

Santiago Vehicle Activity Study

Conducted December 2001

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Acknowledgements

We gratefully acknowledge the financial support provided by the US Environmental Protection Agency and CONAMA, the air pollution control agency for Chile, for this study. We particularly want to thank Ms. Jane Metcalf, U.S. EPA Office of International Affairs, and Mr. John Koupal, U.S. EPA Office of Mobile Sources, as well as Mr. Gianni Lopez, Director of CONAMA, and Dr. Pedro Oyola, advisor to CONAMA for their active individual support of the project.

Chapter One: Overview

A necessary information base for the calculation of on-road vehicular emissions is the distribution of technologies that are operating on the roads and at the times of interest. This distribution must relate to the amount of driving that is being carried out by each type of technology. A simple approach is to randomly count the number and types of vehicles that are operating on the roads and at the times of interest. Such a count will relate to the rate of driving of the various vehicular technologies recorded since they will be observed in the proportion to the amount of driving that is occurring.

A problem with this approach is the difficulty in making such counts on busy multilane roads and identifying the attendant technologies in real time. This problem can be partially remedied by video taping the traffic. The videotapes can then be studied at leisure and in slow motion to achieve accurate vehicle counts and to identify attendant technologies. Modern digital tapes can be freeze-framed as needed producing relatively high-resolution pictures for careful study if necessary. This approach was used in Los Angeles [Malcolm et al., 2002] to acquire license plate numbers with excellent results.

Even with the resulting resolution, however, it is very difficult or impossible with respect to most vehicles to determine actual engine technologies, fuel, and emissions controls. The odometer readings of the vehicles are also not accessible using this approach. Even with this limitation, it is easy to review videotapes to establish the relative numbers of passenger cars compared to trucks, buses, and taxis and to make a reasonable estimate of vehicle sizes and even ages by simply carefully observing the collected tapes.

The variety of technologies with respect to passenger cars can vary widely in the modern fleet. In a developing country, the passenger vehicle fleet can contain uncontrolled, carbureted vehicles operating alongside modern multi-point injection, 3-way catalyst vehicles with emissions that are 1% of the uncontrolled vehicles. It is important to understand the relative proportions of passenger vehicle technologies to properly evaluate the emissions of the on-road fleet. Vehicle registration information is often used to establish these types of information in the United States and elsewhere. Unfortunately, such information is often not available or unreliable in developing countries. An alternate process is to examine an appropriate subset of the passenger vehicle fleet in the region of interest to establish information on the distribution of specific passenger vehicle technologies. Since stopping vehicles for this purpose is not normally practical, an alternate approach is to examine vehicles that are parked at representative locations in the region of interest. The assumption that must be made is that the observed vehicular technologies found in grocery store, shopping center, and industrial parking lots and roadside parking are reasonably representative of vehicular activity.

The range of vehicular technologies associated with trucks and buses are typically more limited today especially in developing countries. Thus, the videotape information is adequate for most analysis. If the variety of vehicular technologies associated with buses and trucks should be significantly subdivided, then trucks and buses can be randomly inspected to establish the distribution of technologies. Care must be taken in this process to examine these technologies in a manner that produces results in reasonable proportion to vehicular activity.

This study consists of the collection of data by video taping vehicles on roads and by randomly sampling parked vehicles. The parked car sampling process was carried out over several days and collected data on close to a thousand vehicles. The video taping process allowed the collection of information on several thousand vehicles.

Chapter Two: Videotaping Vehicular Activity

Digital video cameras were used for the capture of on-road traffic. A two-person team was used to setup and operate the videotaping cameras. Two cameras were used to capture information at each location. One camera was set up to observe all lanes of traffic and a second camera was set up to observe vehicle detail and vehicle occupancy. The general tapes were reviewed to make appropriate vehicular counts for traffic analysis. The close-up tapes will be reserved for later analysis.

Videotaping was carried out over six days within a period of 6 hours each day. The three locations videotaped consisted of a generally poor area, a commercial area, and an upper income area. In each of these areas, three types of roads were videotaped consisting of a major arterial (or freeway if available), a local arterial, and a residential street. This results in videotapes collected from nine representative locations in the region of interest. In order to create as much randomness in the observations as possible, videotaping was carried out for 20-minute intervals in each hour and then the cameras were rotated to the next roadway type.

The videotaping was alternated on different days between the morning and the evening. The morning hours used were 7am to 1pm. one day and the evening hours used were 3pm until 9pm.¹ Three 20 minute tapings were collected on each one-hour digital videotape resulting in 24 videotapes for the two cameras at the nine locations over six days.

The videotapes were reviewed in the office and the observed traffic broken into 12 categories indicated by an "X" in Table 2.1. Figure 2.1 shows the videotaping process.

Table 2.1: Vehicle Technologies Recorded from Digital Videotapes

Vehicle Size	Passenger Cars	Trucks	Buses	Taxis	Motorcycles
Small	X	n/a	X	X	X
Medium	X	X	X	X	n/a
Large	X	X	X	X	n/a

Tables 2.2a-c show the results from the videotaping for the nine sites that were monitored.

¹ The intention is to record a morning and evening in each location of interest. In the case of Santiago, Chile, the desired time order was disrupted so that the videotaping in the upper income area occurred in the morning hours while the videotaping in the lower income area occurred in the evening hours..



Figure 2.1: Typical Videotaping Process

Table 2.2a: Maipu District Vehicle Counts

Maipu/Highway/2 Lanes – 1 Direction												
Time	Passenger Vehicles			Taxis	Trucks		Buses			Motor-cycles	Traffic Flow (veh./hr)	Date
	Small	Medium	Large		Medium	Large	Small	Medium	Large			
9:30 AM	12.8%	62.6%	4.6%	5.6%	4.1%	1.0%	0.0%	2.1%	6.7%	0.5%	558	12/2/01
9:30 AM	18.7%	52.4%	9.9%	2.9%	7.3%	0.7%	0.0%	2.2%	5.9%	0.0%	738	12/3/01
12:15 AM	13.5%	57.7%	8.8%	5.1%	7.0%	1.4%	1.4%	0.9%	2.8%	1.4%	626	12/2/01
12:15 AM	20.2%	57.1%	7.1%	1.6%	7.1%	1.2%	0.0%	3.6%	1.6%	0.4%	714	12/3/01
Maipu/Arterial/3 Lanes – 1 Direction												
Time	Passenger Vehicles			Taxis	Trucks		Buses			Motor-cycles	Traffic Flow (veh./hr)	Date
	Small	Medium	Large		Medium	Large	Small	Medium	Large			
7:30 AM	11.9%	76.2%	5.3%	2.0%	1.6%	0.2%	0.2%	0.6%	0.8%	1.2%	2,011	12/2/01
7:30 AM	31.6%	52.1%	9.2%	2.7%	1.9%	0.2%	0.0%	0.2%	0.9%	1.2%	1,755	12/3/01
10:30 AM	22.7%	60.6%	6.4%	1.8%	6.0%	1.1%	0.4%	0.0%	0.0%	1.1%	827	12/2/01
10:30 AM	25.9%	52.5%	10.6%	2.7%	6.1%	0.0%	0.8%	0.0%	0.0%	1.5%	789	12/3/01
1:30 PM	14.7%	59.0%	12.0%	3.8%	5.3%	1.1%	3.0%	0.4%	0.4%	0.4%	773	12/2/01
Maipu/Residential/2 Lanes – 1 Direction												
Time	Passenger Vehicles			Taxis	Trucks		Buses			Motor-cycles	Traffic Flow (veh./hr)	Date
	Small	Medium	Large		Medium	Large	Small	Medium	Large			
8:30 AM	6.1%	55.0%	3.8%	26.7%	1.5%	1.5%	3.1%	2.3%	0.0%	0.0%	387	12/2/01
8:30 AM	15.6%	45.0%	4.6%	29.4%	5.5%	0.0%	0.0%	0.0%	0.0%	0.0%	322	12/3/01
11:30 AM	4.1%	45.9%	6.1%	35.7%	4.1%	1.0%	3.1%	0.0%	0.0%	0.0%	277	12/2/01
11:30 AM	14.1%	43.5%	5.4%	33.7%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	261	12/3/01
Overall:	16.3%	55.4%	7.2%	11.8%	4.7%	0.7%	0.9%	0.9%	1.5%	0.6%	772	

