.01	2.05	3.90	3.41	2.99	2.62	2.68	1.92	2.21	11.39	2.59 @ 75F
2020	0.0	50.0	0.0	3.01	2.55	2.16	1.84	1.90	4.26	3.54	2.94	2.44	2.53	1.87	2.13	11.39	2.68 @100F
2020	50.0	50.0	50.0	3.24	2.81	2.44	2.12	2.11	4.50	3.85	3.30	2.83	2.81	1.89	2.41	11.39	
2020	20.6	27.3	20.6	2.96	2.56	2.20	1.90	1.96	4.07	3.45	2.93	2.49	2.57	1.89	2.16	11.39	

TABLE 1.36: EXHAUST NO<sub>x</sub> AT 2.5 MPH

TABLE 1.37

HIGH ALTITUDE

EXHAUST NO<sub>x</sub> EMISSION FACTORS (GRAMS/MILE) AT 5.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	---HDGV---
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	2.76	2.29	1.91	1.60	1.49	2.94	2.51	2.15	1.84	1.69	2.55	2.71	33.95	4.87 @ 0F
1990	0.0	100.0	0.0	3.88	3.21	2.67	2.23	1.93	4.18	3.55	3.03	2.60	2.23	2.49	3.18	33.95	4.53 @ 25F
1990	100.0	0.0	100.0	3.55	3.15	2.81	2.51	2.20	3.76	3.44	3.17	2.94	2.58	2.63	3.40	33.95	4.22 @ 50F
1990	50.0	0.0	50.0	3.21	2.77	2.40	2.10	1.89	3.46	3.08	2.76	2.49	2.22	2.59	3.02	33.95	3.95 @ 75F
1990	0.0	50.0	0.0	3.38	2.81	2.34	1.95	1.75	3.71	3.16	2.70	2.32	2.04	2.52	2.92	33.95	3.29 @100F
1990	50.0	50.0	50.0	3.71	3.18	2.74	2.37	2.07	3.97	3.50	3.10	2.77	2.40	2.56	3.29	33.95	
1990	20.6	27.3	20.6	3.29	2.77	2.35	2.00	1.79	3.58	3.10	2.70	2.37	2.11	2.55	2.95	33.95	
1995	0.0	0.0	0.0	2.78	2.32	1.93	1.61	1.67	2.93	2.48	2.10	1.78	1.80	2.62	2.73	22.85	4.25 @ 0F
1995	0.0	100.0	0.0	3.77	3.08	2.52	2.07	2.00	4.22	3.50	2.91	2.43	2.31	2.49	3.18	22.85	4.00 @ 25F
1995	100.0	0.0	100.0	3.38	3.03	2.71	2.43	2.34	3.85	3.48	3.15	2.87	2.72	2.61	3.39	22.85	3.77 @ 50F
1995	50.0	0.0	50.0	3.15	2.74	2.38	2.07	2.06	3.48	3.06	2.70	2.39	2.33	2.61	3.03	22.85	3.57 @ 75F
1995	0.0	50.0	0.0	3.36	2.77	2.28	1.88	1.88	3.68	3.08	2.58	2.17	2.12	2.56	2.93	22.85	3.15 @100F
1995	50.0	50.0	50.0	3.58	3.05	2.62	2.25	2.17	4.03	3.49	3.03	2.65	2.52	2.55	3.29	22.85	
1995	20.6	27.3	20.6	3.26	2.74	2.31	1.95	1.95	3.57	3.05	2.61	2.25	2.19	2.58	2.96	22.85	
2000	0.0	0.0	0.0	2.40	2.03	1.72	1.46	1.55	3.08	2.59	2.18	1.83	1.93	2.16	2.15	16.69	3.75 @ 0F
2000	0.0	100.0	0.0	3.17	2.62	2.16	1.79	1.77	4.30	3.51	2.87	2.35	2.32	2.06	2.52	16.69	3.58 @ 25F
2000	100.0	0.0	100.0	2.88	2.58	2.32	2.08	2.04	3.78	3.40	3.06	2.76	2.69	2.17	2.69	16.69	3.41 @ 50F
2000	50.0	0.0	50.0	2.70	2.36	2.07	1.81	1.84	3.50	3.06	2.67	2.34	2.36	2.16	2.39	16.69	3.25 @ 75F
2000	0.0	50.0	0.0	2.85	2.38	1.99	1.66	1.70	3.77	3.11	2.58	2.13	2.17	2.11	2.32	16.69	3.10 @100F
2000	50.0	50.0	50.0	3.02	2.60	2.24	1.93	1.90	4.04	3.46	2.97	2.56	2.50	2.12	2.61	16.69	
2000	20.6	27.3	20.6	2.78	2.36	2.01	1.72	1.76	3.62	3.06	2.60	2.20	2.23	2.13	2.34	16.69	
2005	0.0	0.0	0.0	2.17	1.86	1.60	1.37	1.47	3.00	2.54	2.14	1.81	1.94	1.78	1.79	12.43	3.44 @ 0F
2005	0.0	100.0	0.0	2.84	2.37	1.98	1.65	1.65	4.11	3.36	2.74	2.24	2.24	1.72	2.11	12.43	3.28 @ 25F
2005	100.0	0.0	100.0	2.65	2.38	2.14	1.92	1.90	3.54	3.18	2.86	2.57	2.54	1.81	2.27	12.43	3.13 @ 50F
2005	50.0	0.0	50.0	2.47	2.17	1.91	1.68	1.73	3.32	2.90	2.54	2.22	2.27	1.79	2.00	12.43	2.98 @ 75F
2005	0.0	50.0	0.0	2.57	2.17	1.83	1.54	1.60	3.61	2.99	2.48	2.06	2.13	1.75	1.93	12.43	3.00 @100F
2005	50.0	50.0	50.0	2.75	2.38	2.06	1.78	1.77	3.83	3.27	2.80	2.40	2.39	1.76	2.19	12.43	
2005	20.6	27.3	20.6	2.52	2.16	1.86	1.60	1.65	3.45	2.93	2.48	2.11	2.17	1.76	1.96	12.43	
2010	0.0	0.0	0.0	2.08	1.79	1.54	1.33	1.43	2.95	2.50	2.11	1.79	1.92	1.68	1.74	10.89	3.27 @ 0F
2010	0.0	100.0	0.0	2.72	2.28	1.91	1.60	1.60	4.04	3.30	2.70	2.20	2.20	1.63	2.05	10.89	3.11 @ 25F
2010	100.0	0.0	100.0	2.57	2.31	2.07	1.86	1.84	3.49	3.13	2.81	2.53	2.50	1.72	2.20	10.89	2.96 @ 50F
2010	50.0	0.0	50.0	2.38	2.10	1.85	1.63	1.67	3.27	2.86	2.50	2.19	2.24	1.70	1.95	10.89	2.82 @ 75F
2010	0.0	50.0	0.0	2.46	2.08	1.77	1.50	1.55	3.54	2.94	2.44	2.02	2.09	1.65	1.88	10.89	2.91 @100F
2010	50.0	50.0	50.0	2.65	2.29	1.99	1.73	1.72	3.77	3.22	2.76	2.36	2.35	1.67	2.13	10.89	
2010	20.6	27.3	20.6	2.42	2.09	1.80	1.55	1.60	3.39	2.88	2.44	2.07	2.14	1.67	1.90	10.89	
2020	0.0	0.0	0.0	2.05	1.77	1.53	1.32	1.41	2.87	2.43	2.06	1.75	1.88	1.71	1.77	10.24	3.08 @ 0F
2020	0.0	100.0	0.0	2.68	2.25	1.89	1.58	1.58	3.91	3.20	2.62	2.15	2.15	1.65	2.09	10.24	2.93 @ 25F
2020	100.0	0.0	100.0	2.55	2.29	2.05	1.84	1.82	3.35	3.01	2.70	2.42	2.39	1.75	2.24	10.24	2.79 @ 50F
2020	50.0	0.0	50.0	2.36	2.08	1.83	1.62	1.66	3.15	2.76	2.41	2.11	2.16	1.73	1.99	10.24	2.66 @ 75F
2020	0.0	50.0	0.0	2.42	2.06	1.75	1.48	1.53	3.43	2.85	2.37	1.97	2.04	1.68	1.92	10.24	2.75 @100F
2020	50.0	50.0	50.0	2.62	2.27	1.97	1.71	1.70	3.63	3.10	2.66	2.28	2.27	1.70	2.17	10.24	
2020	20.6	27.3	20.6	2.39	2.06	1.78	1.54	1.59	3.28	2.79	2.37	2.01	2.08	1.70	1.94	10.24	

TABLE 1.37: EXHAUST NO<sub>x</sub> AT 5.0 MPH

TABLE 1.38

HIGH ALTITUDE

EXHAUST NO<sub>x</sub> EMISSION FACTORS (GRAMS/MILE) AT 10.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV- 0-100F			-LDDT- 0-100F			-HDDV- 0-100F			----HDGV----				
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0F	25F	50F	75F		100F	0F	25F	50F
1990	0.0	0.0	0.0	2.44	2.03	1.69	1.41	1.32	2.58	2.20	1.89	1.62	1.49	2.12	2.25	28.17											5.12 @ 0F
1990	0.0	100.0	0.0	3.43	2.85	2.37	1.98	1.72	3.67	3.12	2.67	2.29	1.97	2.07	2.64	28.17											4.76 @ 25F
1990	100.0	0.0	100.0	3.15	2.80	2.49	2.23	1.95	3.32	3.04	2.79	2.59	2.27	2.18	2.82	28.17											4.44 @ 50F
1990	50.0	0.0	50.0	2.84	2.46	2.13	1.86	1.67	3.05	2.71	2.43	2.19	1.96	2.14	2.51	28.17											4.15 @ 75F
1990	0.0	50.0	0.0	2.99	2.49	2.07	1.73	1.55	3.25	2.77	2.37	2.04	1.80	2.09	2.42	28.17											3.46 @100F
1990	50.0	50.0	50.0	3.29	2.82	2.43	2.10	1.83	3.50	3.08	2.73	2.44	2.12	2.13	2.73	28.17											
1990	20.6	27.3	20.6	2.91	2.46	2.08	1.77	1.59	3.14	2.73	2.38	2.09	1.85	2.12	2.45	28.17											
1995	0.0	0.0	0.0	2.45	2.04	1.70	1.42	1.47	2.59	2.18	1.85	1.57	1.59	2.17	2.26	18.96											4.46 @ 0F
1995	0.0	100.0	0.0	3.33	2.72	2.22	1.82	1.76	3.71	3.08	2.57	2.14	2.04	2.06	2.64	18.96											4.20 @ 25F
1995	100.0	0.0	100.0	2.98	2.67	2.39	2.15	2.06	3.39	3.07	2.78	2.53	2.40	2.16	2.81	18.96											3.96 @ 50F
1995	50.0	0.0	50.0	2.78	2.41	2.10	1.83	1.81	3.07	2.70	2.38	2.11	2.05	2.17	2.51	18.96											3.75 @ 75F
1995	0.0	50.0	0.0	2.96	2.44	2.01	1.66	1.65	3.24	2.72	2.28	1.91	1.87	2.12	2.43	18.96											3.32 @100F
1995	50.0	50.0	50.0	3.15	2.69	2.31	1.99	1.91	3.55	3.08	2.67	2.34	2.22	2.11	2.73	18.96											
1995	20.6	27.3	20.6	2.87	2.42	2.04	1.72	1.72	3.14	2.69	2.30	1.98	1.93	2.14	2.45	18.96											
2000	0.0	0.0	0.0	2.11	1.79	1.52	1.28	1.37	2.71	2.28	1.92	1.61	1.70	1.79	1.78	13.84											3.94 @ 0F
2000	0.0	100.0	0.0	2.79	2.30	1.90	1.57	1.56	3.79	3.09	2.53	2.07	2.04	1.71	2.09	13.84											3.76 @ 25F
2000	100.0	0.0	100.0	2.54	2.28	2.04	1.83	1.79	3.33	3.00	2.70	2.43	2.37	1.80	2.23	13.84											3.58 @ 50F
2000	50.0	0.0	50.0	2.38	2.08	1.82	1.60	1.62	3.09	2.69	2.36	2.06	2.08	1.79	1.99	13.84											3.41 @ 75F
2000	0.0	50.0	0.0	2.51	2.10	1.75	1.46	1.50	3.32	2.74	2.27	1.88	1.91	1.75	1.92	13.84											3.25 @100F
2000	50.0	50.0	50.0	2.66	2.29	1.97	1.70	1.68	3.56	3.05	2.61	2.25	2.21	1.75	2.16	13.84											
2000	20.6	27.3	20.6	2.45	2.08	1.77	1.51	1.55	3.19	2.70	2.29	1.94	1.97	1.77	1.94	13.84											
2005	0.0	0.0	0.0	1.91	1.64	1.41	1.21	1.29	2.64	2.23	1.88	1.59	1.71	1.47	1.48	10.31											3.62 @ 0F
2005	0.0	100.0	0.0	2.50	2.09	1.74	1.45	1.45	3.62	2.96	2.42	1.98	1.98	1.42	1.75	10.31											3.44 @ 25F
2005	100.0	0.0	100.0	2.34	2.10	1.88	1.69	1.67	3.12	2.80	2.52	2.26	2.23	1.50	1.88	10.31											3.29 @ 50F
2005	50.0	0.0	50.0	2.18	1.91	1.68	1.48	1.52	2.92	2.56	2.23	1.96	2.00	1.49	1.66	10.31											3.13 @ 75F
2005	0.0	50.0	0.0	2.26	1.91	1.61	1.36	1.40	3.18	2.63	2.18	1.81	1.87	1.45	1.61	10.31											3.15 @100F
2005	50.0	50.0	50.0	2.42	2.09	1.81	1.57	1.56	3.37	2.88	2.47	2.12	2.11	1.46	1.82	10.31											
2005	20.6	27.3	20.6	2.22	1.91	1.64	1.41	1.45	3.04	2.58	2.18	1.86	1.91	1.46	1.62	10.31											
2010	0.0	0.0	0.0	1.83	1.58	1.36	1.17	1.26	2.60	2.20	1.86	1.57	1.69	1.39	1.44	9.03											3.43 @ 0F
2010	0.0	100.0	0.0	2.40	2.01	1.68	1.41	1.41	3.56	2.90	2.37	1.94	1.94	1.35	1.70	9.03											3.27 @ 25F
2010	100.0	0.0	100.0	2.27	2.03	1.82	1.64	1.62	3.08	2.76	2.48	2.22	2.20	1.43	1.83	9.03											3.11 @ 50F
2010	50.0	0.0	50.0	2.10	1.85	1.63	1.44	1.47	2.88	2.51	2.20	1.92	1.97	1.41	1.61	9.03											2.96 @ 75F
2010	0.0	50.0	0.0	2.16	1.83	1.55	1.32	1.36	3.12	2.59	2.15	1.78	1.84	1.37	1.56	9.03											3.06 @100F
2010	50.0	50.0	50.0	2.33	2.02	1.75	1.52	1.51	3.32	2.83	2.43	2.08	2.07	1.39	1.76	9.03											
2010	20.6	27.3	20.6	2.13	1.84	1.58	1.37	1.41	2.99	2.53	2.15	1.83	1.88	1.39	1.58	9.03											
2020	0.0	0.0	0.0	1.81	1.56	1.34	1.16	1.25	2.53	2.14	1.82	1.54	1.66	1.42	1.47	8.49											3.24 @ 0F
2020	0.0	100.0	0.0	2.36	1.98	1.66	1.39	1.39	3.44	2.82	2.31	1.89	1.89	1.37	1.74	8.49											3.08 @ 25F
2020	100.0	0.0	100.0	2.24	2.01	1.81	1.62	1.60	2.95	2.65	2.38	2.13	2.11	1.45	1.86	8.49											2.93 @ 50F
2020	50.0	0.0	50.0	2.07	1.83	1.61	1.42	1.46	2.77	2.43	2.12	1.86	1.91	1.43	1.65	8.49											2.79 @ 75F
2020	0.0	50.0	0.0	2.13	1.81	1.54	1.30	1.35	3.02	2.51	2.09	1.74	1.80	1.40	1.59	8.49											2.88 @100F
2020	50.0	50.0	50.0	2.30	2.00	1.73	1.51	1.50	3.20	2.73	2.34	2.01	2.00	1.41	1.80	8.49											
2020	20.6	27.3	20.6	2.10	1.82	1.57	1.35	1.39	2.89	2.45	2.08	1.77	1.83	1.41	1.61	8.49											

TABLE 1.38: EXHAUST NO<sub>x</sub> AT 10.0 MPH

TABLE 1.39

HIGH ALTITUDE

EXHAUST NO<sub>x</sub> EMISSION FACTORS (GRAMS/MILE) AT 19.6 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	2.28	1.90	1.59	1.33	1.24	2.52	2.16	1.86	1.61	1.47	1.63	1.74	21.74	5.59 @ 0F
1990	0.0	100.0	0.0	3.21	2.66	2.22	1.86	1.62	3.58	3.06	2.63	2.27	1.94	1.60	2.04	21.74	5.20 @ 25F
1990	100.0	0.0	100.0	2.93	2.61	2.33	2.09	1.83	3.20	2.94	2.72	2.54	2.22	1.68	2.17	21.74	4.85 @ 50F
1990	50.0	0.0	50.0	2.65	2.30	2.00	1.75	1.57	2.95	2.64	2.38	2.16	1.92	1.65	1.93	21.74	4.54 @ 75F
1990	0.0	50.0	0.0	2.80	2.33	1.94	1.63	1.46	3.18	2.72	2.34	2.02	1.77	1.62	1.87	21.74	3.78 @100F
1990	50.0	50.0	50.0	3.07	2.64	2.28	1.98	1.73	3.39	3.00	2.67	2.40	2.08	1.64	2.11	21.74	
1990	20.6	27.3	20.6	2.72	2.30	1.95	1.66	1.50	3.06	2.67	2.34	2.07	1.82	1.63	1.89	21.74	
1995	0.0	0.0	0.0	2.29	1.91	1.59	1.33	1.38	2.45	2.07	1.76	1.49	1.50	1.68	1.75	14.63	4.88 @ 0F
1995	0.0	100.0	0.0	3.11	2.54	2.08	1.71	1.65	3.52	2.93	2.44	2.04	1.93	1.59	2.04	14.63	4.59 @ 25F
1995	100.0	0.0	100.0	2.78	2.49	2.24	2.01	1.93	3.20	2.90	2.63	2.40	2.28	1.67	2.17	14.63	4.33 @ 50F
1995	50.0	0.0	50.0	2.60	2.26	1.96	1.71	1.70	2.90	2.56	2.26	2.01	1.95	1.67	1.94	14.63	4.09 @ 75F
1995	0.0	50.0	0.0	2.77	2.28	1.88	1.55	1.55	3.08	2.58	2.17	1.83	1.77	1.64	1.88	14.63	3.62 @100F
1995	50.0	50.0	50.0	2.94	2.52	2.16	1.86	1.79	3.36	2.91	2.54	2.22	2.10	1.63	2.11	14.63	
1995	20.6	27.3	20.6	2.68	2.26	1.91	1.61	1.61	2.98	2.55	2.19	1.89	1.83	1.65	1.89	14.63	
2000	0.0	0.0	0.0	1.97	1.67	1.41	1.20	1.28	2.54	2.14	1.80	1.51	1.60	1.38	1.37	10.68	4.31 @ 0F
2000	0.0	100.0	0.0	2.61	2.15	1.78	1.47	1.46	3.55	2.90	2.38	1.95	1.91	1.32	1.62	10.68	4.10 @ 25F
2000	100.0	0.0	100.0	2.37	2.12	1.90	1.71	1.68	3.12	2.81	2.53	2.28	2.22	1.39	1.73	10.68	3.91 @ 50F
2000	50.0	0.0	50.0	2.22	1.94	1.70	1.49	1.51	2.89	2.52	2.21	1.94	1.95	1.38	1.53	10.68	3.73 @ 75F
2000	0.0	50.0	0.0	2.34	1.96	1.63	1.37	1.40	3.11	2.57	2.13	1.77	1.79	1.35	1.48	10.68	3.56 @100F
2000	50.0	50.0	50.0	2.49	2.14	1.84	1.59	1.57	3.33	2.86	2.45	2.11	2.07	1.36	1.67	10.68	
2000	20.6	27.3	20.6	2.28	1.94	1.66	1.41	1.45	2.99	2.53	2.15	1.82	1.85	1.37	1.50	10.68	
2005	0.0	0.0	0.0	1.79	1.53	1.31	1.13	1.21	2.47	2.08	1.76	1.49	1.60	1.14	1.14	7.96	3.95 @ 0F
2005	0.0	100.0	0.0	2.34	1.95	1.62	1.35	1.35	3.38	2.76	2.26	1.84	1.84	1.10	1.35	7.96	3.76 @ 25F
2005	100.0	0.0	100.0	2.18	1.96	1.76	1.58	1.56	2.91	2.62	2.35	2.11	2.09	1.16	1.45	7.96	3.59 @ 50F
2005	50.0	0.0	50.0	2.03	1.79	1.57	1.38	1.42	2.73	2.38	2.09	1.83	1.87	1.15	1.28	7.96	3.42 @ 75F
2005	0.0	50.0	0.0	2.11	1.78	1.50	1.27	1.31	2.96	2.46	2.04	1.69	1.75	1.12	1.24	7.96	3.45 @100F
2005	50.0	50.0	50.0	2.26	1.95	1.69	1.47	1.46	3.14	2.69	2.30	1.98	1.97	1.13	1.40	7.96	
2005	20.6	27.3	20.6	2.07	1.78	1.53	1.32	1.36	2.84	2.40	2.04	1.73	1.78	1.13	1.25	7.96	
2010	0.0	0.0	0.0	1.71	1.47	1.27	1.09	1.17	2.43	2.05	1.74	1.47	1.58	1.08	1.11	6.97	3.75 @ 0F
2010	0.0	100.0	0.0	2.24	1.87	1.57	1.31	1.31	3.32	2.71	2.22	1.81	1.81	1.04	1.31	6.97	3.57 @ 25F
2010	100.0	0.0	100.0	2.11	1.90	1.70	1.53	1.51	2.87	2.58	2.31	2.08	2.05	1.10	1.41	6.97	3.40 @ 50F
2010	50.0	0.0	50.0	1.96	1.73	1.52	1.34	1.37	2.69	2.35	2.05	1.80	1.84	1.09	1.25	6.97	3.23 @ 75F
2010	0.0	50.0	0.0	2.02	1.71	1.45	1.23	1.27	2.91	2.41	2.00	1.66	1.72	1.06	1.20	6.97	3.34 @100F
2010	50.0	50.0	50.0	2.17	1.88	1.63	1.42	1.41	3.09	2.64	2.26	1.94	1.93	1.07	1.36	6.97	
2010	20.6	27.3	20.6	1.99	1.71	1.48	1.27	1.32	2.79	2.36	2.01	1.70	1.76	1.07	1.22	6.97	
2020	0.0	0.0	0.0	1.69	1.45	1.25	1.08	1.16	2.36	2.00	1.70	1.44	1.55	1.10	1.13	6.56	3.54 @ 0F
2020	0.0	100.0	0.0	2.21	1.85	1.55	1.30	1.30	3.21	2.63	2.15	1.76	1.76	1.06	1.34	6.56	3.37 @ 25F
2020	100.0	0.0	100.0	2.09	1.88	1.69	1.51	1.50	2.75	2.47	2.22	1.99	1.97	1.12	1.44	6.56	3.20 @ 50F
2020	50.0	0.0	50.0	1.93	1.71	1.51	1.33	1.36	2.59	2.26	1.98	1.74	1.78	1.11	1.27	6.56	3.05 @ 75F
2020	0.0	50.0	0.0	1.99	1.69	1.43	1.22	1.26	2.82	2.35	1.95	1.62	1.68	1.08	1.23	6.56	3.15 @100F
2020	50.0	50.0	50.0	2.15	1.86	1.62	1.41	1.40	2.98	2.55	2.19	1.88	1.87	1.09	1.39	6.56	
2020	20.6	27.3	20.6	1.96	1.69	1.46	1.26	1.30	2.70	2.29	1.95	1.65	1.71	1.09	1.24	6.56	

TABLE 1.39: EXHAUST NO<sub>x</sub> AT 19.6 MPH

TABLE 1.40

HIGH ALTITUDE

EXHAUST NOx EMISSION FACTORS (GRAMS/MILE) AT 35.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV- 0-100F			-LDDT- 0-100F			-HDDV- 0-100F			----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0F	25F	50F	0F	25F	50F	0F	25F	50F	
1990	0.0	0.0	0.0	2.44	2.03	1.70	1.43	1.33	2.96	2.55	2.20	1.91	1.72	1.42	1.50	18.86							6.35 @ 0F
1990	0.0	100.0	0.0	3.41	2.83	2.36	1.98	1.72	4.17	3.58	3.09	2.69	2.27	1.39	1.77	18.86							5.91 @ 25F
1990	100.0	0.0	100.0	3.08	2.76	2.47	2.23	1.96	3.64	3.38	3.15	2.96	2.58	1.46	1.89	18.86							5.51 @ 50F
1990	50.0	0.0	50.0	2.81	2.44	2.13	1.87	1.69	3.41	3.07	2.78	2.54	2.25	1.44	1.68	18.86							5.15 @ 75F
1990	0.0	50.0	0.0	2.99	2.49	2.08	1.74	1.56	3.72	3.20	2.77	2.40	2.09	1.40	1.62	18.86							4.29 @100F
1990	50.0	50.0	50.0	3.24	2.79	2.42	2.10	1.84	3.90	3.48	3.12	2.82	2.42	1.42	1.83	18.86							
1990	20.6	27.3	20.6	2.90	2.45	2.09	1.78	1.61	3.57	3.12	2.75	2.44	2.14	1.42	1.64	18.86							
1995	0.0	0.0	0.0	2.45	2.04	1.70	1.42	1.47	2.68	2.27	1.93	1.64	1.64	1.46	1.51	12.69							5.54 @ 0F
1995	0.0	100.0	0.0	3.31	2.71	2.22	1.82	1.75	3.84	3.20	2.68	2.26	2.12	1.38	1.77	12.69							5.22 @ 25F
1995	100.0	0.0	100.0	2.96	2.65	2.38	2.14	2.06	3.46	3.14	2.86	2.62	2.47	1.45	1.88	12.69							4.92 @ 50F
1995	50.0	0.0	50.0	2.77	2.40	2.09	1.83	1.81	3.16	2.79	2.47	2.20	2.12	1.45	1.68	12.69							4.65 @ 75F
1995	0.0	50.0	0.0	2.95	2.43	2.01	1.66	1.65	3.37	2.83	2.39	2.02	1.94	1.42	1.63	12.69							4.11 @100F
1995	50.0	50.0	50.0	3.13	2.68	2.30	1.98	1.91	3.65	3.17	2.77	2.44	2.29	1.41	1.83	12.69							
1995	20.6	27.3	20.6	2.86	2.41	2.03	1.72	1.72	3.25	2.79	2.40	2.08	2.00	1.43	1.64	12.69							
2000	0.0	0.0	0.0	2.09	1.77	1.50	1.27	1.36	2.65	2.23	1.87	1.58	1.66	1.20	1.19	9.27							4.89 @ 0F
2000	0.0	100.0	0.0	2.76	2.28	1.88	1.56	1.54	3.69	3.03	2.48	2.04	2.00	1.15	1.40	9.27							4.66 @ 25F
2000	100.0	0.0	100.0	2.51	2.25	2.02	1.81	1.78	3.25	2.93	2.64	2.38	2.32	1.20	1.50	9.27							4.44 @ 50F
2000	50.0	0.0	50.0	2.36	2.06	1.80	1.58	1.61	3.01	2.63	2.31	2.03	2.03	1.20	1.33	9.27							4.24 @ 75F
2000	0.0	50.0	0.0	2.48	2.07	1.73	1.45	1.48	3.24	2.68	2.23	1.85	1.87	1.17	1.29	9.27							4.04 @100F
2000	50.0	50.0	50.0	2.64	2.27	1.95	1.68	1.66	3.47	2.98	2.56	2.21	2.16	1.17	1.45	9.27							
2000	20.6	27.3	20.6	2.42	2.06	1.76	1.50	1.53	3.12	2.64	2.24	1.91	1.92	1.18	1.30	9.27							
2005	0.0	0.0	0.0	1.90	1.63	1.39	1.20	1.28	2.51	2.12	1.79	1.51	1.62	0.99	0.99	6.91							4.49 @ 0F
2005	0.0	100.0	0.0	2.48	2.07	1.73	1.44	1.44	3.43	2.80	2.29	1.87	1.87	0.95	1.17	6.91							4.28 @ 25F
2005	100.0	0.0	100.0	2.32	2.08	1.87	1.67	1.66	2.96	2.66	2.39	2.14	2.12	1.00	1.26	6.91							4.08 @ 50F
2005	50.0	0.0	50.0	2.16	1.90	1.67	1.47	1.51	2.78	2.42	2.12	1.86	1.90	0.99	1.11	6.91							3.89 @ 75F
2005	0.0	50.0	0.0	2.24	1.89	1.60	1.35	1.39	3.01	2.50	2.07	1.72	1.77	0.97	1.08	6.91							3.92 @100F
2005	50.0	50.0	50.0	2.40	2.08	1.80	1.56	1.55	3.20	2.73	2.34	2.01	2.00	0.98	1.22	6.91							
2005	20.6	27.3	20.6	2.20	1.89	1.63	1.40	1.44	2.89	2.44	2.07	1.76	1.82	0.98	1.09	6.91							
2010	0.0	0.0	0.0	1.82	1.56	1.35	1.16	1.25	2.45	2.07	1.75	1.48	1.59	0.93	0.96	6.05							4.26 @ 0F
2010	0.0	100.0	0.0	2.38	1.99	1.66	1.39	1.39	3.35	2.74	2.24	1.83	1.83	0.90	1.14	6.05							4.05 @ 25F
2010	100.0	0.0	100.0	2.25	2.02	1.81	1.62	1.61	2.90	2.61	2.34	2.10	2.07	0.96	1.22	6.05							3.86 @ 50F
2010	50.0	0.0	50.0	2.08	1.83	1.62	1.43	1.46	2.72	2.37	2.07	1.82	1.86	0.94	1.08	6.05							3.67 @ 75F
2010	0.0	50.0	0.0	2.15	1.82	1.54	1.31	1.35	2.94	2.44	2.02	1.68	1.74	0.92	1.04	6.05							3.80 @100F
2010	50.0	50.0	50.0	2.31	2.00	1.74	1.51	1.50	3.13	2.67	2.29	1.96	1.95	0.93	1.18	6.05							
2010	20.6	27.3	20.6	2.11	1.82	1.57	1.36	1.40	2.82	2.39	2.03	1.72	1.77	0.93	1.05	6.05							
2020	0.0	0.0	0.0	1.79	1.54	1.33	1.15	1.24	2.37	2.01	1.71	1.45	1.55	0.95	0.99	5.69							4.02 @ 0F
2020	0.0	100.0	0.0	2.34	1.96	1.65	1.38	1.38	3.23	2.65	2.17	1.77	1.77	0.92	1.16	5.69							3.83 @ 25F
2020	100.0	0.0	100.0	2.22	2.00	1.79	1.61	1.59	2.77	2.49	2.23	2.00	1.98	0.97	1.25	5.69							3.64 @ 50F
2020	50.0	0.0	50.0	2.06	1.81	1.60	1.41	1.45	2.61	2.28	1.99	1.75	1.79	0.96	1.10	5.69							3.47 @ 75F
2020	0.0	50.0	0.0	2.12	1.80	1.52	1.29	1.34	2.84	2.36	1.96	1.63	1.69	0.94	1.07	5.69							3.58 @100F
2020	50.0	50.0	50.0	2.28	1.98	1.72	1.50	1.49	3.00	2.57	2.20	1.89	1.88	0.94	1.21	5.69							
2020	20.6	27.3	20.6	2.09	1.80	1.55	1.34	1.38	2.71	2.30	1.96	1.66	1.72	0.94	1.08	5.69							