Table 2.2b: Santiago District Vehicle Counts

Santiago/Highway/3 Lanes - 1 Direction												
Time	Passenger Vehicles			Taxis	Trucks		Buses			Motor-cycles	Traffic Flow (veh./hr)	Date
	Small	Medium	Large		Medium	Large	Small	Medium	Large			
3:30 PM	5.4%	64.5%	6.3%	5.2%	15.5%	1.4%	0.1%	0.1%	0.7%	0.8%	3,443	11/29/01
3:30 PM	15.1%	53.4%	8.1%	4.2%	15.8%	1.7%	0.1%	0.1%	0.7%	0.8%	3,791	11/30/01
6:30 PM	9.4%	69.1%	3.8%	3.1%	9.4%	3.2%	0.2%	0.1%	0.8%	1.0%	4,556	11/29/01
6:30 PM	16.0%	60.8%	6.0%	3.5%	8.5%	3.5%	0.2%	0.6%	0.1%	0.8%	4,564	11/30/01
Santiago/Arterial/5 Lanes – 1 Direction												
Time	Passenger Vehicles			Taxis	Trucks		Buses			Motor-cycles	Traffic Flow (veh./hr)	Date
	Small	Medium	Large		Medium	Large	Small	Medium	Large			
4:30 PM	3.9%	45.9%	8.6%	15.6%	0.5%	0.0%	0.2%	0.6%	24.1%	0.8%	1,732	11/29/01
4:30 PM	7.0%	48.0%	4.7%	12.8%	1.1%	0.0%	0.3%	0.6%	25.0%	0.5%	1,881	
7:30 PM	9.0%	51.1%	4.6%	11.9%	0.5%	0.0%	0.1%	0.4%	20.9%	1.5%	2,497	11/29/01
7:30 PM	9.3%	47.4%	4.8%	15.7%	0.7%	0.0%	0.4%	0.7%	19.7%	1.3%	2,371	
Santiago/Residential/2 Lanes – 1 Direction												
Time	Passenger Vehicles			Taxis	Trucks		Buses			Motor-cycles	Traffic Flow (veh./hr)	Date
	Small	Medium	Large		Medium	Large	Small	Medium	Large			
5:30 PM	1.1%	68.5%	5.6%	10.1%	9.0%	0.0%	0.0%	0.0%	0.0%	5.6%	242	11/29/01
5:30 PM	18.4%	59.2%	6.1%	7.1%	3.1%	1.0%	0.0%	0.0%	1.0%	4.1%	242	11/30/01
8:30 PM	4.2%	79.2%	2.1%	10.4%	0.0%	2.1%	0.0%	0.0%	0.0%	2.1%	130	11/29/01
8:30 PM	14.5%	71.0%	4.3%	4.3%	2.9%	1.4%	0.0%	0.0%	0.0%	1.4%	160	11/30/01
Overall:	9.4%	59.8%	5.4%	8.7%	5.6%	1.2%	0.1%	0.3%	7.8%	1.7%	2,134	

Table 2.2c: Vitacura District Vehicle Counts

Vitacura/Highway/3 Lanes –1 Direction												
Time	Passenger Vehicles			Taxis	Trucks		Buses			Motor-cycles	Traffic Flow (veh./hr)	Date
	Small	Medium	Large		Medium	Large	Small	Medium	Large			
8:30 AM	16.4%	68.4%	12.2%	0.8%	0.9%	0.0%	0.2%	0.0%	0.1%	0.9%	3,536	12/5/01
11:30 AM	14.8%	62.1%	14.9%	2.1%	3.7%	0.0%	0.5%	0.1%	0.1%	1.7%	2,439	12/5/01
4:30 PM	12.4%	70.1%	9.1%	1.9%	4.0%	0.3%	0.8%	0.0%	0.5%	0.9%	2,632	12/4/01
7:30 PM	16.4%	67.7%	9.6%	2.2%	2.6%	0.0%	0.3%	0.3%	0.1%	0.8%	2,200	12/4/01
Vitacura/Arterial/2 Lanes – 1 Direction												
Time	Passenger Vehicles			Taxis	Trucks		Buses			Motor-cycles	Traffic Flow (veh./hr)	Date
	Small	Medium	Large		Medium	Large	Small	Medium	Large			
9:30 AM	9.3%	48.8%	10.9%	18.0%	1.9%	0.0%	0.0%	0.3%	8.4%	2.5%	966	12/5/01
12:30 AM	13.4%	55.2%	8.6%	10.0%	3.1%	0.3%	0.3%	0.6%	6.7%	1.9%	1,077	12/5/01
5:30 PM	4.9%	57.8%	8.9%	15.4%	1.2%	0.0%	0.6%	0.3%	9.2%	1.5%	960	12/4/01
8:30 PM	11.8%	60.8%	6.8%	9.9%	0.4%	0.0%	0.0%	0.0%	9.1%	1.1%	763	12/4/01
Vitacura/Residential/2 Lanes –1 Direction												
Time	Passenger Vehicles			Taxis	Trucks		Buses			Motor-cycles	Traffic Flow (veh./hr)	Date
	Small	Medium	Large		Medium	Large	Small	Medium	Large			
7:30 AM	9.1%	63.6%	7.3%	5.5%	0.0%	0.0%	12.7%	0.0%	0.0%	1.8%	151	12/5/01
10:30 AM	13.4%	61.9%	11.3%	5.2%	2.1%	0.0%	3.1%	0.0%	0.0%	3.1%	291	12/5/01
3:30 PM	14.8%	67.9%	6.2%	4.9%	1.2%	0.0%	2.5%	0.0%	0.0%	2.5%	240	12/4/01
6:30 PM	14.7%	74.0%	6.0%	1.3%	1.3%	0.0%	0.7%	0.0%	0.0%	2.0%	450	12/4/01
Overall:	12.6%	63.2%	9.3%	6.4%	1.9%	0.1%	1.8%	0.1%	2.9%	1.7%	1,309	

Overall, the passenger vehicles observed to be operating in Vitacura, the higher income district, were larger than the passenger vehicles operating in Maipu, a generally lower income district. The relative distributions of taxis, buses, motorcycles, and trucks are shown in Figure 2.2. The Maipu area appears to favor taxis over buses based on these observations compared to the Santiago and Vitacura districts.² Taxis represent a small proportion of the overall fleet, and more motorcycles can be found in the Santiago and Vitacura districts compared to the Maipu district. Figure 2.2 also includes data from a Chilean government publications [Instituto Nacional de Estadísticas]. The Chilean data reflect the fraction of vehicles in the fleet rather than their activity. Thus, taxis are about 5% of the static fleet, but make up 6-12% of the driving in various locations. Similarly, Buses are about 2.4% of the static fleet, but make up 3-8% of the driving observed in various locations. Motorcycles and Truck activity rates agree reasonably well with the static fractions in the government report.

² This would appear to be counterintuitive and may reflect a bias resulting from the video taping locations selected for Maipu.

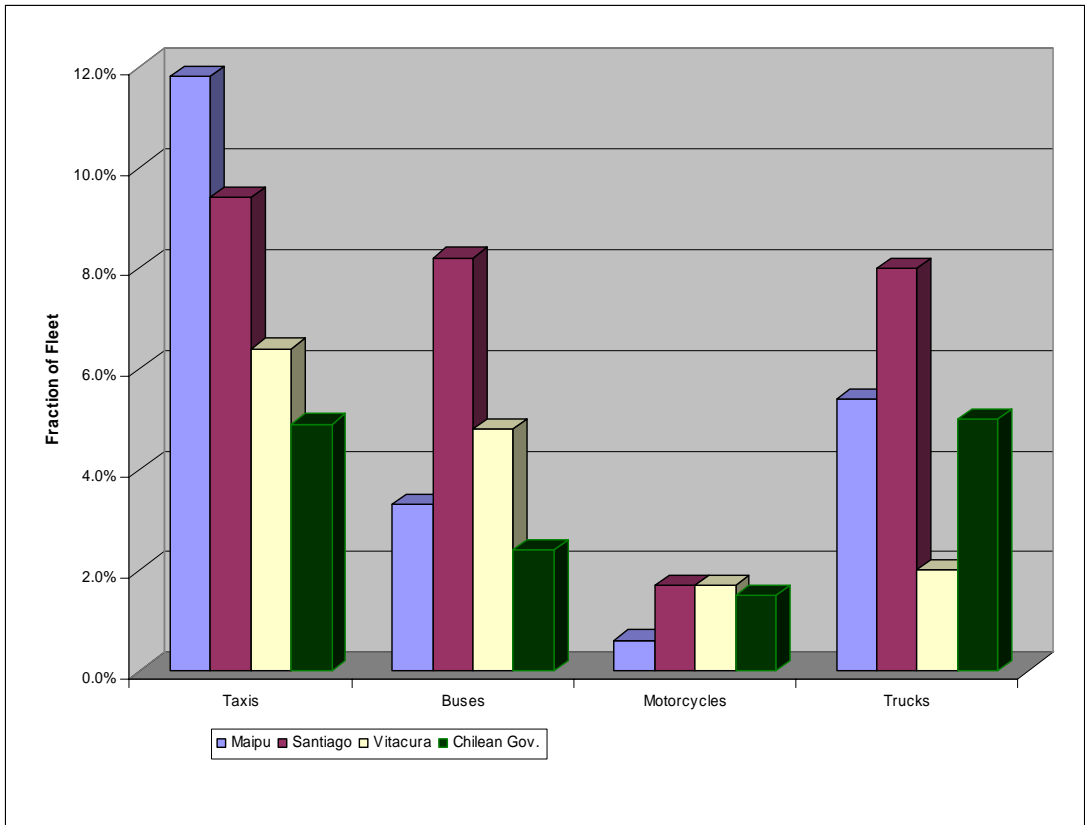


Figure 2.2: Distribution of Taxis, Buses, Motorcycles, and Trucks in Parts of the Santiago Metropolitan Area Based on Video Collected Data Compared with Chilean Government Data

Chapter Three: Parked Vehicle Technology Recording

A two-person team visited grocery store, shopping center, and business parking lots and on-road parking in each of the areas selected for videotaping. Parked car data collection was carried out over the same 6-hour period that videotaping occurred.

One team member recorded general information about the vehicle while the second team member collected odometer readings where visible, transmission type, and air conditioning information by looking through the vehicle windows. Table 3.1 indicates the vehicle parameters collected.

Table 3.1: Vehicle Information Recorded

Information Collected	Comment
Manufacturer	Almost always available
Model	Almost always available
Engine Size (liters)	Sometimes indicated on the vehicle. Otherwise estimated and later checked from information provided by the manufacturers
Model Year	Estimated from licenses plate in Santiago. Otherwise by observation.
Vehicle Condition	Subjective estimation.
Catalyst	In Santiago, all catalyst vehicles were required to have an easily observable green sticker. Otherwise, a catalyst was looked for in the exhaust train of the vehicle.
Odometer Reading	Recorded by looking through the window. Not visible in some cases and many 2001 vehicles have digital odometers, which are not visible when the vehicle is not operating.
Transmission Type	Recorded by looking through the window of the vehicle
Air Conditioning	Recorded by looking through the window of the vehicle.
Fuel Type	Based on indication on vehicle. Otherwise by knowledge of the vehicle model and looking at the exhaust pipe.
Licenses Number	Recorded from vehicle plates.

The data collected in the walk-around portion of the study is presented in Appendix A. Data from 814 vehicles was collected over six days of field studies. While this represents a significant dataset, there is still room for sampling errors especially in cases where the data is parsed into subgroups. A fundamental assumption used in this study is that people act somewhat randomly around norms producing driving statistics that should represent relatively smooth patterns with a standard statistical type of character. When samples appear to differ from these smooth patterns, it is assumed that traditional processes such as least square fits and other curve smoothing processes will work to improve the representativeness of the acquired data.

Passenger Vehicles

Fleet Distribution

Passenger vehicles makeup almost 80% of the on-road fleet and are thus a key concern for vehicle analysis. 80% of the vehicles observed had a catalyst. Due to Chilean regulations, all of these catalysts after 1992 are 3-way catalyst. 3.2% of the passenger vehicles are diesel fueled based on the survey and 13% of the passenger vehicles were pickup trucks. The survey indicated that 33% of the vehicles had air conditioning and 12% had automatic transmission. There was an obvious difference between the Maipu data (lower income area of Santiago metro) and the Vitacura data (upper income area of Santiago metro). This difference is demonstrated in Table 3.2.

Table 3.2: Comparison of Key Passenger Fleet Data Summaries Over Santiago Metro Area

Location	Average Age	Average Usage (Km)	Average Engine Size (l)	Air Conditioning	Automatic Transmission
Maipu	1994.4	99,107	1.69	15%	2.4%
Santiago	1995.2	89,066	1.76	23%	7.3%
Vitacura	1996.3	85,895	1.93	52%	24.9%
Taxi	1996.0	199,579	1.62	0%	0%

Figure 3.1 presents a comparison of model year data compared to the United States [U.S. EPA]. The years are grouped to make the results more statistically robust.

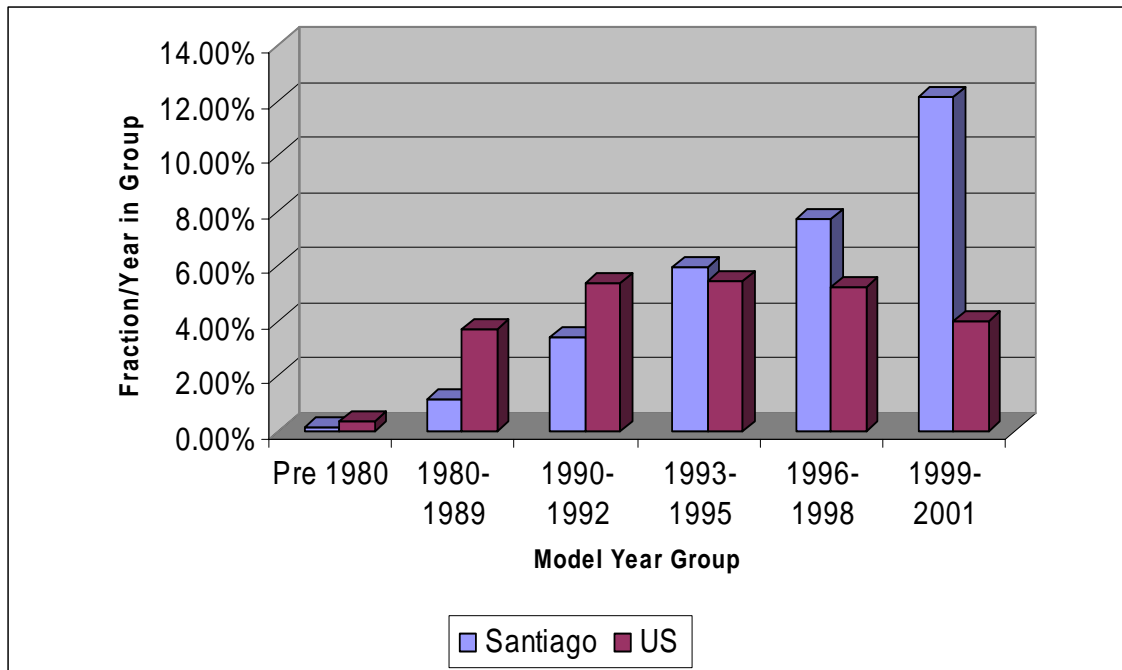


Figure 3.1: Comparison of Fraction of Various Model Years in Santiago Fleet Compared to US Fleet (fraction per year for each model year grouping)

As shown in Figure 3.1, the Santiago fleet is actually on the average newer than the U.S. fleet. This is likely due to the rapid growth of the Santiago fleet (~10% per year [CONAMA]) resulting from recent economic growth and the fact that only about 1 person in 6 owns a vehicle in Santiago compared to almost 1 vehicle per person in the U.S. It should be noted that recent emission standards in Chile are not as stringent as those in the

U.S. Thus, the average emissions in the Chilean fleet will still likely be higher than the case for the U.S. fleet even though it is newer.

Figure 3.2 presents an analysis of the data collected in the Santiago metropolitan area by individual model year. 1-year-old vehicles represent 2001 model year in this figure. Due to the overall sample size, there were as many as 116 vehicles in some age groups while only 1 or none in other age groups. Thus, some of the inconsistencies in the results may come from the small number of vehicles in a particular sample. It is also possible that the economic conditions impact year-to-year sales and thus the fraction of vehicles in a given age group. The potential sampling errors combined with annual vehicle sales make it difficult to adjust the sampled data in any rational manner. In addition, 2001 vehicles continue to be sold in Santiago and may incur significant additional sales through the end of the year. The 5-year-old vehicles, 1997 model year, clearly appear to be lower than any reasonable sales variation would predict and thus likely indicate sampling error.

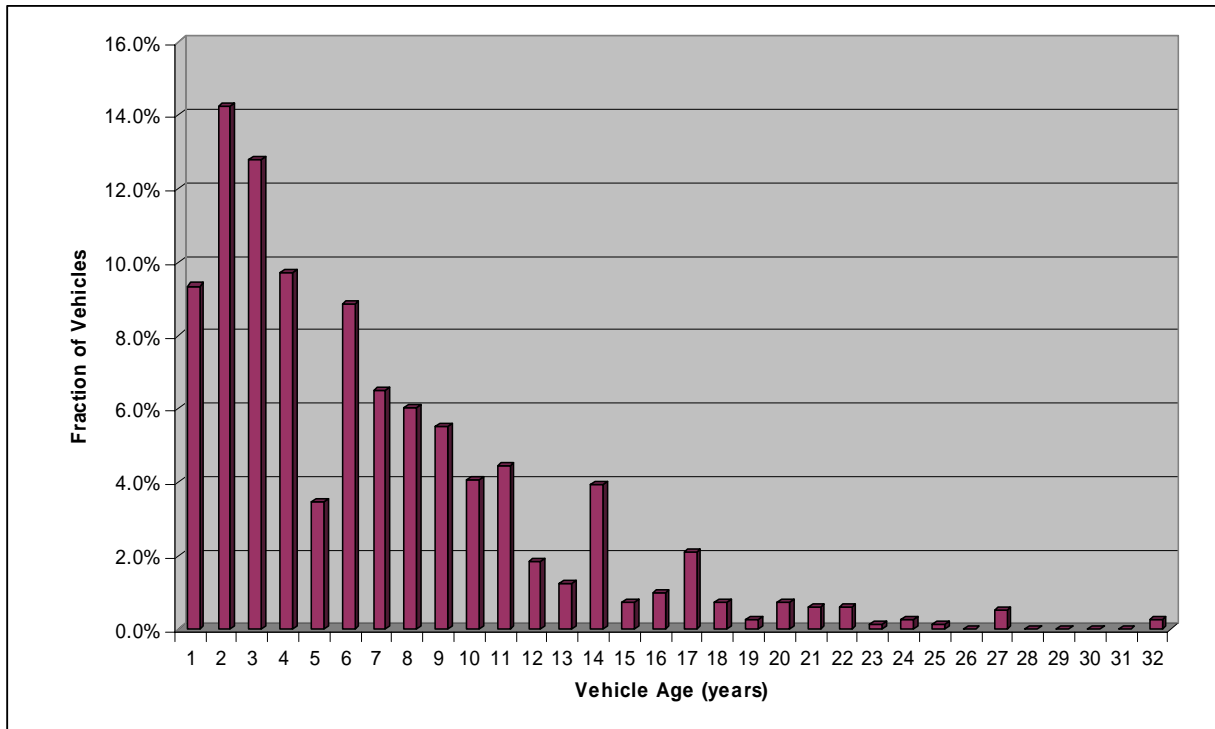


Figure 3.2: Model Year Distribution of the Metropolitan Santiago Fleet

An important characteristic of the vehicle fleet is the size distribution of the passenger fleet. This will influence the fuel use by this sector of the fleet. Table 3.3 shows the overall passenger fleet vehicle distribution derived from the walk-around data broken into three size groups as used in the IVE model.