TABLE 1.40: EXHAUST NOx AT 35.0 MPH

TABLE 1.41

HIGH ALTITUDE

EXHAUST NOx EMISSION FACTORS (GRAMS/MILE) AT 55.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-	-LDDT-	-HDDV-	----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	
1990	0.0	0.0	0.0	3.35	2.79	2.33	1.96	1.81	3.94	3.39	2.93	2.54	2.29	1.95	2.07	25.92	7.34 @ 0F
1990	0.0	100.0	0.0	4.73	3.93	3.29	2.76	2.38	5.82	5.01	4.33	3.77	3.17	1.90	2.43	25.92	6.82 @ 25F
1990	100.0	0.0	100.0	4.28	3.82	3.42	3.08	2.69	5.08	4.71	4.40	4.13	3.58	2.01	2.59	25.92	6.36 @ 50F
1990	50.0	0.0	50.0	3.86	3.35	2.92	2.56	2.29	4.61	4.15	3.76	3.43	3.02	1.97	2.30	25.92	5.95 @ 75F
1990	0.0	50.0	0.0	4.09	3.41	2.85	2.39	2.13	5.01	4.31	3.73	3.24	2.81	1.93	2.23	25.92	4.96 @100F
1990	50.0	50.0	50.0	4.51	3.88	3.36	2.92	2.54	5.45	4.86	4.36	3.95	3.38	1.96	2.51	25.92	
1990	20.6	27.3	20.6	3.97	3.36	2.86	2.44	2.18	4.81	4.21	3.71	3.29	2.88	1.95	2.25	25.92	
1995	0.0	0.0	0.0	3.22	2.68	2.23	1.86	1.92	3.54	3.00	2.55	2.17	2.17	2.00	2.08	17.44	6.40 @ 0F
1995	0.0	100.0	0.0	4.38	3.58	2.93	2.40	2.31	5.16	4.32	3.62	3.05	2.85	1.90	2.43	17.44	6.03 @ 25F
1995	100.0	0.0	100.0	3.89	3.49	3.13	2.81	2.69	4.64	4.22	3.85	3.52	3.31	1.99	2.59	17.44	5.69 @ 50F
1995	50.0	0.0	50.0	3.61	3.13	2.72	2.38	2.35	4.17	3.68	3.27	2.91	2.80	1.99	2.31	17.44	5.38 @ 75F
1995	0.0	50.0	0.0	3.87	3.18	2.62	2.17	2.15	4.45	3.74	3.15	2.67	2.56	1.95	2.24	17.44	4.75 @100F
1995	50.0	50.0	50.0	4.14	3.54	3.03	2.61	2.50	4.90	4.27	3.74	3.29	3.08	1.95	2.51	17.44	
1995	20.6	27.3	20.6	3.74	3.14	2.65	2.24	2.23	4.30	3.69	3.18	2.75	2.64	1.97	2.26	17.44	
2000	0.0	0.0	0.0	2.66	2.25	1.90	1.61	1.71	3.44	2.90	2.44	2.05	2.16	1.65	1.64	12.74	5.66 @ 0F
2000	0.0	100.0	0.0	3.53	2.91	2.40	1.99	1.97	4.83	3.96	3.25	2.67	2.61	1.57	1.92	12.74	5.39 @ 25F
2000	100.0	0.0	100.0	3.19	2.86	2.57	2.31	2.26	4.25	3.83	3.45	3.12	3.03	1.65	2.06	12.74	5.14 @ 50F
2000	50.0	0.0	50.0	2.97	2.59	2.27	1.99	2.02	3.90	3.41	2.99	2.63	2.63	1.65	1.83	12.74	4.90 @ 75F
2000	0.0	50.0	0.0	3.14	2.62	2.18	1.83	1.87	4.20	3.48	2.88	2.40	2.42	1.61	1.77	12.74	4.67 @100F
2000	50.0	50.0	50.0	3.36	2.89	2.49	2.15	2.11	4.54	3.89	3.35	2.89	2.82	1.62	1.99	12.74	
2000	20.6	27.3	20.6	3.05	2.60	2.21	1.89	1.93	4.04	3.42	2.91	2.47	2.49	1.63	1.78	12.74	
2005	0.0	0.0	0.0	2.36	2.02	1.73	1.49	1.60	3.21	2.71	2.29	1.93	2.07	1.36	1.37	9.49	5.18 @ 0F
2005	0.0	100.0	0.0	3.11	2.59	2.16	1.80	1.80	4.38	3.58	2.93	2.39	2.39	1.31	1.61	9.49	4.94 @ 25F
2005	100.0	0.0	100.0	2.89	2.60	2.33	2.09	2.07	3.78	3.40	3.05	2.74	2.71	1.38	1.73	9.49	4.71 @ 50F
2005	50.0	0.0	50.0	2.67	2.35	2.06	1.82	1.86	3.53	3.09	2.70	2.36	2.42	1.37	1.53	9.49	4.49 @ 75F
2005	0.0	50.0	0.0	2.78	2.34	1.97	1.67	1.72	3.84	3.18	2.64	2.19	2.26	1.33	1.48	9.49	4.53 @100F
2005	50.0	50.0	50.0	3.00	2.59	2.24	1.94	1.93	4.08	3.49	2.99	2.57	2.55	1.35	1.67	9.49	
2005	20.6	27.3	20.6	2.72	2.33	2.01	1.73	1.78	3.68	3.12	2.64	2.24	2.31	1.35	1.49	9.49	
2010	0.0	0.0	0.0	2.24	1.93	1.66	1.43	1.54	3.13	2.64	2.23	1.89	2.03	1.28	1.32	8.31	4.92 @ 0F
2010	0.0	100.0	0.0	2.95	2.47	2.07	1.73	1.73	4.26	3.48	2.84	2.32	2.32	1.24	1.57	8.31	4.68 @ 25F
2010	100.0	0.0	100.0	2.79	2.50	2.25	2.02	1.99	3.69	3.31	2.97	2.67	2.63	1.31	1.68	8.31	4.46 @ 50F
2010	50.0	0.0	50.0	2.55	2.25	1.98	1.75	1.79	3.44	3.00	2.63	2.30	2.35	1.29	1.49	8.31	4.24 @ 75F
2010	0.0	50.0	0.0	2.63	2.23	1.89	1.61	1.66	3.72	3.09	2.56	2.13	2.20	1.26	1.43	8.31	4.39 @100F
2010	50.0	50.0	50.0	2.87	2.49	2.16	1.87	1.86	3.97	3.39	2.91	2.49	2.48	1.28	1.62	8.31	
2010	20.6	27.3	20.6	2.59	2.23	1.92	1.66	1.71	3.57	3.03	2.57	2.18	2.25	1.28	1.45	8.31	
2020	0.0	0.0	0.0	2.21	1.90	1.64	1.41	1.52	3.02	2.56	2.17	1.84	1.98	1.31	1.35	7.82	4.64 @ 0F
2020	0.0	100.0	0.0	2.90	2.43	2.04	1.71	1.71	4.09	3.35	2.74	2.24	2.24	1.26	1.60	7.82	4.42 @ 25F
2020	100.0	0.0	100.0	2.76	2.48	2.22	1.99	1.97	3.50	3.14	2.82	2.53	2.50	1.33	1.71	7.82	4.21 @ 50F
2020	50.0	0.0	50.0	2.52	2.22	1.96	1.73	1.77	3.29	2.88	2.52	2.20	2.26	1.32	1.51	7.82	4.00 @ 75F
2020	0.0	50.0	0.0	2.60	2.20	1.87	1.59	1.64	3.58	2.98	2.48	2.06	2.13	1.28	1.46	7.82	4.14 @100F
2020	50.0	50.0	50.0	2.83	2.45	2.13	1.85	1.84	3.80	3.25	2.78	2.39	2.37	1.30	1.66	7.82	
2020	20.6	27.3	20.6	2.55	2.20	1.90	1.64	1.69	3.43	2.91	2.47	2.10	2.17	1.30	1.48	7.82	

TABLE 1.41: EXHAUST NOx AT 55.0 MPH

TABLE 1.42

HIGH ALTITUDE

EXHAUST NOx EMISSION FACTORS (GRAMS/MILE) AT 65.0 MPH

Cal. Year	Cold/Hot Start VMT Percentages			LDGV					LDGT					-LDDV-			-LDDT-			-HDDV-			----HDGV----
	PCCN	PCHC	PCCC	0F	25F	50F	75F	100F	0F	25F	50F	75F	100F	0-100F	0-100F	0-100F	0-100F	0-100F	0-100F	0-100F			
1990	0.0	0.0	0.0	4.46	3.72	3.11	2.60	2.41	5.08	4.36	3.75	3.24	2.94	2.83	3.00	37.59				7.83 @ 0F			
1990	0.0	100.0	0.0	6.37	5.30	4.43	3.72	3.20	7.80	6.70	5.80	5.05	4.25	2.76	3.52	37.59				7.28 @ 25F			
1990	100.0	0.0	100.0	5.77	5.14	4.61	4.14	3.62	6.83	6.32	5.89	5.53	4.79	2.91	3.76	37.59				6.79 @ 50F			
1990	50.0	0.0	50.0	5.15	4.46	3.88	3.40	3.04	6.03	5.41	4.89	4.45	3.92	2.86	3.34	37.59				6.35 @ 75F			
1990	0.0	50.0	0.0	5.46	4.54	3.79	3.18	2.83	6.52	5.60	4.84	4.20	3.65	2.80	3.23	37.59				5.29 @100F			
1990	50.0	50.0	50.0	6.07	5.22	4.52	3.93	3.41	7.31	6.51	5.85	5.29	4.52	2.84	3.64	37.59							
1990	20.6	27.3	20.6	5.29	4.47	3.80	3.24	2.90	6.26	5.47	4.81	4.26	3.73	2.82	3.27	37.59							
1995	0.0	0.0	0.0	4.22	3.51	2.92	2.43	2.51	4.64	3.93	3.34	2.83	2.84	2.90	3.02	25.31				6.83 @ 0F			
1995	0.0	100.0	0.0	5.78	4.72	3.86	3.16	3.04	6.88	5.75	4.82	4.06	3.80	2.75	3.53	25.31				6.43 @ 25F			
1995	100.0	0.0	100.0	5.11	4.58	4.11	3.69	3.53	6.17	5.61	5.12	4.69	4.40	2.89	3.75	25.31				6.07 @ 50F			
1995	50.0	0.0	50.0	4.70	4.08	3.54	3.09	3.05	5.47	4.82	4.28	3.80	3.66	2.89	3.35	25.31				5.74 @ 75F			
1995	0.0	50.0	0.0	5.04	4.15	3.42	2.82	2.80	5.82	4.89	4.13	3.49	3.35	2.83	3.25	25.31				5.07 @100F			
1995	50.0	50.0	50.0	5.44	4.65	3.98	3.43	3.29	6.52	5.68	4.97	4.37	4.10	2.82	3.64	25.31							
1995	20.6	27.3	20.6	4.87	4.09	3.45	2.92	2.89	5.63	4.83	4.16	3.59	3.46	2.86	3.28	25.31							
2000	0.0	0.0	0.0	3.40	2.87	2.43	2.06	2.19	4.52	3.80	3.20	2.69	2.83	2.39	2.38	18.48				6.03 @ 0F			
2000	0.0	100.0	0.0	4.53	3.74	3.09	2.55	2.52	6.36	5.21	4.28	3.52	3.44	2.28	2.79	18.48				5.75 @ 25F			
2000	100.0	0.0	100.0	4.09	3.67	3.29	2.95	2.89	5.60	5.05	4.55	4.11	3.99	2.40	2.98	18.48				5.48 @ 50F			
2000	50.0	0.0	50.0	3.77	3.30	2.88	2.53	2.56	5.10	4.46	3.91	3.43	3.44	2.39	2.65	18.48				5.23 @ 75F			
2000	0.0	50.0	0.0	4.00	3.33	2.78	2.32	2.37	5.49	4.54	3.77	3.13	3.16	2.34	2.56	18.48				4.98 @100F			
2000	50.0	50.0	50.0	4.31	3.70	3.19	2.75	2.71	5.98	5.13	4.41	3.81	3.71	2.34	2.89	18.48							
2000	20.6	27.3	20.6	3.88	3.30	2.81	2.40	2.44	5.29	4.48	3.80	3.23	3.26	2.36	2.59	18.48							
2005	0.0	0.0	0.0	2.97	2.54	2.18	1.87	2.00	4.19	3.54	2.99	2.53	2.71	1.97	1.98	13.77				5.53 @ 0F			
2005	0.0	100.0	0.0	3.93	3.27	2.72	2.27	2.27	5.71	4.67	3.82	3.12	3.12	1.90	2.34	13.77				5.27 @ 25F			
2005	100.0	0.0	100.0	3.65	3.28	2.94	2.64	2.61	4.93	4.43	3.98	3.57	3.53	2.00	2.51	13.77				5.03 @ 50F			
2005	50.0	0.0	50.0	3.33	2.93	2.58	2.27	2.32	4.59	4.01	3.50	3.07	3.14	1.98	2.22	13.77				4.80 @ 75F			
2005	0.0	50.0	0.0	3.47	2.93	2.47	2.08	2.15	4.98	4.13	3.42	2.84	2.93	1.93	2.14	13.77				4.83 @100F			
2005	50.0	50.0	50.0	3.79	3.27	2.83	2.45	2.44	5.32	4.55	3.90	3.35	3.33	1.95	2.43	13.77							
2005	20.6	27.3	20.6	3.40	2.91	2.50	2.15	2.22	4.78	4.05	3.43	2.92	3.01	1.96	2.17	13.77							
2010	0.0	0.0	0.0	2.80	2.41	2.07	1.78	1.92	4.07	3.44	2.91	2.46	2.64	1.86	1.92	12.06				5.25 @ 0F			
2010	0.0	100.0	0.0	3.70	3.10	2.60	2.17	2.17	5.53	4.51	3.69	3.01	3.01	1.80	2.27	12.06				5.00 @ 25F			
2010	100.0	0.0	100.0	3.50	3.14	2.82	2.53	2.50	4.79	4.30	3.86	3.46	3.42	1.91	2.44	12.06				4.76 @ 50F			
2010	50.0	0.0	50.0	3.17	2.79	2.46	2.17	2.22	4.45	3.89	3.40	2.98	3.05	1.88	2.15	12.06				4.53 @ 75F			
2010	0.0	50.0	0.0	3.27	2.77	2.35	1.99	2.06	4.82	4.00	3.32	2.75	2.84	1.83	2.08	12.06				4.68 @100F			
2010	50.0	50.0	50.0	3.60	3.12	2.71	2.35	2.34	5.16	4.41	3.77	3.24	3.22	1.86	2.36	12.06							
2010	20.6	27.3	20.6	3.21	2.77	2.39	2.06	2.12	4.63	3.92	3.33	2.83	2.91	1.85	2.10	12.06							
2020	0.0	0.0	0.0	2.75	2.37	2.04	1.76	1.89	3.92	3.33	2.82	2.39	2.57	1.89	1.96	11.34				4.95 @ 0F			
2020	0.0	100.0	0.0	3.64	3.05	2.56	2.14	2.14	5.30	4.34	3.55	2.90	2.90	1.83	2.32	11.34				4.72 @ 25F			
2020	100.0	0.0	100.0	3.46	3.10	2.79	2.50	2.47	4.53	4.07	3.65	3.28	3.24	1.93	2.48	11.34				4.49 @ 50F			
2020	50.0	0.0	50.0	3.13	2.76	2.43	2.15	2.20	4.25	3.72	3.25	2.85	2.92	1.91	2.20	11.34				4.27 @ 75F			
2020	0.0	50.0	0.0	3.22	2.73	2.32	1.97	2.03	4.63	3.85	3.20	2.66	2.75	1.86	2.12	11.34				4.42 @100F			
2020	50.0	50.0	50.0	3.55	3.08	2.67	2.32	2.31	4.92	4.20	3.60	3.09	3.07	1.88	2.40	11.34							
2020	20.6	27.3	20.6	3.16	2.73	2.36	2.04	2.10	4.44	3.77	3.20	2.72	2.81	1.88	2.15	11.34							