Table 3.3: Vehicle Engine Size Distribution in Various Parts of the Santiago Metro Area

Location/Engine Size	Vehicle Count	Fraction
Maipu		
Small (0.6-1.5 liter engine)	131	45.2%
Medium (1.6-2.4 liter engine)	146	50.3%
Large (2.4 and larger liter engine)	13	4.5%
Total	290	
Santiago		
Small (0.6-1.5 liter engine)	74	33.8%
Medium (1.6-2.4 liter engine)	131	59.8%
Large (2.4 and larger liter engine)	14	6.4%
Total	219	
Vitacura		
Small (0.6-1.5 liter engine)	72	23.7%
Medium (1.6-2.4 liter engine)	190	62.5%
Large (2.4 and larger liter engine)	42	13.8%
Total	304	
Overall		
Small (0.6-1.5 liter engine)	277	34.1%
Medium (1.6-2.4 liter engine)	467	57.4%
Large (2.4 and larger liter engine)	69	8.5%
Total	813	

As shown earlier in Table 3.2, the vehicle fleet tends to be larger in the Vitacura section of Santiago Metro compared to the Maipu section of Santiago Metro. Overall, 34% of the Santiago Metro fleet are small vehicles while 8.5% are large vehicles. It is also valuable to compare this data with the on-road data collected by the video cameras in comparable areas. It should be noted in making these comparisons that it is difficult to discern between the small and medium size passenger vehicle categories on the video tape because the vehicles exist in a almost a continuum from 0.6 liter engines to 2 liter engines and it is not easy to differentiate between a 1.5 liter and 1.6 liter vehicle in order to place them in the proper size category. There is a more discernable jump in the case of medium to larger vehicles and this data is expected to be more comparable. Figure 3.3 compares the two measurements. As can be seen in Figure 3.3, the comparisons with respect to larger vehicles is reasonably good as well as the sum of the small and medium vehicle passenger fleets. There is a significant difference between the video and parked vehicle comparisons for small passenger vehicles. As discussed earlier, this may well be an inability to differentiate between 1.4 and 1.5 liter vehicles and 1.6 liter vehicles given that these three engine sizes dominate the fleet. The parked vehicle data should be more accurate than the video data for these types of differentiations.

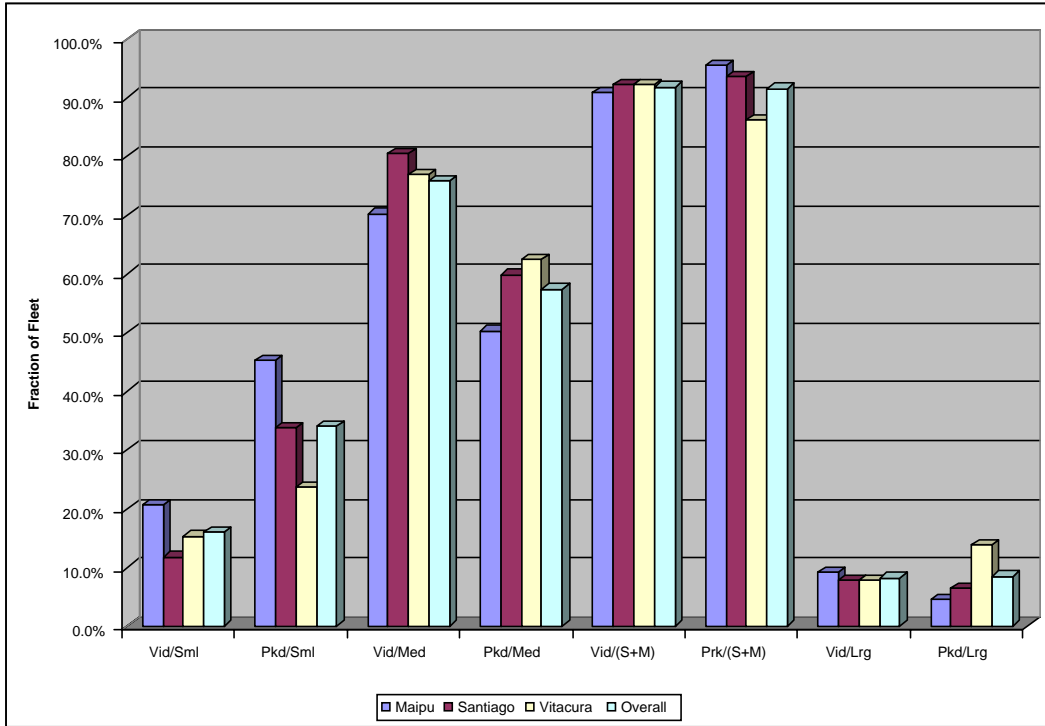


Figure 3.3: Comparison of Video and Parked Vehicle Collected Data

Vehicle Activity

The average vehicle usage in Santiago based on the data collected in this study is 16,600 Km per year [CONAMA]. This compares to about 19,200 Km per year in the U.S. [ref: U.S.D.O.T. National Transportation Statistics 2000 – by Bureau of Transportation Statistics, Report No. BTSO1-O1]. There is reason to believe that the 16,600 Km determined in this study may be biased high. This high bias results from the fact that it is more likely that the survey approach will find the more active vehicles since they are more likely to be found at supermarkets and shopping centers. These vehicles will have a higher average usage, which will lead to a high biased usage value. CONAMA reports that they believe that the typical usage is closer to 14,500 Km per year [CONAMA].

If it is assumed that the fleet observed in this portion of the experiment is representative of vehicle activity as opposed to base fleet composition, some corrections should be made to the data as follows.

Assume that

N_i = actual number of vehicles in the i th usage group in an urban area.

M_i = annual usage defined for the i th group.

Then,

$$\text{Total number of vehicles} = N_T = \sum N_i \quad (3.1)$$

$$\text{Total distance driven} = S_T = \sum (N_i * M_i) \quad (3.2)$$

$$\text{Average fleet usage} = A = S_T/N_T = \left(\sum (N_i * M_i) \right) / \left(\sum N_i \right) \quad (3.3)$$

If a total of K vehicles are randomly sampled then the probability of seeing a vehicle in the group is,

$$\text{Probability} = \left(N_i * M_i \right) / \left(\sum \left(N_i * M_i \right) \right) \quad (3.4)$$

and

$$\text{Likely number of vehicles observed} = N_{O_i} = K * \left(N_i * M_i \right) / \left(\sum \left(N_i * M_i \right) \right) \quad (3.5)$$

where

$$K = \sum N_{O_i}$$

Substituting equation (3.5) into equation (3.3) and solving for N_i yields,

$$N_i = (N_{O_i}/K) * (S_T/M_i) \quad (3.6)$$

and

$$A = K / \left(\sum \left(N_{O_i}/M_i \right) \right) \quad (3.7)$$

Equation (3.6) can also be rewritten as

$$(N_i/N_T) = (N_{O_i}/K) / (M_i/A) \quad (3.8)$$

Equation (3.8) makes the point that the actual fraction of vehicles in the i th use group of the base fleet is equal to the fraction of vehicles observed in the i th use group divided by the ratio of mileage in the i th use group to the actual fleet average.

Table 3.4 indicates the observed usage distribution for vehicles in the 1994 to 2000 age group. This group was selected for evaluation because the age of the vehicle is more reliable.

Table 3.4: Observed Vehicle Usage Distribution for Vehicles in the 1994-2000 Age Group

Annual Usage Range (1000s of Km)	Mid-Point of Annual Usage (Km)	Number of Vehicles Observed
0 to 9	5,000	81
10 to 19	15,000	387
20 to 29	25,000	131
30 to 39	35,000	27
40 to 49	45,000	9
50 to 59	55,000	6
60 to 69	65,000	2
Total Vehicles (K)		643

Using the values in Table 3.4 in equation (3.6) produces an actual average annual vehicle use of 13,300 Km for this group of 1994 to 2000 group of vehicles. These contrasts with the straight average of 16,600 Km noted earlier. If the surveyed data does correspond to the fleet activity distribution then the correct average driving for overall Santiago is 13,300 Km. As noted earlier, CONAMA reports that the average annual driving in Santiago is 14,500 Km. If the 14,500 reported by CONAMA is correct, then the straight average value of 16,600 Km per year is 14.5% higher than the reported value while the activity corrected factor is 8.2% below the reported value. This is not an issue for the fleet distributions developed in this report since the interest is in activity related distributions. However, it is an important consideration when comparing data collected from on-road counts or parking lot counts with data extracted from vehicle registration data in government data banks.

Figure 3.4 shows the accumulated vehicle usage derived in this study compared to vehicle age.