TABLE 1.42: EXHAUST NOx AT 65.0 MPH

TABLE 2.01

## LOW ALTITUDE

EMISSION FACTORS (GRAMS/MILE)  
60-84F DIURNAL, 80F HOT SOAK

Cal. Year	Pollutant By Component	LDGV					LDGT					HDGV							
		7.0	8.0	9.0	10.0	10.4	11.5	7.0	8.0	9.0	10.0	10.4	11.5	7.0	8.0	9.0	10.0	10.4	11.5
1990	Combined NMHC	2.95	3.20	3.51	4.06	4.16	5.05	4.52	4.84	5.23	5.83	5.94	6.82	10.99	11.97	13.39	14.81	15.37	17.68
1990	Exhaust NMHC	2.18	2.18	2.19	2.29	2.34	2.48	3.39	3.39	3.39	3.49	3.53	3.66	7.70	7.70	7.71	7.73	7.74	7.77
1990	Evaporative HC	0.37	0.45	0.58	0.77	0.70	0.96	0.70	0.81	0.98	1.18	1.12	1.43	2.53	3.02	3.94	4.66	4.92	6.10
1990	Refueling Loss	0.14	0.16	0.19	0.21	0.22	0.25	0.19	0.22	0.25	0.28	0.29	0.33	0.31	0.36	0.42	0.47	0.49	0.55
1990	Running Loss HC	0.19	0.33	0.47	0.72	0.82	1.29	0.18	0.37	0.55	0.82	0.93	1.34	0.33	0.77	1.21	1.84	2.10	3.15
1990	Resting Loss HC	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.12	0.12	0.12	0.12	0.12	0.12
1990	Exhaust CO	26.28	26.28	26.41	29.01	30.22	34.04	38.71	38.71	38.85	41.06	42.07	45.19	144.93	144.93	145.13	146.35	146.88	148.50
1990	Exhaust NOx	1.80	1.80	1.80	1.81	1.81	1.82	2.37	2.37	2.36	2.36	2.36	2.36	6.60	6.52	6.44	6.36	6.33	6.25
1995	Combined NMHC	2.25	2.44	2.67	3.18	3.42	4.33	3.14	3.36	3.62	4.14	4.39	5.19	7.13	7.93	9.05	10.28	10.85	12.93
1995	Exhaust NMHC	1.68	1.68	1.68	1.83	1.89	2.09	2.43	2.43	2.44	2.59	2.66	2.86	4.73	4.73	4.73	4.77	4.79	4.83
1995	Evaporative HC	0.20	0.24	0.31	0.43	0.49	0.73	0.32	0.36	0.44	0.57	0.65	0.91	1.71	2.11	2.82	3.45	3.76	4.86
1995	Refueling Loss	0.13	0.15	0.17	0.19	0.20	0.23	0.17	0.20	0.23	0.26	0.27	0.31	0.29	0.34	0.39	0.44	0.46	0.51
1995	Running Loss HC	0.18	0.31	0.44	0.67	0.77	1.21	0.16	0.30	0.45	0.65	0.74	1.06	0.29	0.64	1.00	1.51	1.74	2.62
1995	Resting Loss HC	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.10	0.10	0.10	0.10	0.10	0.10
1995	Exhaust CO	21.10	21.10	21.26	25.01	26.77	32.55	28.48	28.48	28.68	32.29	33.96	39.32	95.69	95.69	95.95	97.53	98.22	100.32
1995	Exhaust NOx	1.62	1.63	1.64	1.66	1.67	1.69	1.98	1.99	2.00	2.00	2.01	2.02	5.71	5.61	5.51	5.42	5.38	5.28
2000	Combined NMHC	1.95	2.13	2.34	2.83	3.05	3.89	2.59	2.78	3.02	3.54	3.78	4.59	4.68	5.27	6.05	7.07	7.56	9.35
2000	Exhaust NMHC	1.48	1.48	1.48	1.64	1.71	1.92	2.03	2.03	2.03	2.22	2.31	2.57	2.98	2.98	2.99	3.05	3.08	3.15
2000	Evaporative HC	0.14	0.18	0.24	0.35	0.41	0.63	0.20	0.24	0.31	0.42	0.49	0.71	1.12	1.40	1.86	2.39	2.68	3.68
2000	Refueling Loss	0.13	0.15	0.17	0.19	0.20	0.22	0.17	0.20	0.23	0.26	0.27	0.30	0.28	0.33	0.38	0.43	0.44	0.50
2000	Running Loss HC	0.15	0.27	0.39	0.60	0.68	1.07	0.13	0.27	0.40	0.59	0.67	0.96	0.22	0.48	0.74	1.12	1.28	1.94
2000	Resting Loss HC	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.08	0.08	0.08	0.08	0.08	0.08
2000	Exhaust CO	19.61	19.61	19.75	23.92	25.90	32.44	25.61	25.61	25.80	30.61	32.88	40.33	55.19	55.19	55.59	58.02	59.09	62.33
2000	Exhaust NOx	1.39	1.40	1.42	1.44	1.45	1.47	1.82	1.84	1.86	1.88	1.88	1.91	5.16	5.03	4.89	4.75	4.70	4.56
2005	Combined NMHC	1.79	1.95	2.14	2.57	2.77	3.50	2.33	2.52	2.73	3.24	3.47	4.26	3.49	3.98	4.60	5.50	5.95	7.57
2005	Exhaust NMHC	1.40	1.40	1.41	1.56	1.63	1.85	1.87	1.87	1.88	2.09	2.18	2.46	2.16	2.16	2.17	2.25	2.28	2.37
2005	Evaporative HC	0.12	0.15	0.20	0.29	0.34	0.53	0.14	0.18	0.24	0.33	0.39	0.58	0.82	1.04	1.39	1.86	2.13	3.06
2005	Refueling Loss	0.13	0.15	0.17	0.19	0.20	0.22	0.17	0.20	0.23	0.26	0.27	0.30	0.28	0.32	0.37	0.42	0.44	0.49
2005	Running Loss HC	0.11	0.22	0.33	0.50	0.57	0.87	0.11	0.23	0.36	0.53	0.61	0.88	0.18	0.39	0.61	0.92	1.05	1.59
2005	Resting Loss HC	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.06	0.06	0.06	0.06	0.06	0.06
2005	Exhaust CO	19.39	19.39	19.53	23.88	25.94	32.77	24.44	24.44	24.62	30.01	32.56	41.01	31.97	31.97	32.43	35.19	36.39	40.06
2005	Exhaust NOx	1.28	1.30	1.32	1.34	1.35	1.37	1.70	1.72	1.74	1.77	1.78	1.80	4.60	4.45	4.31	4.17	4.11	3.97
2010	Combined NMHC	1.72	1.87	2.04	2.45	2.63	3.29	2.28	2.45	2.65	3.14	3.37	4.13	2.92	3.33	3.83	4.66	5.07	6.56
2010	Exhaust NMHC	1.38	1.38	1.38	1.53	1.60	1.81	1.85	1.85	1.86	2.07	2.16	2.45	1.85	1.85	1.87	1.95	1.99	2.09
2010	Evaporative HC	0.11	0.14	0.18	0.26	0.31	0.47	0.13	0.16	0.22	0.30	0.35	0.53	0.61	0.79	1.05	1.48	1.73	2.61
2010	Refueling Loss	0.13	0.15	0.17	0.19	0.20	0.22	0.17	0.20	0.23	0.26	0.27	0.30	0.27	0.32	0.37	0.41	0.43	0.48
2010	Running Loss HC	0.09	0.19	0.29	0.44	0.50	0.76	0.10	0.21	0.33	0.49	0.56	0.82	0.15	0.33	0.51	0.77	0.89	1.34
2010	Resting Loss HC	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04
2010	Exhaust CO	19.38	19.38	19.52	23.90	25.98	32.88	24.73	24.73	24.90	30.50	33.15	41.98	21.99	21.99	22.50	25.66	27.04	31.23
2010	Exhaust NOx	1.24	1.26	1.28	1.30	1.31	1.33	1.66	1.68	1.71	1.73	1.75	1.77	4.29	4.14	3.98	3.84	3.78	3.63
2020	Combined NMHC	1.69	1.84	2.00	2.39	2.57	3.20	2.22	2.39	2.58	3.06	3.27	3.99	2.83	3.20	3.67	4.43	4.81	6.16
2020	Exhaust NMHC	1.37	1.37	1.37	1.52	1.59	1.80	1.83	1.83	1.83	2.04	2.13	2.42	1.85	1.85	1.87	1.95	1.99	2.09
2020	Evaporative HC	0.10	0.13	0.17	0.25	0.29	0.45	0.13	0.16	0.20	0.28	0.33	0.49	0.55	0.72	0.96	1.35	1.58	2.38
2020	Refueling Loss	0.13	0.15	0.17	0.19	0.20	0.22	0.17	0.20	0.23	0.26	0.27	0.30	0.27	0.32	0.37	0.41	0.43	0.48
2020	Running Loss HC	0.08	0.18	0.27	0.41	0.47	0.72	0.09	0.20	0.31	0.46	0.52	0.77	0.13	0.29	0.46	0.69	0.80	1.19
2020	Resting Loss HC	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
2020	Exhaust CO	19.38	19.38	19.51	23.90	25.98	32.89	24.53	24.53	24.70	30.29	32.94	41.76	20.88	20.88	21.37	24.36	25.67	29.66
2020	Exhaust NOx	1.23	1.25	1.27	1.29	1.29	1.32	1.61	1.63	1.66	1.68	1.70	1.72	3.95	3.82	3.67	3.54	3.49	3.35