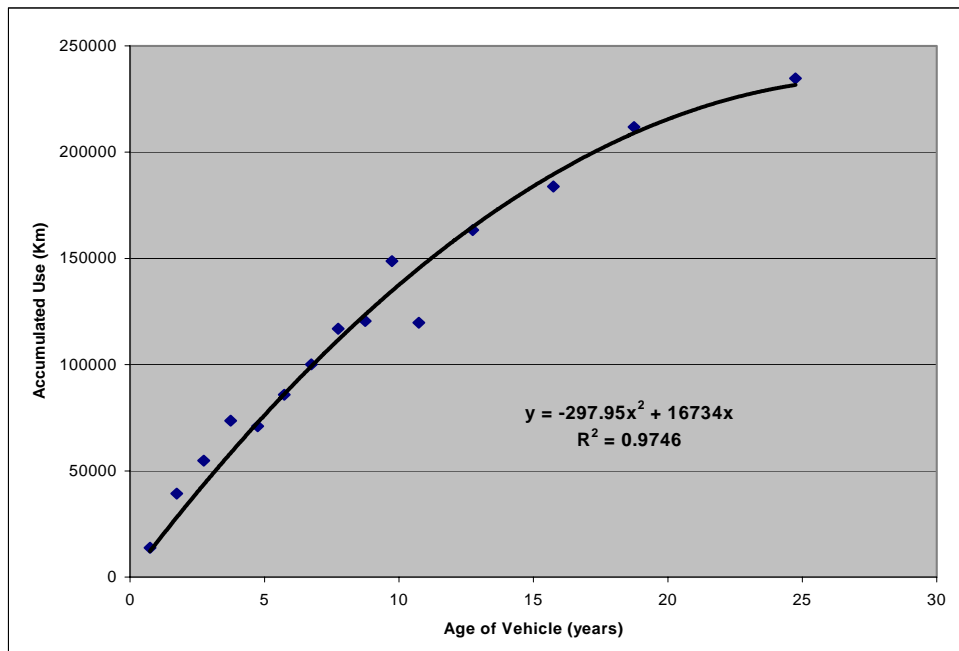


Figure 3.4: Accumulated Driving in the Overall Santiago Fleet.

A second order fit to the data is also presented. This fit was forced to go through zero since new vehicles will have no accumulated use by definition. The results resemble those observed in the U.S. in the sense that newer vehicles are used more than older vehicles. The values used in the plot for the older vehicles are suspect both from the fact that it was difficult in the field to assign an age to these vehicles and the additional problem that the odometer may have turned over one or more times and this was not determinable from a walk-by survey. These factors may cause Figure 3.4 to indicate lower mileage in higher years than is actually occurring. However, without better data, there is no way to correct this problem.

Table 3.5 uses the second order fit shown in Figure 3.4 to estimate accumulated vehicle driving and then to calculate annual estimated vehicle driving by vehicle age. As can be seen, vehicles in the first three years of their life are driven 15,000-16,000 kilometers per year. Vehicles that are 15-18 years old are driven only 6,000-8,000 kilometers per year. This reduced driving at higher age will reduce the impact of older vehicles on air pollution. Table 3.5 also presents similar data for the United States [U.S. EPA]. As can be seen U.S. drivers drive significantly more than Chilean drivers, but the U.S. shows a similar reduction in driving as vehicles age. The significant difference in driving in the U.S. at higher ages is likely the result of the data collection method discussed in the previous paragraph.

Table 3.5: Estimated Annual Driving by Vehicle Age

Vehicle Age (years)	Projected Accumulated Driving (Km)	Annual Driving (Km)	Annual U.S. Driving (Km) ³	U.S./Chilean Ratio
1	16,436	16,436	26,917	1.63
2	32,276	15,840	25,420	1.60
3	47,520	15,244	24,002	1.57
4	62,169	14,648	22,654	1.54
5	76,221	14,052	21,373	1.52
6	89,678	13,457	20,157	1.49
7	102,538	12,861	19,003	1.47
8	114,803	12,265	17,911	1.46
9	126,472	11,669	16,878	1.44
10	137,545	11,073	15,904	1.43
11	148,022	10,477	14,986	1.43
12	157,903	9,881	14,126	1.43
13	167,188	9,285	13,325	1.43
14	175,878	8,689	12,566	1.44
15	183,971	8,093	11,840	1.46
16	191,469	7,498	11,152	1.48
17	198,370	6,902	10,507	1.52
18	204,676	6,306	9,905	1.57
19	210,386	5,710	9,320	1.63
20	215,500	5,114	8,703	1.70
21	220,018	4,518	8,097	1.79
22	223,940	3,922	7,502	1.91
23	227,266	3,326	6,925	2.08
24	229,997	2,730	6,365	2.33
25	232,131	2,134	5,618	2.63

An important adjunct to the accumulated mileage and the typical mileage driven per year is the distribution of driving associated with each age group. Figure 3.4 and Table 3.5 above present averages derived from the whole data set. Figure 3.5 presents the distribution of driving around the average accumulated vehicle usage for three different age groupings. The data for Figure 3.5 was developed by dividing the average vehicle usage projected using the second-order equation in Figure 3.4 into the actual usage recorded for each vehicle surveyed for which an odometer reading was available. The newer vehicles (1-5 years of age) are driven over a wider range of use patterns than are the older vehicles.

³ U.S. Environmental Protection Agency, EPA420-R-01-047, Sept. 2001

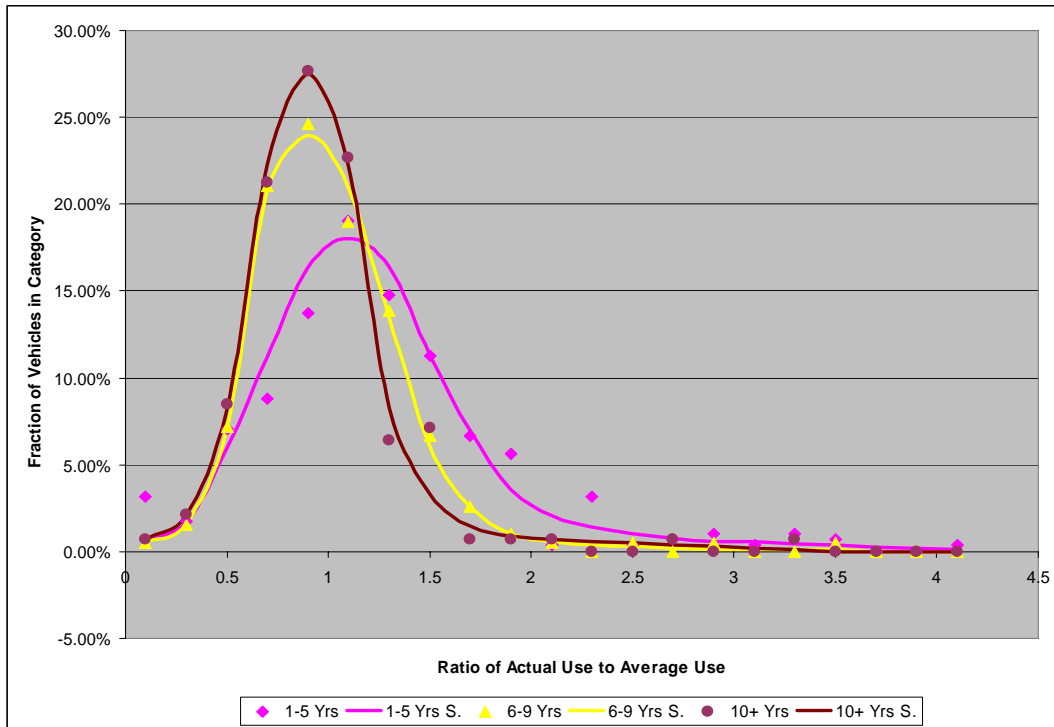


Figure 3.5: Distribution of Driving Around Projected Accumulated Usage

Taxis

Only limited Taxi data was collected. The entire sample consists of 20 vehicles. However, there was significant consistency among the vehicles. All vehicles except one were in the 1.5/1.6 liter engine size. The one variance was a 1.9-liter vehicle. No taxis had air conditioning. All but one had a catalyst and none were older than 1990. Figure 3.6 shows the model year distribution of the taxi fleet. The average annual driving measured for a taxi is about 35,000 kilometers/year.

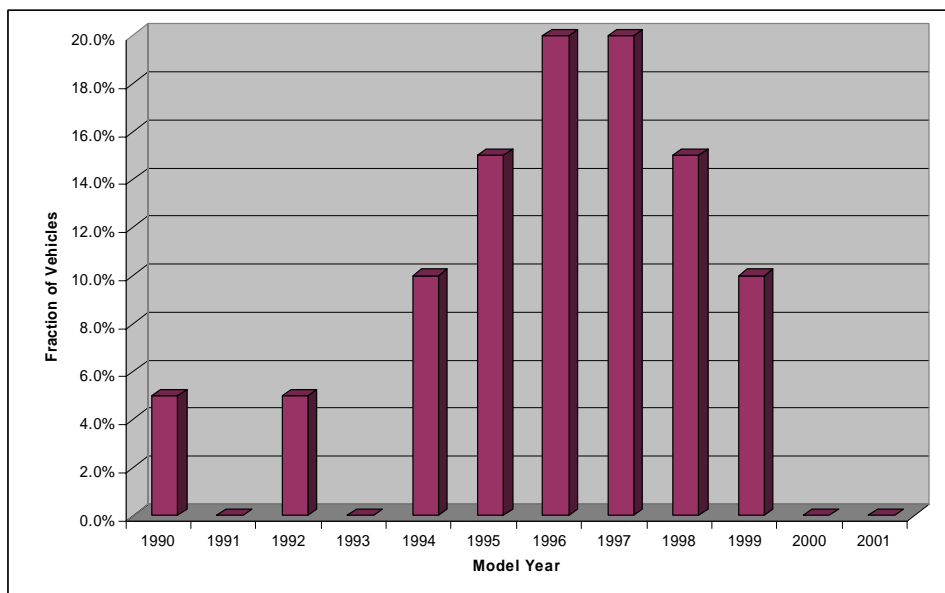


Figure 3.6: Model Year Distribution of Taxis for Santiago

Figure 3.7 displays the driving distribution including a second order fit forced through zero.

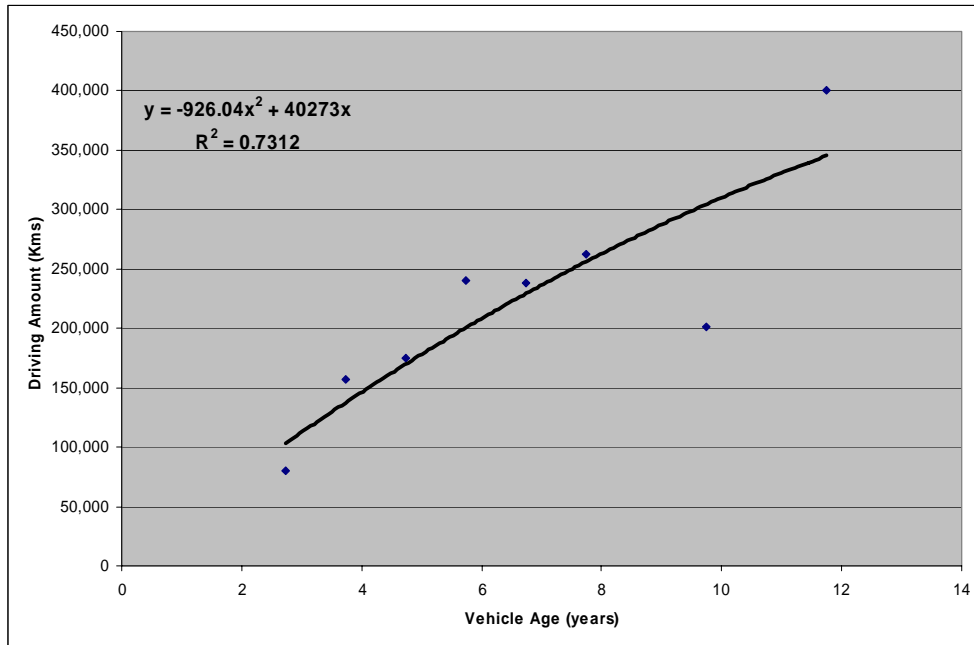


Figure 3.7: Taxi Driving by Vehicle Age

Figure 3.8 presents the distribution of driving around the projected mean.

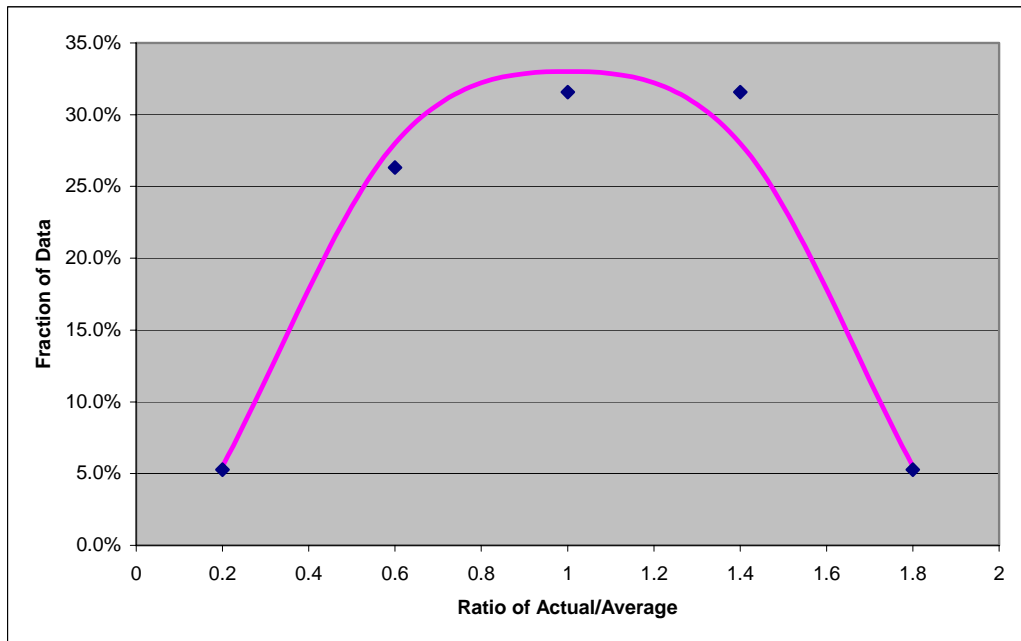


Figure 3.8: Taxi Driving Distribution Around Projected Means

As noted earlier, the taxi data is very limited and the graphics presented should be considered in this light.

Chapter Four: Vehicle Technology Matrix Based on Video

The International Vehicle Emissions model (IVE model), which this study is designed to support, categorizes on-road vehicles into 801 technology categories. The large number of technologies derives from the fact that the IVE model is intended to accommodate a wide array of urban areas around the world and to project emissions in these areas into the future. Thus, fuels as diverse as gasoline, diesel, ethanol, and natural gas must be accommodated along with a wide variety of control technologies for the passenger fleet, truck fleet, bus fleet, and for motorcycles. Appendix B shows the 801 technologies presently accommodated by the model.

As noted earlier, the videotapes were used to create a general breakdown of the on-road fleet. The stationary vehicle data was used to further break the passenger fleet into more finely divided subsets. The data was parsed on an excel spreadsheet into the categories of interest. Table 4.1 indicates the values used to parse the data.

Table 4.1: Values Used to Parse Data

	Vehicle Size (based on engine size in liters)	Vehicle Usage (based on amount driven or model year in thousands of Km)⁴
Small/Low	0.5-1.5	0-79
Medium/Medium	1.6-2.4	80-159
Large/High	2.5-5	160-1,000

Using Tables 2.2 a, b, c a breakdown of on-road vehicle use was created and is shown in Table 4.2. The values shown in Table 4.2 were created by equally weighting the highway (freeway), arterial, and residential information and averaging it. The overall fleet data are created by equally weighting all of the video produced data and averaging it. A more accurate distribution can be created by determining the relative amount of driving that is occurring on residential streets compared to arterial streets compared to highways and weighting the activity data. Similarly an improved overall data set can be developed by determining the relative amount of driving that is occurring in Maipu like settings compared to Santiago type settings compared to Vitacura type settings. This information is not available at the present. Thus, equal weighting is being used for the present.

⁴ In cases where the odometer reading was visible, the value observed on the odometer was used. If no odometer reading was observable then a vehicle usage was approximated using the second order least squares fit equation shown in Figure 3.4. This projected odometer reading was then used to locate the vehicle in the proper use bin.

Table 4.2: Breakdown of Vehicular Activity Based on Video Tapes of Santiago Traffic

	Passenger Vehicles	Taxis	Medium Sized Trucks	Large Sized Trucks	Small Sized Buses	Medium Sized Buses	Large Sized Buses	Motorcycles
Overall Fleet	81.1%	9.2%	4.5%	0.6%	0.9%	0.4%	4%	1.4%
Maipu Fleet	78.9%	11.8%	4.7%	0.7%	0.9%	0.9%	1.5%	0.6%
Santiago Fleet	74.7%	8.7%	5.6%	1.2%	0.1%	0.3%	7.8%	1.7%
Vitacura Fleet	85.1%	6.4%	1.9%	0.1%	1.8%	0.1%	2.9%	1.7%

The parked car passenger vehicle information can be used to parse the passenger vehicle fractions into sub-fractions. This is accomplished by multiplying the parked car fractions for the area of interest by the overall passenger vehicle fractions in Table 4.2. Table C-5 in Appendix C presents the data for the Santiago Metropolitan Region parked car vehicle survey as an example. The resulting technology distributions for the Santiago Metropolitan Region and the sub-areas are presented in Appendix C in Tables C-1 through C-4.

As discussed in Section 3, this process assumes that the observed vehicle fractions in the case of parked cars correspond to the relative use (activity) of these vehicles. Although one would expect the parked vehicle distributions to conform reasonably well with vehicle activity, this has not been proven to be the case. However, it is the only possible process for using this data at the moment.

This technology identification portion of the study did not include data collection concerning diesel trucks and buses. Thus, no data was available to parse diesel vehicles into various age or technology categories. For the present analysis, all diesel trucks and buses are considered to be uncontrolled using pre-chamber injection technology. The age distributions were estimated based on U.S. data [reference]. Table 4.3 indicates the factors used to parse the truck and bus data into age bins. All motorcycles were assumed to be 4-cycle and of less than 79,000 Km (50,000 miles) based on discussions with CONAMA officials. This assumption needs to be tested based on future studies.