TABLE 2.01: LOW ALTITUDE, 60-84F

TABLE 2.02

## LOW ALTITUDE

EMISSION FACTORS (GRAMS/MILE)  
67-95F DIURNAL, 90F HOT SOAK

Cal. Year	Pollutant By Component	LDGV					LDGT					HDGV							
		7.0	8.0	9.0	10.0	10.4	11.5	7.0	8.0	9.0	10.0	10.4	11.5	7.0	8.0	9.0	10.0	10.4	11.5
1990	Combined NMHC	3.47	3.94	4.32	5.20	5.68	7.21	5.19	5.69	6.17	7.11	7.57	9.08	12.97	14.34	16.75	19.66	20.83	24.59
1990	Exhaust NMHC	2.37	2.37	2.38	2.51	2.57	2.75	3.63	3.63	3.65	3.76	3.82	3.99	8.13	8.14	8.16	8.19	8.20	8.23
1990	Evaporative HC	0.55	0.71	0.77	1.02	1.15	1.58	0.91	1.09	1.23	1.59	1.75	2.27	3.65	4.21	5.79	7.55	8.11	10.00
1990	Refueling Loss	0.16	0.19	0.21	0.23	0.24	0.27	0.22	0.25	0.28	0.31	0.32	0.36	0.36	0.41	0.46	0.52	0.54	0.60
1990	Running Loss HC	0.30	0.58	0.86	1.35	1.63	2.51	0.35	0.64	0.93	1.36	1.60	2.38	0.68	1.43	2.18	3.26	3.84	5.61
1990	Resting Loss HC	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.15	0.15	0.15	0.15	0.15	0.15
1990	Exhaust CO	30.65	30.65	31.54	34.72	36.38	41.78	45.10	45.10	46.01	48.55	49.90	54.12	175.41	175.41	176.58	177.92	178.51	180.29
1990	Exhaust NOx	1.70	1.71	1.71	1.72	1.72	1.72	2.22	2.22	2.22	2.22	2.22	2.22	6.10	6.05	5.97	5.89	5.86	5.78
1995	Combined NMHC	2.51	2.88	3.32	4.16	4.62	6.14	3.51	3.85	4.30	5.10	5.51	6.87	8.74	9.88	11.89	14.38	15.44	18.85
1995	Exhaust NMHC	1.73	1.73	1.75	1.92	2.00	2.24	2.53	2.53	2.56	2.74	2.82	3.08	5.10	5.11	5.14	5.18	5.20	5.24
1995	Evaporative HC	0.27	0.35	0.48	0.67	0.78	1.19	0.40	0.49	0.67	0.92	1.04	1.49	2.59	3.06	4.37	5.86	6.39	8.19
1995	Refueling Loss	0.15	0.17	0.19	0.22	0.22	0.25	0.20	0.23	0.26	0.29	0.30	0.33	0.34	0.39	0.44	0.49	0.51	0.56
1995	Running Loss HC	0.28	0.54	0.81	1.26	1.53	2.38	0.30	0.52	0.73	1.07	1.26	1.89	0.57	1.19	1.80	2.71	3.20	4.72
1995	Resting Loss HC	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.14	0.14	0.14	0.14	0.14	0.14
1995	Exhaust CO	22.26	22.26	23.32	28.18	30.60	38.85	30.83	30.83	32.20	36.67	38.87	46.17	117.68	117.68	119.20	120.94	121.71	124.02
1995	Exhaust NOx	1.61	1.62	1.64	1.65	1.66	1.68	1.95	1.95	1.96	1.97	1.97	1.98	5.38	5.32	5.22	5.12	5.08	4.99
2000	Combined NMHC	2.14	2.47	2.86	3.62	4.03	5.38	2.84	3.15	3.55	4.31	4.70	5.97	5.68	6.55	7.96	9.85	10.74	13.66
2000	Exhaust NMHC	1.50	1.50	1.52	1.70	1.78	2.04	2.06	2.06	2.10	2.32	2.42	2.73	3.15	3.16	3.22	3.28	3.31	3.38
2000	Evaporative HC	0.19	0.27	0.37	0.54	0.63	0.99	0.26	0.34	0.47	0.67	0.78	1.15	1.67	2.04	2.89	3.99	4.47	6.12
2000	Refueling Loss	0.15	0.17	0.19	0.21	0.22	0.24	0.20	0.23	0.25	0.28	0.29	0.33	0.33	0.37	0.42	0.47	0.49	0.54
2000	Running Loss HC	0.24	0.48	0.71	1.10	1.33	2.04	0.26	0.46	0.66	0.97	1.14	1.70	0.42	0.88	1.33	2.00	2.37	3.52
2000	Resting Loss HC	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.10	0.10	0.10	0.10	0.10	0.10
2000	Exhaust CO	19.92	19.92	20.93	26.44	29.17	38.62	26.43	26.43	27.75	34.01	37.10	47.70	65.65	65.65	68.00	70.68	71.86	75.42
2000	Exhaust NOx	1.40	1.42	1.43	1.46	1.46	1.49	1.83	1.84	1.86	1.88	1.89	1.91	5.00	4.91	4.77	4.64	4.59	4.45
2005	Combined NMHC	1.93	2.21	2.54	3.17	3.51	4.62	2.52	2.80	3.17	3.88	4.24	5.40	4.17	4.91	6.01	7.57	8.34	10.92
2005	Exhaust NMHC	1.40	1.40	1.43	1.61	1.69	1.95	1.87	1.87	1.91	2.15	2.26	2.60	2.23	2.24	2.32	2.40	2.43	2.52
2005	Evaporative HC	0.16	0.22	0.30	0.44	0.52	0.82	0.19	0.25	0.36	0.53	0.61	0.93	1.20	1.51	2.13	3.01	3.44	4.96
2005	Refueling Loss	0.15	0.17	0.19	0.21	0.22	0.24	0.20	0.23	0.25	0.28	0.29	0.33	0.32	0.37	0.41	0.46	0.48	0.53
2005	Running Loss HC	0.19	0.38	0.57	0.87	1.04	1.57	0.21	0.40	0.59	0.87	1.02	1.51	0.34	0.71	1.08	1.62	1.92	2.84
2005	Resting Loss HC	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.08	0.08	0.08	0.08	0.08	0.08
2005	Exhaust CO	19.39	19.39	20.40	26.16	29.00	38.88	24.44	24.44	25.75	32.85	36.35	48.49	35.31	35.31	37.96	41.00	42.33	46.37
2005	Exhaust NOx	1.30	1.32	1.34	1.36	1.36	1.39	1.73	1.74	1.76	1.79	1.80	1.83	4.55	4.46	4.31	4.17	4.12	3.97
2010	Combined NMHC	1.84	2.08	2.37	2.93	3.23	4.19	2.44	2.69	3.03	3.70	4.03	5.11	3.35	3.98	4.85	6.14	6.83	9.13
2010	Exhaust NMHC	1.38	1.38	1.40	1.58	1.66	1.91	1.85	1.85	1.89	2.13	2.25	2.59	1.85	1.86	1.94	2.03	2.07	2.17
2010	Evaporative HC	0.14	0.19	0.27	0.39	0.46	0.72	0.17	0.23	0.32	0.47	0.55	0.82	0.86	1.13	1.57	2.28	2.67	4.07
2010	Refueling Loss	0.15	0.17	0.19	0.21	0.22	0.24	0.20	0.23	0.25	0.28	0.30	0.33	0.32	0.36	0.41	0.46	0.47	0.52
2010	Running Loss HC	0.16	0.32	0.48	0.73	0.87	1.29	0.18	0.36	0.53	0.78	0.92	1.35	0.28	0.58	0.88	1.32	1.57	2.31
2010	Resting Loss HC	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.05	0.05	0.05	0.05	0.05
2010	Exhaust CO	19.38	19.38	20.38	26.19	29.06	39.06	24.73	24.73	25.99	33.41	37.08	49.84	21.99	21.99	25.03	28.50	30.02	34.64
2010	Exhaust NOx	1.26	1.27	1.29	1.32	1.32	1.35	1.69	1.70	1.73	1.76	1.77	1.80	4.29	4.19	4.03	3.89	3.83	3.68
2020	Combined NMHC	1.80	2.02	2.29	2.82	3.10	3.99	2.36	2.60	2.90	3.52	3.83	4.82	3.18	3.73	4.50	5.63	6.22	8.21
2020	Exhaust NMHC	1.37	1.37	1.39	1.57	1.65	1.90	1.83	1.83	1.86	2.10	2.21	2.55	1.85	1.86	1.94	2.03	2.07	2.17
2020	Evaporative HC	0.13	0.18	0.25	0.36	0.42	0.66	0.16	0.21	0.29	0.42	0.49	0.73	0.76	1.00	1.38	2.00	2.34	3.56
2020	Refueling Loss	0.15	0.17	0.19	0.21	0.22	0.24	0.20	0.23	0.26	0.28	0.30	0.33	0.31	0.36	0.41	0.45	0.47	0.52
2020	Running Loss HC	0.14	0.29	0.44	0.67	0.79	1.17	0.16	0.32	0.48	0.70	0.82	1.20	0.23	0.49	0.74	1.11	1.31	1.93
2020	Resting Loss HC	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03
2020	Exhaust CO	19.38	19.38	20.37	26.19	29.06	39.06	24.53	24.53	25.78	33.20	36.86	49.61	20.88	20.88	23.76	27.06	28.51	32.89
2020	Exhaust NOx	1.25	1.26	1.28	1.30	1.31	1.33	1.64	1.65	1.68	1.71	1.72	1.75	3.95	3.87	3.72	3.59	3.53	3.39

TABLE 2.02: LOW ALTITUDE, 67-95F

TABLE 2.03

## LOW ALTITUDE

EMISSION FACTORS (GRAMS/MILE)  
71-92F DIURNAL, 88F HOT SOAK

Cal. Year	Pollutant By Component	LDGV					LDGT					HDGV							
		7.0	8.0	9.0	10.0	10.4	11.5	7.0	8.0	9.0	10.0	10.4	11.5	7.0	8.0	9.0	10.0	10.4	11.5
1990	Combined NMHC	3.33	3.73	4.21	4.85	5.25	6.63	5.01	5.46	6.03	6.72	7.12	8.50	12.55	13.81	16.00	18.44	19.43	22.89
1990	Exhaust NMHC	2.34	2.35	2.37	2.49	2.55	2.73	3.60	3.60	3.62	3.73	3.79	3.96	8.09	8.09	8.11	8.14	8.15	8.18
1990	Evaporative HC	0.48	0.60	0.78	0.86	0.97	1.34	0.83	0.97	1.22	1.37	1.50	1.95	3.41	3.92	5.34	6.74	7.23	8.97
1990	Refueling Loss	0.16	0.19	0.21	0.23	0.24	0.27	0.22	0.25	0.28	0.31	0.32	0.36	0.36	0.41	0.47	0.52	0.54	0.60
1990	Running Loss HC	0.25	0.51	0.76	1.17	1.40	2.20	0.28	0.56	0.83	1.22	1.42	2.15	0.54	1.24	1.93	2.89	3.36	4.99
1990	Resting Loss HC	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.15	0.15	0.15	0.15	0.15	0.15
1990	Exhaust CO	30.11	30.11	31.01	34.19	35.80	41.07	44.32	44.32	45.21	47.77	49.09	53.21	172.12	172.12	173.22	174.56	175.14	176.91
1990	Exhaust NOx	1.71	1.71	1.72	1.72	1.73	1.73	2.24	2.23	2.23	2.23	2.23	2.23	6.15	6.09	6.01	5.93	5.90	5.82
1995	Combined NMHC	2.43	2.75	3.14	3.88	4.26	5.62	3.41	3.72	4.11	4.83	5.19	6.42	8.40	9.44	11.19	13.33	14.23	17.33
1995	Exhaust NMHC	1.72	1.72	1.75	1.92	2.00	2.23	2.52	2.52	2.55	2.73	2.81	3.06	5.06	5.06	5.10	5.14	5.16	5.20
1995	Evaporative HC	0.24	0.30	0.40	0.56	0.65	0.98	0.37	0.44	0.56	0.76	0.87	1.23	2.41	2.83	3.92	5.17	5.63	7.24
1995	Refueling Loss	0.15	0.17	0.19	0.22	0.22	0.25	0.20	0.23	0.26	0.29	0.30	0.33	0.34	0.39	0.44	0.49	0.51	0.56
1995	Running Loss HC	0.24	0.47	0.71	1.10	1.31	2.08	0.24	0.45	0.66	0.96	1.12	1.72	0.46	1.02	1.60	2.40	2.80	4.19
1995	Resting Loss HC	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.13	0.13	0.13	0.13	0.13	0.13
1995	Exhaust CO	22.12	22.12	23.23	28.03	30.40	38.47	30.54	30.54	31.92	36.35	38.51	45.66	115.29	115.29	116.73	118.46	119.22	121.52
1995	Exhaust NOx	1.61	1.62	1.64	1.65	1.66	1.68	1.95	1.96	1.96	1.97	1.97	1.98	5.41	5.34	5.24	5.14	5.11	5.01
2000	Combined NMHC	2.08	2.37	2.71	3.39	3.74	4.95	2.76	3.04	3.39	4.09	4.43	5.61	5.44	6.24	7.45	9.09	9.85	12.47
2000	Exhaust NMHC	1.49	1.49	1.52	1.70	1.78	2.04	2.06	2.06	2.10	2.32	2.42	2.72	3.13	3.14	3.20	3.26	3.29	3.36
2000	Evaporative HC	0.17	0.23	0.31	0.44	0.52	0.82	0.24	0.30	0.39	0.56	0.65	0.95	1.54	1.87	2.55	3.48	3.90	5.34
2000	Refueling Loss	0.15	0.17	0.19	0.21	0.22	0.24	0.20	0.23	0.26	0.28	0.30	0.33	0.33	0.38	0.42	0.47	0.49	0.54
2000	Running Loss HC	0.20	0.41	0.63	0.96	1.15	1.79	0.21	0.40	0.59	0.87	1.01	1.54	0.34	0.76	1.17	1.77	2.07	3.12
2000	Resting Loss HC	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.10	0.10	0.10	0.10	0.10	0.10
2000	Exhaust CO	19.88	19.88	20.97	26.40	29.08	38.31	26.33	26.33	27.72	33.90	36.93	47.30	64.51	64.51	66.73	69.40	70.57	74.12
2000	Exhaust NOx	1.40	1.41	1.43	1.45	1.46	1.49	1.83	1.84	1.86	1.88	1.89	1.91	5.02	4.92	4.78	4.64	4.59	4.45
2005	Combined NMHC	1.88	2.13	2.43	3.01	3.30	4.30	2.45	2.71	3.04	3.70	4.03	5.11	3.99	4.67	5.62	6.98	7.65	9.95
2005	Exhaust NMHC	1.40	1.40	1.44	1.61	1.70	1.95	1.87	1.87	1.92	2.15	2.26	2.60	2.23	2.23	2.31	2.38	2.41	2.51
2005	Evaporative HC	0.13	0.18	0.25	0.37	0.43	0.68	0.17	0.22	0.29	0.44	0.51	0.77	1.09	1.38	1.87	2.62	2.99	4.31
2005	Refueling Loss	0.15	0.17	0.19	0.21	0.22	0.24	0.20	0.23	0.26	0.28	0.30	0.33	0.32	0.37	0.41	0.46	0.48	0.53
2005	Running Loss HC	0.16	0.33	0.51	0.77	0.91	1.39	0.17	0.35	0.53	0.79	0.91	1.37	0.28	0.62	0.96	1.44	1.68	2.53
2005	Resting Loss HC	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.08	0.08	0.08	0.08	0.08	0.08
2005	Exhaust CO	19.39	19.39	20.49	26.16	28.95	38.60	24.44	24.44	25.85	32.85	36.29	48.15	34.94	34.94	37.46	40.48	41.81	45.83
2005	Exhaust NOx	1.30	1.32	1.33	1.35	1.36	1.38	1.72	1.74	1.76	1.79	1.80	1.83	4.56	4.45	4.31	4.17	4.11	3.97
2010	Combined NMHC	1.80	2.02	2.28	2.80	3.06	3.94	2.38	2.62	2.92	3.55	3.85	4.86	3.21	3.79	4.55	5.70	6.30	8.35
2010	Exhaust NMHC	1.38	1.38	1.41	1.58	1.66	1.91	1.85	1.85	1.90	2.14	2.25	2.59	1.85	1.85	1.94	2.03	2.06	2.17
2010	Evaporative HC	0.12	0.16	0.23	0.33	0.38	0.60	0.15	0.20	0.26	0.39	0.46	0.69	0.77	1.02	1.36	1.99	2.33	3.53
2010	Refueling Loss	0.15	0.17	0.19	0.21	0.22	0.24	0.20	0.23	0.26	0.29	0.30	0.33	0.32	0.37	0.41	0.46	0.48	0.53
2010	Running Loss HC	0.13	0.28	0.43	0.65	0.77	1.16	0.15	0.31	0.48	0.71	0.82	1.23	0.23	0.51	0.79	1.18	1.38	2.07
2010	Resting Loss HC	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.05	0.05	0.05	0.05	0.05
2010	Exhaust CO	19.38	19.38	20.46	26.19	29.01	38.78	24.73	24.73	26.10	33.41	37.01	49.49	21.99	21.99	24.86	28.32	29.83	34.42
2010	Exhaust NOx	1.26	1.27	1.29	1.31	1.32	1.34	1.68	1.70	1.73	1.75	1.77	1.80	4.29	4.18	4.03	3.88	3.82	3.67
2020	Combined NMHC	1.76	1.97	2.21	2.70	2.95	3.78	2.31	2.54	2.82	3.40	3.68	4.62	3.07	3.58	4.26	5.27	5.79	7.58
2020	Exhaust NMHC	1.37	1.37	1.40	1.57	1.65	1.90	1.83	1.83	1.87	2.10	2.21	2.55	1.85	1.85	1.94	2.03	2.07	2.17
2020	Evaporative HC	0.11	0.15	0.21	0.30	0.35	0.56	0.14	0.18	0.24	0.35	0.41	0.62	0.69	0.91	1.21	1.75	2.05	3.11
2020	Refueling Loss	0.15	0.17	0.19	0.21	0.22	0.24	0.20	0.23	0.26	0.29	0.30	0.33	0.32	0.36	0.41	0.46	0.47	0.52
2020	Running Loss HC	0.12	0.26	0.40	0.60	0.70	1.06	0.13	0.28	0.43	0.64	0.75	1.11	0.19	0.43	0.67	1.01	1.17	1.75
2020	Resting Loss HC	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03
2020	Exhaust CO	19.38	19.38	20.46	26.19	29.01	38.78	24.53	24.53	25.89	33.20	36.80	49.26	20.88	20.88	23.61	26.89	28.33	32.69
2020	Exhaust NOx	1.25	1.26	1.28	1.30	1.31	1.33	1.64	1.65	1.68	1.71	1.72	1.75	3.95	3.86	3.71	3.58	3.53	3.38