Table 4.3: Assumptions Used to Parse Truck and Bus Data into Age Bins

Vehicle Type	Vehicle Size		
	Low Use	Medium Use	High Use
Medium Truck	16.3%	15.5%	68.2%
Large Truck	13.0%	13.0%	74%
Small Bus	13.0%	13.0%	74%
Medium Bus	13.0%	13.0%	74%
Large Bus	13.0%	13.0%	74%

The results for the overall Santiago metro area and for the Maipu, Santiago, and Vitacura subgroups are shown in Appendix C.

References

- Comision Nacional Del Medio Ambiente (CONAMA), Marcelo Fernandez Gomez, personal communication on November 29, 2001. Santiago, Chile.
- Instituto Nacional de Estadisticas (INE), 2001. "Parque de Vehículos en Circulación 2000" Santiago, Chile.
- Malcolm, C., Younglove, T., Tietjen, J., Barth, M., Davis, N., and Lents, J. 2002. University of California, College of Engineering, Center for Environmental Research and Technology (CE-CERT), Riverside, CA 92521 "Mobile Source Emissions: Analysis of Spatial Variability in Vehicle Activity Patterns and Vehicle Fleet Distributions". 12th CRC On-Road Vehicle Emissions Workshop. San Diego, CA., April 2002.
- U.S.D.O.T. National Transportation Statistics 2000 – by Bureau of Transportation Statistics, Report No. BTSO1-O1.
- U.S. EPA, 2001. "Fleet Characterization Data for Mobile 6: Development and Use of Age Distributions Average Annual Mileage Accumulation Rates and projected Vehicle Counts for Use in MOBILE 6". EPA420 –R-01047 (M6.FLT.007) September 2001.

Appendix A

Stationary Vehicle Inspection Information

Data Collected November 29,2001 in Santiago, Chile in Maipu Area

Veh. Type	License No.	Model Year	Vehicle Manuf.	Model	Size	Fuel Injection	Catalyst	Mileage (Km)	Air Cond.	Maint. Condition	Trans.	Latitude (S)	Longitude (W)	Time	Fuel
PC	UH.80.68	2000	Chevrolet	Extra Millenium	1.3	no		22,000	no	Good	M	33 28.739	70 39.773	15:00	gasoline
PC	KD.28.78	1992	Chevrolet	Chevette	1.4	no		440,000	no	Medium	M	33 28.739	70 39.773	15:00	gasoline
PC	CJ.12.07	1985	Chevrolet	Chevette	1.4	no		300,000	no	Poor	M	33 28.739	70 39.773	15:00	gasoline
PC	LB.71.52	1992	Daewoo		1.5	yes		150,000	no	Good	A	33 28.739	70 39.773	15:00	gasoline
PC	RS.11.51	1996	Daewoo		1.5	yes		135,000	no	Medium	M	33 28.739	70 39.773	15:00	gasoline
PC	NY.99.40	1994	Daihatsu	Charade	1.3	yes		170,000	no	Good	M	33 28.739	70 39.773	15:00	gasoline
PC	LT.66.46	1994	Ford	Small Station Wagon	1.8	yes		100,000	no	Medium	M	33 28.739	70 39.773	15:00	gasoline
PC	PA.40.85	1997	Hyundai		1.8	yes		95,000	no	Good	M	33 28.739	70 39.773	15:00	gasoline
PC	TF.57.51	1999	Mazda	323	1.6	yes			yes	Good	M	33 28.739	70 39.773	15:00	gasoline
PC	UT.60.49	2001	Nissan		2.4	yes		7,400	no	Good	M	33 28.739	70 39.773	15:00	gasoline
PC	CA.36.46	1985	Peugeot		1.5	no			yes	Medium	A	33 28.739	70 39.773	15:00	gasoline
PC	BC.66.98	1988	Toyota	LT/5 Speed	1.6	no			no	Poor	M	33 28.739	70 39.773	15:00	gasoline
PC	TA.72.17	1999			1.7	yes		97,000	yes	Good	M	33 28.739	70 39.773	15:00	gasoline
Taxi	RB.25.58	1997	Nissan	Vi6 Ex Saloon	1.6	yes		130,000	no	Medium	M	33 28.739	70 39.773	15:00	gasoline
Truck	PV.85.50	1996	Chevrolet	LUV Supercab	2.3	yes		60,000	no	Good	M	33 28.739	70 39.773	15:00	gasoline
Truck	LG.27.27	1995	Chevrolet	LUV Supercab	2.3	mpfi	yes	87,000	no	Good	M	33 28.739	70 39.773	15:00	gasoline
Truck	UX.99.99	2001	Chevrolet	S10 SuperCab 4X4	4.3	yes		8,000	yes	Good	M	33 28.739	70 39.773	15:00	gasoline
Truck	TL.82.03	1999		Combo D	1.8	no			no	Good	M	33 28.739	70 39.773	15:00	diesel
Truck	NN.73.35	1995			1.4	no		242,000	no	Medium	M	33 28.739	70 39.773	15:00	diesel
Truck	SS.99.99	1999			1.6	no		60,000	no	Good	M	33 28.739	70 39.773	15:00	diesel
Truck	PZ.88.61	1997			2	no		67,000	no	Good	M	33 28.739	70 39.773	15:00	diesel
PC	LE.10.77	1992	Buick	Century Custom	3.5	no		275000	no	Medium	M	33 28.927	70 41.603	16:00	gasoline
PC	TX.69.35	2000	Chevrolet	Swing/Corsa	1.6	mpfi	yes	23,000	no	Good	M	33 28.927	70 41.603	16:00	gasoline
PC	BR.34.96	1979	Citroen	Club	1.3	no			no	Poor	M	33 28.927	70 41.603	16:00	gasoline
PC	GX.24.01	1985	Citroen	Visall Club	1.3	no		180,000	no	Poor	M	33 28.927	70 41.603	16:00	gasoline
PC	F7.80.30	1987	Citroen	Gti DX 19	1.7	no		200,000	no	Good	M	33 28.927	70 41.603	16:00	gasoline
PC	PL.76.24	1996	Daewoo	Eti Racer	1.5	yes		60,000	no	Good	M	33 28.927	70 41.603	16:00	gasoline
PC	DX.34.66	1995	Daewoo	Eti Racer	1.5	yes			no	Medium	M	33 28.927	70 41.603	16:00	gasoline
PC	PH.37.85	1995	Fiat	75	0.6	yes		100,000	no	Good	M	33 28.927	70 41.603	16:00	gasoline
PC	HH.52.29	1970	Fiat	600	0.6	no			no	Medium	M	33 28.927	70 41.603	16:00	gasoline
PC	TV.52.26	1996	Fiat	Palio-EDX	1.4	mpi	yes	37,000	no	Good	M	33 28.927	70 41.603	16:00	gasoline
PC	HN.43.51	1977	Ford		4	no		85,000	no	Poor	M	33 28.927	70 41.603	16:00	gasoline
PC	PG.59.65	1996	Hyundai	Sonata GLS	2	yes		97,000	no	Good	M	33 28.927	70 41.603	16:00	gasoline