TABLE 2.03: LOW ALTITUDE, 71-92F

TABLE 2.04

## LOW ALTITUDE

EMISSION FACTORS (GRAMS/MILE)  
66-85F DIURNAL, 82F HOT SOAK

Cal. Year	Pollutant By Component	LDGV					LDGT					HDGV							
		7.0	8.0	9.0	10.0	10.4	11.5	7.0	8.0	9.0	10.0	10.4	11.5	7.0	8.0	9.0	10.0	10.4	11.5
1990	Combined NMHC	3.02	3.28	3.60	4.19	4.46	5.31	4.61	4.94	5.36	5.98	6.26	7.09	11.30	12.35	13.91	15.46	16.10	18.54
1990	Exhaust NMHC	2.22	2.22	2.23	2.34	2.39	2.55	3.44	3.44	3.45	3.55	3.60	3.74	7.80	7.80	7.82	7.84	7.85	7.88
1990	Evaporative HC	0.38	0.45	0.57	0.76	0.85	0.97	0.71	0.81	0.98	1.18	1.28	1.44	2.69	3.20	4.21	5.00	5.32	6.48
1990	Refueling Loss	0.15	0.17	0.19	0.22	0.23	0.25	0.20	0.23	0.26	0.29	0.30	0.34	0.33	0.38	0.44	0.49	0.51	0.57
1990	Running Loss HC	0.19	0.36	0.52	0.79	0.91	1.45	0.19	0.40	0.60	0.88	1.01	1.50	0.35	0.84	1.33	2.01	2.30	3.48
1990	Resting Loss HC	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.12	0.12	0.12	0.12	0.12	0.12
1990	Exhaust CO	27.15	27.15	27.54	30.32	31.63	35.84	39.98	39.98	40.36	42.69	43.78	47.15	151.79	151.79	152.25	153.50	154.05	155.71
1990	Exhaust NOx	1.77	1.77	1.78	1.78	1.79	1.79	2.33	2.33	2.33	2.33	2.33	2.33	6.47	6.39	6.31	6.24	6.20	6.12
1995	Combined NMHC	2.29	2.49	2.74	3.29	3.54	4.53	3.19	3.42	3.70	4.25	4.49	5.39	7.38	8.24	9.48	10.81	11.38	13.63
1995	Exhaust NMHC	1.69	1.69	1.70	1.86	1.92	2.13	2.45	2.45	2.47	2.63	2.70	2.91	4.81	4.81	4.83	4.87	4.89	4.93
1995	Evaporative HC	0.20	0.24	0.31	0.42	0.49	0.73	0.32	0.37	0.44	0.58	0.64	0.90	1.84	2.25	3.03	3.72	4.00	5.15
1995	Refueling Loss	0.14	0.16	0.18	0.20	0.21	0.24	0.18	0.21	0.24	0.27	0.28	0.32	0.31	0.36	0.41	0.46	0.48	0.53
1995	Running Loss HC	0.19	0.34	0.49	0.74	0.85	1.37	0.17	0.32	0.48	0.71	0.80	1.20	0.31	0.70	1.10	1.66	1.90	2.90
1995	Resting Loss HC	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.11	0.11	0.11	0.11	0.11	0.11
1995	Exhaust CO	21.33	21.33	21.84	25.90	27.83	34.22	28.94	28.94	29.54	33.40	35.20	41.04	100.61	100.61	101.21	102.84	103.55	105.71
1995	Exhaust NOx	1.61	1.63	1.64	1.66	1.66	1.68	1.97	1.98	1.99	1.99	2.00	2.01	5.62	5.53	5.43	5.34	5.30	5.20
2000	Combined NMHC	1.98	2.17	2.40	2.91	3.15	4.05	2.62	2.82	3.08	3.63	3.87	4.76	4.82	5.45	6.31	7.40	7.89	9.81
2000	Exhaust NMHC	1.49	1.49	1.50	1.66	1.73	1.96	2.04	2.04	2.05	2.25	2.34	2.61	3.02	3.02	3.05	3.11	3.14	3.21
2000	Evaporative HC	0.15	0.18	0.24	0.34	0.40	0.62	0.21	0.24	0.30	0.42	0.47	0.70	1.18	1.47	1.97	2.54	2.80	3.85
2000	Refueling Loss	0.14	0.16	0.18	0.20	0.21	0.23	0.18	0.21	0.24	0.27	0.28	0.31	0.30	0.35	0.39	0.44	0.46	0.51
2000	Running Loss HC	0.16	0.29	0.43	0.65	0.75	1.20	0.14	0.29	0.43	0.64	0.73	1.08	0.24	0.52	0.81	1.22	1.40	2.15
2000	Resting Loss HC	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.09	0.09	0.09	0.09	0.09	0.09
2000	Exhaust CO	19.67	19.67	20.18	24.72	26.89	34.16	25.78	25.78	26.41	31.62	34.10	42.34	57.52	57.52	58.44	60.95	62.04	65.37
2000	Exhaust NOx	1.39	1.41	1.43	1.45	1.45	1.48	1.82	1.84	1.86	1.88	1.89	1.91	5.12	4.99	4.85	4.72	4.66	4.53
2005	Combined NMHC	1.81	1.98	2.18	2.64	2.85	3.63	2.35	2.54	2.78	3.32	3.55	4.40	3.58	4.10	4.78	5.74	6.18	7.90
2005	Exhaust NMHC	1.40	1.40	1.42	1.58	1.65	1.88	1.87	1.87	1.89	2.11	2.21	2.51	2.18	2.18	2.21	2.29	2.32	2.41
2005	Evaporative HC	0.12	0.14	0.20	0.28	0.33	0.52	0.15	0.17	0.23	0.33	0.37	0.57	0.85	1.09	1.45	1.95	2.19	3.17
2005	Refueling Loss	0.14	0.16	0.18	0.20	0.21	0.23	0.18	0.21	0.24	0.27	0.28	0.31	0.29	0.34	0.39	0.43	0.45	0.50
2005	Running Loss HC	0.11	0.24	0.36	0.54	0.62	0.97	0.12	0.25	0.39	0.58	0.66	0.98	0.19	0.43	0.67	1.00	1.15	1.76
2005	Resting Loss HC	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.06	0.06	0.06	0.06	0.06	0.06
2005	Exhaust CO	19.39	19.39	19.91	24.64	26.90	34.50	24.44	24.44	25.10	30.95	33.75	43.12	32.72	32.72	33.76	36.60	37.84	41.61
2005	Exhaust NOx	1.29	1.30	1.32	1.34	1.35	1.37	1.71	1.73	1.75	1.77	1.78	1.81	4.59	4.45	4.30	4.16	4.11	3.96
2010	Combined NMHC	1.74	1.89	2.08	2.50	2.70	3.40	2.30	2.48	2.70	3.22	3.44	4.26	2.96	3.39	3.95	4.81	5.22	6.80
2010	Exhaust NMHC	1.38	1.38	1.39	1.55	1.62	1.85	1.85	1.85	1.87	2.09	2.19	2.50	1.85	1.85	1.89	1.97	2.01	2.11
2010	Evaporative HC	0.11	0.13	0.18	0.26	0.30	0.47	0.14	0.16	0.21	0.30	0.34	0.52	0.62	0.81	1.08	1.53	1.76	2.67
2010	Refueling Loss	0.14	0.16	0.18	0.20	0.21	0.23	0.18	0.21	0.24	0.27	0.28	0.31	0.29	0.34	0.38	0.43	0.45	0.50
2010	Running Loss HC	0.09	0.20	0.31	0.47	0.54	0.84	0.10	0.23	0.36	0.53	0.61	0.90	0.16	0.36	0.56	0.84	0.97	1.48
2010	Resting Loss HC	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04
2010	Exhaust CO	19.38	19.38	19.89	24.66	26.95	34.63	24.73	24.73	25.37	31.47	34.39	44.20	21.99	21.99	23.18	26.42	27.84	32.15
2010	Exhaust NOx	1.25	1.26	1.28	1.30	1.31	1.33	1.67	1.69	1.71	1.74	1.75	1.78	4.29	4.14	3.99	3.84	3.79	3.63
2020	Combined NMHC	1.71	1.86	2.04	2.44	2.63	3.30	2.24	2.41	2.63	3.12	3.34	4.11	2.86	3.26	3.77	4.56	4.93	6.35
2020	Exhaust NMHC	1.37	1.37	1.38	1.54	1.61	1.83	1.83	1.83	1.84	2.06	2.16	2.46	1.85	1.85	1.89	1.98	2.01	2.11
2020	Evaporative HC	0.10	0.13	0.17	0.25	0.29	0.44	0.13	0.15	0.20	0.28	0.32	0.49	0.56	0.74	0.98	1.39	1.60	2.42
2020	Refueling Loss	0.14	0.16	0.18	0.20	0.21	0.23	0.18	0.21	0.24	0.27	0.28	0.31	0.29	0.34	0.38	0.43	0.45	0.50
2020	Running Loss HC	0.09	0.19	0.29	0.44	0.51	0.78	0.09	0.21	0.33	0.49	0.56	0.84	0.14	0.31	0.50	0.75	0.86	1.30
2020	Resting Loss HC	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
2020	Exhaust CO	19.38	19.38	19.89	24.66	26.95	34.63	24.53	24.53	25.18	31.26	34.18	43.98	20.88	20.88	22.01	25.09	26.44	30.53
2020	Exhaust NOx	1.24	1.25	1.27	1.29	1.30	1.32	1.62	1.64	1.66	1.69	1.70	1.73	3.95	3.82	3.68	3.55	3.49	3.35

TABLE 2.04: LOW ALTITUDE, 66-85F

TABLE 2.05

## HIGH ALTITUDE

EMISSION FACTORS (GRAMS/MILE)  
60-84F DIURNAL, 80F HOT SOAK

Cal. Year	Pollutant By Component	LDGV					LDGT					HDGV							
		7.0	8.0	9.0	10.0	10.4	11.5	7.0	8.0	9.0	10.0	10.4	11.5	7.0	8.0	9.0	10.0	10.4	11.5
1990	Combined NMHC	3.15	3.43	3.76	4.24	4.50	5.47	5.19	5.54	5.97	6.53	6.83	7.86	13.55	14.68	16.38	17.96	18.70	21.44
1990	Exhaust NMHC	2.36	2.36	2.36	2.47	2.52	2.66	3.93	3.93	3.94	4.05	4.10	4.24	9.52	9.52	9.53	9.56	9.58	9.62
1990	Evaporative HC	0.40	0.50	0.66	0.77	0.87	1.20	0.82	0.96	1.17	1.32	1.44	1.88	3.27	3.91	5.11	5.98	6.42	8.00
1990	Refueling Loss	0.14	0.16	0.19	0.21	0.22	0.25	0.19	0.22	0.25	0.28	0.29	0.33	0.31	0.36	0.42	0.47	0.49	0.55
1990	Running Loss HC	0.19	0.33	0.47	0.72	0.82	1.29	0.18	0.37	0.55	0.82	0.93	1.34	0.33	0.77	1.21	1.84	2.10	3.15
1990	Resting Loss HC	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.12	0.12	0.12	0.12	0.12	0.12
1990	Exhaust CO	32.54	32.54	32.70	35.60	36.95	41.18	54.07	54.07	54.27	57.28	58.66	62.87	217.38	217.38	217.79	220.24	221.31	224.57
1990	Exhaust NOx	1.63	1.63	1.64	1.64	1.65	1.65	2.03	2.03	2.03	2.03	2.03	2.03	4.54	4.48	4.43	4.38	4.36	4.30
1995	Combined NMHC	2.31	2.52	2.75	3.29	3.54	4.49	3.47	3.71	4.00	4.59	4.87	5.80	8.60	9.52	10.86	12.33	13.01	15.50
1995	Exhaust NMHC	1.73	1.73	1.73	1.88	1.95	2.15	2.69	2.69	2.70	2.86	2.93	3.15	5.69	5.69	5.70	5.75	5.78	5.84
1995	Evaporative HC	0.21	0.26	0.34	0.48	0.56	0.84	0.39	0.45	0.56	0.75	0.86	1.22	2.22	2.74	3.67	4.51	4.93	6.43
1995	Refueling Loss	0.13	0.15	0.17	0.19	0.20	0.23	0.17	0.20	0.23	0.26	0.27	0.31	0.29	0.34	0.39	0.44	0.46	0.51
1995	Running Loss HC	0.18	0.31	0.44	0.67	0.77	1.21	0.16	0.30	0.45	0.65	0.74	1.06	0.29	0.64	1.00	1.51	1.74	2.62
1995	Resting Loss HC	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.10	0.10	0.10	0.10	0.10	0.10
1995	Exhaust CO	22.72	22.72	22.88	26.73	28.54	34.45	36.26	36.26	36.52	40.84	42.84	49.19	141.19	141.19	141.73	145.03	146.48	150.88
1995	Exhaust NOx	1.58	1.59	1.61	1.63	1.63	1.65	1.86	1.87	1.88	1.89	1.89	1.90	4.18	4.11	4.03	3.96	3.93	3.85
2000	Combined NMHC	1.98	2.16	2.38	2.88	3.11	3.98	2.73	2.94	3.20	3.77	4.05	4.95	5.62	6.29	7.22	8.45	9.06	11.24
2000	Exhaust NMHC	1.51	1.51	1.51	1.67	1.74	1.96	2.12	2.12	2.12	2.32	2.41	2.67	3.59	3.59	3.61	3.69	3.73	3.82
2000	Evaporative HC	0.15	0.19	0.25	0.37	0.43	0.68	0.25	0.30	0.40	0.55	0.65	0.97	1.45	1.81	2.42	3.14	3.53	4.91
2000	Refueling Loss	0.13	0.15	0.17	0.19	0.20	0.22	0.17	0.20	0.23	0.26	0.27	0.30	0.28	0.33	0.38	0.43	0.44	0.50
2000	Running Loss HC	0.15	0.27	0.39	0.60	0.68	1.07	0.13	0.27	0.40	0.59	0.67	0.96	0.22	0.48	0.74	1.12	1.28	1.94
2000	Resting Loss HC	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.08	0.08	0.08	0.08	0.08	0.08
2000	Exhaust CO	19.99	19.99	20.13	24.33	26.31	32.89	28.12	28.12	28.32	33.40	35.79	43.62	86.25	86.25	87.05	91.92	94.05	100.53
2000	Exhaust NOx	1.38	1.40	1.42	1.44	1.44	1.47	1.79	1.80	1.83	1.85	1.85	1.88	3.92	3.82	3.71	3.61	3.57	3.46
2005	Combined NMHC	1.82	1.98	2.16	2.61	2.82	3.56	2.41	2.60	2.84	3.38	3.65	4.52	4.14	4.70	5.43	6.52	7.08	9.07
2005	Exhaust NMHC	1.43	1.43	1.43	1.59	1.66	1.88	1.91	1.91	1.91	2.13	2.22	2.51	2.57	2.57	2.59	2.69	2.73	2.85
2005	Evaporative HC	0.12	0.15	0.20	0.30	0.35	0.56	0.19	0.22	0.31	0.44	0.52	0.79	1.06	1.35	1.81	2.44	2.81	4.09
2005	Refueling Loss	0.13	0.15	0.17	0.19	0.20	0.22	0.17	0.20	0.23	0.26	0.27	0.30	0.28	0.32	0.37	0.42	0.44	0.49
2005	Running Loss HC	0.11	0.22	0.33	0.50	0.57	0.87	0.11	0.23	0.36	0.53	0.61	0.88	0.18	0.39	0.61	0.92	1.05	1.59
2005	Resting Loss HC	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.06	0.06	0.06	0.06	0.06	0.06
2005	Exhaust CO	19.43	19.43	19.57	23.93	25.99	32.83	25.34	25.34	25.53	31.07	33.69	42.35	54.68	54.68	55.58	61.08	63.48	70.79
2005	Exhaust NOx	1.28	1.30	1.32	1.34	1.35	1.37	1.69	1.71	1.74	1.76	1.77	1.80	3.67	3.55	3.43	3.32	3.28	3.16
2010	Combined NMHC	1.75	1.89	2.07	2.48	2.67	3.35	2.32	2.50	2.72	3.25	3.50	4.33	3.46	3.93	4.52	5.52	6.04	7.89
2010	Exhaust NMHC	1.40	1.40	1.40	1.56	1.63	1.85	1.86	1.86	1.86	2.08	2.17	2.46	2.21	2.21	2.24	2.35	2.40	2.53
2010	Evaporative HC	0.11	0.13	0.18	0.27	0.31	0.50	0.17	0.21	0.28	0.40	0.47	0.72	0.78	1.03	1.37	1.94	2.29	3.50
2010	Refueling Loss	0.13	0.15	0.17	0.19	0.20	0.22	0.17	0.20	0.23	0.26	0.27	0.30	0.27	0.32	0.37	0.41	0.43	0.48
2010	Running Loss HC	0.09	0.19	0.29	0.44	0.50	0.76	0.10	0.21	0.33	0.49	0.56	0.82	0.15	0.33	0.51	0.77	0.89	1.34
2010	Resting Loss HC	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04
2010	Exhaust CO	19.38	19.38	19.52	23.90	25.98	32.88	24.83	24.83	25.00	30.62	33.29	42.15	42.72	42.72	43.72	49.85	52.53	60.68
2010	Exhaust NOx	1.24	1.26	1.28	1.30	1.31	1.33	1.66	1.68	1.71	1.73	1.75	1.77	3.50	3.38	3.26	3.14	3.09	2.96
2020	Combined NMHC	1.72	1.86	2.02	2.42	2.61	3.26	2.26	2.43	2.64	3.15	3.38	4.17	3.35	3.79	4.33	5.25	5.73	7.41
2020	Exhaust NMHC	1.39	1.39	1.39	1.55	1.62	1.83	1.83	1.83	1.83	2.04	2.13	2.42	2.22	2.22	2.24	2.35	2.40	2.53
2020	Evaporative HC	0.10	0.13	0.17	0.25	0.30	0.47	0.16	0.20	0.26	0.38	0.44	0.67	0.71	0.94	1.25	1.77	2.09	3.18
2020	Refueling Loss	0.13	0.15	0.17	0.19	0.20	0.22	0.17	0.20	0.23	0.26	0.27	0.30	0.27	0.32	0.37	0.41	0.43	0.48
2020	Running Loss HC	0.08	0.18	0.27	0.41	0.47	0.72	0.09	0.20	0.31	0.46	0.52	0.77	0.13	0.29	0.46	0.69	0.80	1.19
2020	Resting Loss HC	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
2020	Exhaust CO	19.38	19.38	19.51	23.90	25.98	32.89	24.53	24.53	24.70	30.29	32.94	41.76	41.46	41.46	42.44	48.38	50.98	58.89
2020	Exhaust NOx	1.23	1.25	1.27	1.29	1.29	1.32	1.61	1.63	1.66	1.68	1.70	1.72	3.31	3.19	3.07	2.96	2.91	2.80

TABLE 2.05: HIGH ALTITUDE, 60-84F

TABLE 2.06

## HIGH ALTITUDE

EMISSION FACTORS (GRAMS/MILE)  
67-95F DIURNAL, 90F HOT SOAK

Cal. Year	Pollutant By Component	LDGV					LDGT					HDGV							
		7.0	8.0	9.0	10.0	10.4	11.5	7.0	8.0	9.0	10.0	10.4	11.5	7.0	8.0	9.0	10.0	10.4	11.5
1990	Combined NMHC	3.68	4.20	4.67	5.65	6.16	7.98	5.90	6.46	7.07	8.18	8.72	10.64	15.97	17.52	20.43	23.94	25.34	29.88
1990	Exhaust NMHC	2.56	2.56	2.58	2.70	2.77	2.96	4.20	4.20	4.22	4.35	4.42	4.61	10.05	10.06	10.09	10.13	10.15	10.19
1990	Evaporative HC	0.56	0.78	0.92	1.27	1.43	2.14	1.04	1.29	1.56	2.07	2.30	3.20	4.73	5.47	7.54	9.89	10.66	13.33
1990	Refueling Loss	0.16	0.19	0.21	0.23	0.24	0.27	0.22	0.25	0.28	0.31	0.32	0.36	0.36	0.41	0.46	0.52	0.54	0.60
1990	Running Loss HC	0.30	0.58	0.86	1.35	1.63	2.51	0.35	0.64	0.93	1.36	1.60	2.38	0.68	1.43	2.18	3.26	3.84	5.61
1990	Resting Loss HC	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.15	0.15	0.15	0.15	0.15	0.15
1990	Exhaust CO	38.45	38.45	39.49	42.99	44.83	50.78	62.92	62.92	64.23	67.66	69.47	75.11	261.88	261.88	264.24	266.94	268.12	271.71
1990	Exhaust NOx	1.56	1.56	1.56	1.57	1.57	1.58	1.92	1.92	1.92	1.92	1.92	1.92	4.19	4.16	4.10	4.05	4.03	3.97
1995	Combined NMHC	2.58	2.97	3.44	4.33	4.83	6.55	3.87	4.25	4.77	5.70	6.19	7.90	10.56	11.85	14.30	17.32	18.61	22.92
1995	Exhaust NMHC	1.78	1.78	1.81	1.98	2.06	2.30	2.79	2.80	2.83	3.03	3.12	3.39	6.14	6.15	6.20	6.26	6.28	6.34
1995	Evaporative HC	0.28	0.39	0.54	0.79	0.93	1.53	0.49	0.63	0.87	1.23	1.43	2.20	3.37	3.99	5.72	7.74	8.48	11.16
1995	Refueling Loss	0.15	0.17	0.19	0.22	0.22	0.25	0.20	0.23	0.26	0.29	0.30	0.33	0.34	0.39	0.44	0.49	0.51	0.56
1995	Running Loss HC	0.28	0.54	0.81	1.26	1.53	2.38	0.30	0.52	0.73	1.07	1.26	1.89	0.57	1.19	1.80	2.71	3.20	4.72
1995	Resting Loss HC	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.14	0.14	0.14	0.14	0.14	0.14
1995	Exhaust CO	24.24	24.24	25.35	30.32	32.79	41.21	39.45	39.45	41.20	46.48	49.07	57.62	171.88	171.88	175.07	178.71	180.30	185.14
1995	Exhaust NOx	1.58	1.59	1.61	1.62	1.63	1.65	1.84	1.85	1.85	1.86	1.87	1.87	3.95	3.90	3.82	3.75	3.72	3.65
2000	Combined NMHC	2.17	2.51	2.92	3.71	4.15	5.66	3.00	3.34	3.80	4.66	5.11	6.66	6.82	7.82	9.55	11.87	12.98	16.87
2000	Exhaust NMHC	1.53	1.53	1.55	1.74	1.82	2.08	2.16	2.16	2.20	2.42	2.53	2.85	3.80	3.81	3.89	3.98	4.01	4.11
2000	Evaporative HC	0.20	0.28	0.40	0.60	0.71	1.23	0.33	0.44	0.63	0.92	1.09	1.73	2.17	2.66	3.80	5.32	6.01	8.60
2000	Refueling Loss	0.15	0.17	0.19	0.21	0.22	0.24	0.20	0.23	0.25	0.28	0.29	0.33	0.33	0.37	0.42	0.47	0.49	0.54
2000	Running Loss HC	0.24	0.48	0.71	1.10	1.33	2.04	0.26	0.46	0.66	0.97	1.14	1.70	0.42	0.88	1.33	2.00	2.37	3.52
2000	Resting Loss HC	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.10	0.10	0.10	0.10	0.10	0.10
2000	Exhaust CO	20.40	20.40	21.42	26.96	29.70	39.19	29.24	29.24	30.68	37.25	40.49	51.58	100.58	100.58	105.27	110.64	112.99	120.12
2000	Exhaust NOx	1.40	1.41	1.43	1.45	1.46	1.48	1.80	1.81	1.83	1.85	1.86	1.88	3.81	3.74	3.63	3.53	3.49	3.38
2005	Combined NMHC	1.96	2.24	2.57	3.24	3.59	4.82	2.61	2.91	3.33	4.12	4.53	5.92	4.95	5.80	7.14	9.07	10.05	13.57
2005	Exhaust NMHC	1.43	1.43	1.46	1.64	1.72	1.98	1.91	1.91	1.95	2.19	2.31	2.65	2.66	2.67	2.77	2.87	2.91	3.03
2005	Evaporative HC	0.16	0.22	0.31	0.47	0.57	0.99	0.25	0.33	0.49	0.73	0.86	1.39	1.55	1.98	2.81	4.04	4.67	7.09
2005	Refueling Loss	0.15	0.17	0.19	0.21	0.22	0.24	0.20	0.23	0.25	0.28	0.29	0.33	0.32	0.37	0.41	0.46	0.48	0.53
2005	Running Loss HC	0.19	0.38	0.57	0.87	1.04	1.57	0.21	0.40	0.59	0.87	1.02	1.51	0.34	0.71	1.08	1.62	1.92	2.84
2005	Resting Loss HC	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.08	0.08	0.08	0.08	0.08	0.08
2005	Exhaust CO	19.43	19.43	20.45	26.22	29.06	38.94	25.34	25.34	26.73	34.01	37.59	49.99	58.96	58.96	64.25	70.31	72.96	81.01
2005	Exhaust NOx	1.30	1.32	1.34	1.36	1.36	1.39	1.72	1.73	1.76	1.78	1.79	1.82	3.63	3.56	3.44	3.33	3.28	3.16
2010	Combined NMHC	1.87	2.11	2.40	2.99	3.30	4.36	2.49	2.77	3.15	3.88	4.26	5.52	3.96	4.69	5.76	7.38	8.25	11.47
2010	Exhaust NMHC	1.40	1.40	1.43	1.61	1.69	1.95	1.86	1.86	1.90	2.14	2.25	2.60	2.21	2.23	2.34	2.45	2.50	2.64
2010	Evaporative HC	0.14	0.19	0.28	0.41	0.49	0.85	0.22	0.30	0.43	0.64	0.76	1.22	1.11	1.47	2.08	3.09	3.66	5.94
2010	Refueling Loss	0.15	0.17	0.19	0.21	0.22	0.24	0.20	0.23	0.25	0.28	0.30	0.33	0.32	0.36	0.41	0.46	0.47	0.52
2010	Running Loss HC	0.16	0.32	0.48	0.73	0.87	1.29	0.18	0.36	0.53	0.78	0.92	1.35	0.28	0.58	0.88	1.32	1.57	2.31
2010	Resting Loss HC	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.05	0.05	0.05	0.05	0.05
2010	Exhaust CO	19.38	19.38	20.38	26.19	29.06	39.06	24.83	24.83	26.09	33.55	37.23	50.05	42.72	42.72	48.62	55.37	58.33	67.29
2010	Exhaust NOx	1.26	1.27	1.29	1.32	1.32	1.35	1.69	1.70	1.73	1.76	1.77	1.80	3.50	3.42	3.30	3.18	3.13	3.01
2020	Combined NMHC	1.83	2.05	2.32	2.87	3.16	4.15	2.40	2.66	3.00	3.68	4.03	5.18	3.77	4.41	5.35	6.76	7.52	10.32
2020	Exhaust NMHC	1.39	1.39	1.42	1.60	1.68	1.93	1.83	1.83	1.86	2.10	2.21	2.55	2.22	2.23	2.34	2.46	2.50	2.64
2020	Evaporative HC	0.13	0.18	0.25	0.38	0.45	0.78	0.20	0.27	0.39	0.57	0.68	1.08	0.98	1.30	1.83	2.71	3.21	5.20
2020	Refueling Loss	0.15	0.17	0.19	0.21	0.22	0.24	0.20	0.23	0.26	0.28	0.30	0.33	0.31	0.36	0.41	0.45	0.47	0.52
2020	Running Loss HC	0.14	0.29	0.44	0.67	0.79	1.17	0.16	0.32	0.48	0.70	0.82	1.20	0.23	0.49	0.74	1.11	1.31	1.93
2020	Resting Loss HC	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03
2020	Exhaust CO	19.38	19.38	20.37	26.19	29.06	39.06	24.53	24.53	25.78	33.20	36.86	49.61	41.46	41.46	47.19	53.74	56.61	65.31
2020	Exhaust NOx	1.25	1.26	1.28	1.30	1.31	1.33	1.64	1.65	1.68	1.71	1.72	1.75	3.31	3.23	3.11	3.00	2.95	2.84

TABLE 2.06: HIGH ALTITUDE, 67-95F

TABLE 2.07

## HIGH ALTITUDE

EMISSION FACTORS (GRAMS/MILE)  
71-92F DIURNAL, 88F HOT SOAK

Cal. Year	Pollutant By Component	LDGV					LDGT					HDGV							
		7.0	8.0	9.0	10.0	10.4	11.5	7.0	8.0	9.0	10.0	10.4	11.5	7.0	8.0	9.0	10.0	10.4	11.5
1990	Combined NMHC	3.54	3.98	4.52	5.26	5.70	7.22	5.71	6.21	6.87	7.72	8.19	9.83	15.48	16.89	19.55	22.47	23.65	27.83
1990	Exhaust NMHC	2.54	2.54	2.56	2.68	2.74	2.93	4.17	4.17	4.19	4.32	4.39	4.58	10.00	10.00	10.04	10.07	10.09	10.13
1990	Evaporative HC	0.49	0.66	0.90	1.07	1.21	1.73	0.96	1.16	1.48	1.78	1.97	2.66	4.43	5.09	6.96	8.84	9.50	11.96
1990	Refueling Loss	0.16	0.19	0.21	0.23	0.24	0.27	0.22	0.25	0.28	0.31	0.32	0.36	0.36	0.41	0.47	0.52	0.54	0.60
1990	Running Loss HC	0.25	0.51	0.76	1.17	1.40	2.20	0.28	0.56	0.83	1.22	1.42	2.15	0.54	1.24	1.93	2.89	3.36	4.99
1990	Resting Loss HC	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.15	0.15	0.15	0.15	0.15	0.15
1990	Exhaust CO	37.73	37.73	38.76	42.26	44.07	49.87	61.84	61.84	63.11	66.57	68.34	73.85	257.07	257.07	259.30	261.99	263.16	266.73
1990	Exhaust NOx	1.56	1.57	1.57	1.58	1.58	1.59	1.93	1.93	1.93	1.93	1.93	1.93	4.22	4.18	4.13	4.08	4.06	4.00
1995	Combined NMHC	2.50	2.84	3.24	4.02	4.43	5.90	3.75	4.10	4.54	5.37	5.78	7.25	10.15	11.33	13.44	16.04	17.12	20.95
1995	Exhaust NMHC	1.77	1.77	1.80	1.97	2.05	2.30	2.78	2.78	2.82	3.02	3.10	3.38	6.10	6.10	6.15	6.21	6.23	6.29
1995	Evaporative HC	0.25	0.33	0.45	0.65	0.76	1.19	0.45	0.55	0.72	1.02	1.17	1.75	3.13	3.68	5.12	6.81	7.45	9.77
1995	Refueling Loss	0.15	0.17	0.19	0.22	0.22	0.25	0.20	0.23	0.26	0.29	0.30	0.33	0.34	0.39	0.44	0.49	0.51	0.56
1995	Running Loss HC	0.24	0.47	0.71	1.10	1.31	2.08	0.24	0.45	0.66	0.96	1.12	1.72	0.46	1.02	1.60	2.40	2.80	4.19
1995	Resting Loss HC	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.13	0.13	0.13	0.13	0.13	0.13
1995	Exhaust CO	24.06	24.06	25.22	30.12	32.55	40.78	39.06	39.06	40.81	46.04	48.59	56.97	168.54	168.54	171.56	175.18	176.77	181.59
1995	Exhaust NOx	1.58	1.59	1.61	1.62	1.63	1.65	1.84	1.85	1.86	1.86	1.87	1.88	3.97	3.92	3.84	3.77	3.74	3.66
2000	Combined NMHC	2.11	2.40	2.76	3.46	3.82	5.12	2.91	3.22	3.61	4.39	4.78	6.14	6.55	7.45	8.90	10.91	11.85	15.16
2000	Exhaust NMHC	1.52	1.52	1.55	1.74	1.82	2.07	2.15	2.15	2.19	2.42	2.52	2.84	3.78	3.78	3.86	3.95	3.98	4.09
2000	Evaporative HC	0.17	0.23	0.33	0.49	0.58	0.95	0.29	0.38	0.51	0.75	0.89	1.37	2.00	2.43	3.34	4.63	5.20	7.31
2000	Refueling Loss	0.15	0.17	0.19	0.21	0.22	0.24	0.20	0.23	0.26	0.28	0.30	0.33	0.33	0.38	0.42	0.47	0.49	0.54
2000	Running Loss HC	0.20	0.41	0.63	0.96	1.15	1.79	0.21	0.40	0.59	0.87	1.01	1.54	0.34	0.76	1.17	1.77	2.07	3.12
2000	Resting Loss HC	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.10	0.10	0.10	0.10	0.10	0.10
2000	Exhaust CO	20.35	20.35	21.45	26.91	29.60	38.87	29.10	29.10	30.61	37.10	40.28	51.13	99.02	99.02	103.45	108.79	111.13	118.22
2000	Exhaust NOx	1.40	1.41	1.43	1.45	1.46	1.48	1.80	1.81	1.83	1.85	1.86	1.88	3.82	3.74	3.63	3.53	3.49	3.38
2005	Combined NMHC	1.91	2.15	2.46	3.05	3.36	4.42	2.53	2.82	3.17	3.91	4.26	5.50	4.74	5.51	6.64	8.32	9.15	12.10
2005	Exhaust NMHC	1.43	1.43	1.46	1.64	1.73	1.98	1.91	1.91	1.96	2.20	2.31	2.65	2.65	2.65	2.75	2.85	2.89	3.02
2005	Evaporative HC	0.13	0.19	0.26	0.39	0.46	0.77	0.21	0.29	0.39	0.60	0.71	1.12	1.42	1.80	2.45	3.49	4.02	5.95
2005	Refueling Loss	0.15	0.17	0.19	0.21	0.22	0.24	0.20	0.23	0.26	0.28	0.30	0.33	0.32	0.37	0.41	0.46	0.48	0.53
2005	Running Loss HC	0.16	0.33	0.51	0.77	0.91	1.39	0.17	0.35	0.53	0.79	0.91	1.37	0.28	0.62	0.96	1.44	1.68	2.53
2005	Resting Loss HC	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.08	0.08	0.08	0.08	0.08	0.08
2005	Exhaust CO	19.43	19.43	20.53	26.21	29.01	38.77	25.34	25.34	26.82	34.00	37.52	49.65	58.49	58.49	63.50	69.53	72.17	80.17
2005	Exhaust NOx	1.30	1.32	1.33	1.35	1.36	1.38	1.72	1.73	1.76	1.78	1.79	1.82	3.64	3.55	3.44	3.32	3.28	3.16
2010	Combined NMHC	1.82	2.04	2.31	2.84	3.11	4.05	2.43	2.69	3.02	3.70	4.03	5.17	3.81	4.47	5.36	6.79	7.54	10.19
2010	Exhaust NMHC	1.40	1.40	1.43	1.61	1.69	1.95	1.86	1.86	1.90	2.14	2.26	2.60	2.21	2.22	2.33	2.45	2.50	2.63
2010	Evaporative HC	0.12	0.16	0.23	0.34	0.41	0.67	0.19	0.26	0.35	0.53	0.63	0.99	1.00	1.33	1.79	2.66	3.14	4.91
2010	Refueling Loss	0.15	0.17	0.19	0.21	0.22	0.24	0.20	0.23	0.26	0.29	0.30	0.33	0.32	0.37	0.41	0.46	0.48	0.53
2010	Running Loss HC	0.13	0.28	0.43	0.65	0.77	1.16	0.15	0.31	0.48	0.71	0.82	1.23	0.23	0.51	0.79	1.18	1.38	2.07
2010	Resting Loss HC	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.05	0.05	0.05	0.05	0.05
2010	Exhaust CO	19.38	19.38	20.46	26.19	29.01	38.78	24.83	24.83	26.20	33.55	37.17	49.70	42.72	42.72	48.30	55.02	57.96	66.88
2010	Exhaust NOx	1.26	1.27	1.29	1.31	1.32	1.34	1.68	1.70	1.73	1.75	1.77	1.80	3.50	3.42	3.29	3.17	3.12	3.00
2020	Combined NMHC	1.79	1.99	2.24	2.75	3.00	3.87	2.35	2.59	2.90	3.53	3.84	4.89	3.64	4.22	5.03	6.29	6.94	9.26
2020	Exhaust NMHC	1.39	1.39	1.42	1.60	1.68	1.93	1.83	1.83	1.87	2.10	2.21	2.55	2.22	2.22	2.33	2.45	2.50	2.63
2020	Evaporative HC	0.11	0.15	0.22	0.32	0.38	0.62	0.18	0.24	0.32	0.48	0.56	0.88	0.89	1.18	1.59	2.35	2.77	4.32
2020	Refueling Loss	0.15	0.17	0.19	0.21	0.22	0.24	0.20	0.23	0.26	0.29	0.30	0.33	0.32	0.36	0.41	0.46	0.47	0.52
2020	Running Loss HC	0.12	0.26	0.40	0.60	0.70	1.06	0.13	0.28	0.43	0.64	0.75	1.11	0.19	0.43	0.67	1.01	1.17	1.75
2020	Resting Loss HC	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03
2020	Exhaust CO	19.38	19.38	20.46	26.19	29.01	38.78	24.53	24.53	25.89	33.20	36.80	49.26	41.46	41.46	46.88	53.40	56.25	64.91
2020	Exhaust NOx	1.25	1.26	1.28	1.30	1.31	1.33	1.64	1.65	1.68	1.71	1.72	1.75	3.31	3.22	3.10	2.99	2.95	2.83

TABLE 2.07: HIGH ALTITUDE, 71-92F

TABLE 2.08

## HIGH ALTITUDE

EMISSION FACTORS (GRAMS/MILE)  
66-85F DIURNAL, 82F HOT SOAK

Cal. Year	Pollutant By Component	LDGV					LDGT					HDGV							
		7.0	8.0	9.0	10.0	10.4	11.5	7.0	8.0	9.0	10.0	10.4	11.5	7.0	8.0	9.0	10.0	10.4	11.5
1990	Combined NMHC	3.22	3.51	3.86	4.50	4.68	5.74	5.28	5.65	6.11	6.83	7.02	8.16	13.94	15.14	17.02	18.84	19.51	22.48
1990	Exhaust NMHC	2.40	2.40	2.41	2.53	2.58	2.74	3.99	3.99	4.00	4.12	4.17	4.33	9.65	9.65	9.66	9.70	9.71	9.76
1990	Evaporative HC	0.40	0.50	0.66	0.89	0.88	1.22	0.83	0.97	1.18	1.46	1.47	1.91	3.48	4.15	5.46	6.52	6.86	8.55
1990	Refueling Loss	0.15	0.17	0.19	0.22	0.23	0.25	0.20	0.23	0.26	0.29	0.30	0.34	0.33	0.38	0.44	0.49	0.51	0.57
1990	Running Loss HC	0.19	0.36	0.52	0.79	0.91	1.45	0.19	0.40	0.60	0.88	1.01	1.50	0.35	0.84	1.33	2.01	2.30	3.48
1990	Resting Loss HC	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.12	0.12	0.12	0.12	0.12	0.12
1990	Exhaust CO	33.72	33.72	34.17	37.26	38.73	43.37	55.82	55.82	56.36	59.53	61.01	65.55	227.40	227.40	228.32	230.84	231.95	235.30
1990	Exhaust NOx	1.61	1.61	1.62	1.63	1.63	1.63	2.00	2.00	2.00	2.00	2.00	2.00	4.45	4.40	4.34	4.29	4.27	4.22
1995	Combined NMHC	2.35	2.57	2.83	3.40	3.66	4.70	3.53	3.77	4.09	4.69	4.98	6.01	8.91	9.89	11.38	12.96	13.65	16.34
1995	Exhaust NMHC	1.74	1.74	1.75	1.91	1.98	2.19	2.71	2.71	2.73	2.90	2.98	3.21	5.80	5.80	5.82	5.87	5.89	5.96
1995	Evaporative HC	0.22	0.26	0.34	0.48	0.56	0.84	0.40	0.46	0.56	0.74	0.85	1.22	2.39	2.92	3.94	4.86	5.26	6.84
1995	Refueling Loss	0.14	0.16	0.18	0.20	0.21	0.24	0.18	0.21	0.24	0.27	0.28	0.32	0.31	0.36	0.41	0.46	0.48	0.53
1995	Running Loss HC	0.19	0.34	0.49	0.74	0.85	1.37	0.17	0.32	0.48	0.71	0.80	1.20	0.31	0.70	1.10	1.66	1.90	2.90
1995	Resting Loss HC	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.11	0.11	0.11	0.11	0.11	0.11
1995	Exhaust CO	23.02	23.02	23.55	27.71	29.69	36.22	36.89	36.89	37.65	42.24	44.39	51.28	148.06	148.06	149.31	152.71	154.20	158.72
1995	Exhaust NOx	1.58	1.59	1.61	1.63	1.63	1.65	1.86	1.86	1.87	1.88	1.88	1.89	4.12	4.05	3.97	3.90	3.87	3.80
2000	Combined NMHC	2.01	2.20	2.44	2.96	3.21	4.15	2.76	2.98	3.26	3.84	4.13	5.13	5.80	6.51	7.53	8.84	9.44	11.79
2000	Exhaust NMHC	1.51	1.51	1.53	1.69	1.77	1.99	2.13	2.13	2.15	2.35	2.44	2.72	3.64	3.64	3.68	3.76	3.80	3.89
2000	Evaporative HC	0.15	0.18	0.25	0.36	0.43	0.68	0.26	0.30	0.39	0.54	0.63	0.96	1.53	1.91	2.57	3.33	3.70	5.15
2000	Refueling Loss	0.14	0.16	0.18	0.20	0.21	0.23	0.18	0.21	0.24	0.27	0.28	0.31	0.30	0.35	0.39	0.44	0.46	0.51
2000	Running Loss HC	0.16	0.29	0.43	0.65	0.75	1.20	0.14	0.29	0.43	0.64	0.73	1.08	0.24	0.52	0.81	1.22	1.40	2.15
2000	Resting Loss HC	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.09	0.09	0.09	0.09	0.09	0.09
2000	Exhaust CO	20.07	20.07	20.58	25.14	27.33	34.63	28.34	28.34	29.03	34.52	37.12	45.77	89.44	89.44	91.29	96.29	98.48	105.14
2000	Exhaust NOx	1.38	1.40	1.42	1.44	1.45	1.47	1.79	1.81	1.83	1.85	1.86	1.88	3.89	3.79	3.69	3.58	3.54	3.43
2005	Combined NMHC	1.83	2.00	2.21	2.67	2.89	3.69	2.43	2.63	2.89	3.45	3.72	4.66	4.24	4.83	5.64	6.79	7.34	9.47
2005	Exhaust NMHC	1.43	1.43	1.44	1.61	1.68	1.91	1.91	1.91	1.93	2.15	2.25	2.55	2.59	2.59	2.63	2.73	2.78	2.89
2005	Evaporative HC	0.12	0.14	0.20	0.29	0.35	0.55	0.19	0.22	0.30	0.42	0.50	0.79	1.11	1.41	1.89	2.56	2.90	4.25
2005	Refueling Loss	0.14	0.16	0.18	0.20	0.21	0.23	0.18	0.21	0.24	0.27	0.28	0.31	0.29	0.34	0.39	0.43	0.45	0.50
2005	Running Loss HC	0.11	0.24	0.36	0.54	0.62	0.97	0.12	0.25	0.39	0.58	0.66	0.98	0.19	0.43	0.67	1.00	1.15	1.76
2005	Resting Loss HC	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.06	0.06	0.06	0.06	0.06	0.06
2005	Exhaust CO	19.43	19.43	19.95	24.69	26.95	34.56	25.34	25.34	26.03	32.04	34.91	44.51	55.64	55.64	57.71	63.36	65.84	73.35
2005	Exhaust NOx	1.29	1.30	1.32	1.34	1.35	1.37	1.70	1.72	1.74	1.77	1.78	1.81	3.66	3.55	3.43	3.32	3.27	3.15
2010	Combined NMHC	1.76	1.91	2.11	2.54	2.74	3.46	2.34	2.53	2.77	3.31	3.57	4.46	3.51	4.00	4.65	5.69	6.20	8.17
2010	Exhaust NMHC	1.40	1.40	1.41	1.58	1.65	1.88	1.86	1.86	1.88	2.10	2.20	2.51	2.21	2.21	2.27	2.38	2.43	2.56
2010	Evaporative HC	0.11	0.13	0.18	0.26	0.31	0.49	0.17	0.21	0.27	0.39	0.46	0.71	0.80	1.05	1.41	2.00	2.33	3.60
2010	Refueling Loss	0.14	0.16	0.18	0.20	0.21	0.23	0.18	0.21	0.24	0.27	0.28	0.31	0.29	0.34	0.38	0.43	0.45	0.50
2010	Running Loss HC	0.09	0.20	0.31	0.47	0.54	0.84	0.10	0.23	0.36	0.53	0.61	0.90	0.16	0.36	0.56	0.84	0.97	1.48
2010	Resting Loss HC	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04
2010	Exhaust CO	19.38	19.38	19.89	24.66	26.95	34.63	24.83	24.83	25.48	31.60	34.53	44.38	42.72	42.72	45.03	51.33	54.09	62.47
2010	Exhaust NOx	1.25	1.26	1.28	1.30	1.31	1.33	1.67	1.69	1.71	1.74	1.75	1.78	3.50	3.39	3.26	3.14	3.10	2.97
2020	Combined NMHC	1.73	1.88	2.06	2.48	2.67	3.36	2.28	2.46	2.68	3.20	3.45	4.29	3.39	3.85	4.44	5.39	5.86	7.63
2020	Exhaust NMHC	1.39	1.39	1.40	1.57	1.64	1.87	1.83	1.83	1.84	2.06	2.16	2.46	2.22	2.22	2.27	2.38	2.43	2.56
2020	Evaporative HC	0.10	0.13	0.17	0.25	0.29	0.46	0.17	0.20	0.26	0.37	0.43	0.66	0.73	0.96	1.28	1.82	2.11	3.25
2020	Refueling Loss	0.14	0.16	0.18	0.20	0.21	0.23	0.18	0.21	0.24	0.27	0.28	0.31	0.29	0.34	0.38	0.43	0.45	0.50
2020	Running Loss HC	0.09	0.19	0.29	0.44	0.51	0.78	0.09	0.21	0.33	0.49	0.56	0.84	0.14	0.31	0.50	0.75	0.86	1.30
2020	Resting Loss HC	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
2020	Exhaust CO	19.38	19.38	19.89	24.66	26.95	34.63	24.53	24.53	25.18	31.26	34.18	43.98	41.46	41.46	43.71	49.82	52.49	60.62
2020	Exhaust NOx	1.24	1.25	1.27	1.29	1.30	1.32	1.62	1.64	1.66	1.69	1.70	1.73	3.31	3.19	3.08	2.96	2.92	2.80

TABLE 2.08: HIGH ALTITUDE, 66-85F