PC	NP.11.21	1994 KIA	Large Van BESTA	4	no	400,000	no	Poor	M	33 28.927	70 41.603	16:00	diesel
PC	FY.59.72	1970 Mitsubishi	Galante	2	no	164,000	no	Medium	A	33 28.927	70 41.603	16:00	gasoline
PC	BU.83.61	1988 Nissan	Sunny	1.5	no	150,000	no	Poor	M	33 28.927	70 41.603	16:00	gasoline
PC	AS.80.23	1980 Subaru		0.6	no		no	Poor	M	33 28.927	70 41.603	16:00	gasoline
PC	PY.38.22	1998 Subaru	Outback 4X4 Sta Wgn	2.5	yes	56,000	yes	Good	M	33 28.927	70 41.603	16:00	gasoline
PC	SX.29.38	1998 Suzuki	Samurai 4X4	1.5	yes	80,000	no	Medium	M	33 28.927	70 41.603	16:00	gasoline
PC	UZ.27.23	2001 Suzuki	Baleno	1.6	yes	1,300	no	Good	M	33 28.927	70 41.603	16:00	gasoline
PC	EK.62.81	1981 Suzuki	Fronte	0.8L	no		no	Poor	A	33 28.927	70 41.603	16:00	gasoline
PC	NR.38.04	1995 Toyota	Tercel XLI	1.5	yes	118,000	no	Medium	M	33 28.927	70 41.603	16:00	gasoline
PC	KG.95.49	1992 Volkswagon	Golf GL	1.8	yes	163,000	yes	Good	M	33 28.927	70 41.603	16:00	gasoline
Truck	RZ.96.85	1998 Chevrolet	Commercial	2	no	96,000	no	Good	M	33 28.927	70 41.603	16:00	diesel
Truck	SU.96.31	1999 Citroen	Commercial	1.5	no	77,000	yes	Good	M	33 28.927	70 41.603	16:00	diesel
Truck	DS.63.66	1985 Nissan	No extra cab	2	no	200,000	no	Poor	M	33 28.927	70 41.603	16:00	gasoline
Truck	NG.14.30	1996 Toyota	HiLux Supercab	2.4	yes	56,000	no	Good	M	33 28.927	70 41.603	16:00	gasoline
PC	DL.73.66	1991 Chevrolet	Chevette	1.4	no	150,000	no	Medium	M	33 30.361	70 45.036	17:00	gasoline
PC	FP.52.65	1985 Chevrolet	Monza SL/E	1.8	no	89,000	no	Medium	M	33 30.361	70 45.036	17:00	gasoline
PC	SN.10.26	1999 Daewoo	Lanos	1.5	yes	50,000	yes	Good	M	33 30.361	70 45.036	17:00	gasoline
PC	LF.31.31	1993 Daewoo	Racer Eti	1.5	yes	134,000	no	Medium	M	33 30.361	70 45.036	17:00	gasoline
PC	NS.61.61	1995 Fiat	Puntos (small)	1.3	yes	86,000	no	Medium	M	33 30.361	70 45.036	17:00	gasoline
PC	GJ.49.66	1978 Ford	Van (Big)	4	no		no	Poor	M	33 30.361	70 45.036	17:00	gasoline
PC	SJ.92.31	1998 Hyundai	Accent L	1.5	yes	82,000	no	Good	M	33 30.361	70 45.036	17:00	gasoline
PC	HP.78.08	1978 Hyundai	S/M	1.6	no		no	Poor	M	33 30.361	70 45.036	17:00	gasoline
PC	TE.69.82	1999 Hyundai	Santamo 2035 sta wgn	2	yes	47,000	yes	Good	M	33 30.361	70 45.036	17:00	gasoline
PC	TW.99.21	2000 KIA	Avella II	1.4	yes	66,000	no	Good	M	33 30.361	70 45.036	17:00	gasoline
PC	DG.81.36	1989 Mazda		1.6	no		no	Medium	M	33 30.361	70 45.036	17:00	gasoline
PC	GN.87.24	1989 Mazda	929	2	no	43,000	no	Medium	M	33 30.361	70 45.036	17:00	gasoline
PC	DH.15.99	1989 Nissan	Sunny	1.5	no	171,000	no	Poor	M	33 30.361	70 45.036	17:00	gasoline
PC	NT.25.02	1995 Opal	Astra	1.4	yes	73,000	no	Good	M	33 30.361	70 45.036	17:00	gasoline
PC	FS.50.51	1980 Suzuki	202	0.8	no		no	Poor	M	33 30.361	70 45.036	17:00	gasoline
PC	SY.32.84	1998 Toyota	Tercel	1.5	yes	63,000	no	Good	M	33 30.361	70 45.036	17:00	gasoline
PC	RX.51.41	1998 Toyota	Tercel Twin Cam	1.5	yes	72,000	yes	Good	M	33 30.361	70 45.036	17:00	gasoline
PC	FP.80.64	1988	4WD	1.9	no	230,000	no	Good	M	33 30.361	70 45.036	17:00	gasoline
Taxi	PF.32.13	1996 Nissan	Sentra	1.6	yes	315,000	no	Good	M	33 30.361	70 45.036	17:00	gasoline
Taxi	SP.60.53	1998 Nissan		1.6	yes	172,000	no	Good	M	33 30.361	70 45.036	17:00	gasoline
Truck	FL.63.69	1975 Fiat	125 Special	2	no		no	Poor	M	33 30.361	70 45.036	17:00	gasoline
PC	AX.56.32	1981 Fiat	147	1	no		no	Poor	M	33 30.361	70 45.036	18:00	gasoline

PC	EP.46.64	1989 Ford	Laser	1.5	no	no	Medium	M	33	30.361	70	45.036	18:00	gasoline		
PC	LK.57.35	1991 Ford	Aerostar XL	3.5	yes	171,000	yes	Poor	M	33	30.361	70	45.036	18:00	gasoline	
PC	KV.55.50	1995 Nissan	Sentra	1.6	yes	96,000	no	Good	M	33	30.361	70	45.036	18:00	gasoline	
PC	GK.12.62	1982 Seat	Furr	1	no	no	no	Medium	M	33	30.361	70	45.036	18:00	gasoline	
PC	CH.28.08	1983 Seat	Remo 75 (small)	1.3	no	no	no	Medium	M	33	30.361	70	45.036	18:00	gasoline	
PC	HH.15.51	1980 Subaru	Small Van	0.8	no	no	no	Poor	M	33	30.361	70	45.036	18:00	gasoline	
PC	LT.44.24	1995 Suzuki	(Small van like)	1.3	yes	75,000	no	Medium	M	33	30.361	70	45.036	18:00	gasoline	
PC	SC.69.91	1999 Chevrolet	Corsa (Eco)	1.6	mpfi	no	64,000	no	Good	M	33	29.051	70	45.079	19:00	diesel
PC	FP.15.63	1986 Chevrolet	Gemini	1.8	no	no	no	Medium	M	33	29.051	70	45.079	19:00	gasoline	
PC	RV.24.78	1999 Chevrolet	Cavalier	2.2	yes	30,000	no	Good	M	33	29.051	70	45.079	19:00	gasoline	
PC	BT.23.71	1975 Chevrolet	Impala	5	no	no	no	Poor	M	33	29.051	70	45.079	19:00	gasoline	
PC	PX.86.83	1997 Citroen	ZX (sta wgn)	1.6	yes	71,000	no	Good	M	33	29.051	70	45.079	19:00	gasoline	
PC	NK.30.59	1995 Daewoo	Heaven GL	1.5	yes	83,000	no	Medium	M	33	29.051	70	45.079	19:00	gasoline	
PC	SX.30.99	1999 Daewoo	Lanos	1.5	yes	83,000	yes	Good	M	33	29.051	70	45.079	19:00	gasoline	
PC	TP.54.98	2000 Daewoo	S/M	1.6	yes	19,000	no	Good	M	33	29.051	70	45.079	19:00	gasoline	
PC	EE.46.07	1980 Daihatsu	Charade	1.3	no	no	no	Medium	M	33	29.051	70	45.079	19:00	gasoline	
PC	OE.26.10	1990 Fiat	4 ide (Uno)	1.1	no	150,000	no	Medium	M	33	29.051	70	45.079	19:00	gasoline	
PC	TF.63.16	1999 Fiat	Punto S	1.3	yes	37,000	no	Good	M	33	29.051	70	45.079	19:00	gasoline	
PC	GS.54.31	1988 Fiat	Ritmo S75	1.5	no	no	no	Poor	M	33	29.051	70	45.079	19:00	gasoline	
PC	TD.31.59	1999 Ford	Escort (sm sta wgn)	1.6	yes	45,000	no	Good	M	33	29.051	70	45.079	19:00	gasoline	
PC	NR.21.01	1996 Ford	Escort LX	1.6	yes	83,000	yes	Good	M	33	29.051	70	45.079	19:00	gasoline	
PC	TT.19.21	2000 Hyundai	Accent	1.5	yes	21,000	no	Medium	M	33	29.051	70	45.079	19:00	gasoline	
PC	UJ.45.82	2001 Hyundai	Accent GLS	1.5	yes	8,000	no	Good	M	33	29.051	70	45.079	19:00	gasoline	
PC	PH.22.78	1997 Hyundai	Accent LS	1.5	yes	92,000	no	Good	M	33	29.051	70	45.079	19:00	gasoline	
PC	SV.59.62	1999 Hyundai	Santamo sta wgn 4X4	2	yes	46,000	yes	Good	M	33	29.051	70	45.079	19:00	gasoline	
PC	TH.82.52	2000 KIA	Avella II GL	1.3	yes	26,000	no	Good	M	33	29.051	70	45.079	19:00	gasoline	
PC	RB.71.19	1998 KIA	Pride	1.4	yes	55,000	no	Medium	M	33	29.051	70	45.079	19:00	gasoline	
PC	LB.28.46	1992 KIA	Pride LX	1.4	yes	100,000	no	Medium	M	33	29.051	70	45.079	19:00	gasoline	
PC	TT.76.98	2000 KIA	Sportage	2	yes	32,000	yes	Good	M	33	29.051	70	45.079	19:00	gasoline	
PC	PN.35.04	1997 Mazda	323 GLX	1.6	yes	46,000	no	Good	M	33	29.051	70	45.079	19:00	gasoline	
PC	DJ.90.11	1988 Nissan	Ex Saloon	1.6	yes	195,000	no	Good	M	33	29.051	70	45.079	19:00	gasoline	
PC	UD.60.00	2000 Nissan	Sentra II XE	1.6	yes	22,000	no	Good	M	33	29.051	70	45.079	19:00	gasoline	
PC	LJ.17.18	1993 Nissan		1.6	yes	152,000	no	Poor	M	33	29.051	70	45.079	19:00	gasoline	
PC	LG.52.48	1993 Opel	Corsa	1.4	yes	100,000	no	Medium	M	33	29.051	70	45.079	19:00	gasoline	
PC	KP.41.51	1992 Peugeot	405 GR	1.8	yes	170,000	yes	Good	M	33	29.051	70	45.079	19:00	gasoline	
PC	SG.58.84	2000 Renault	Megene	1.6	yes	no	no	Good	M	33	29.051	70	45.079	19:00	gasoline	
PC	TP.62.18	2000 Renault	Megene	1.6	yes	no	no	Good	M	33	29.051	70	45.079	19:00	gasoline	

PC	TP.62.18	2000 Renault	Megene	1.6	yes	no	Good	M	33 29.051	70 45.079	19:00	gasoline
PC	FK.16.16	1988 Renault	9TL	1.9	no	89,000 no	Medium	M	33 29.051	70 45.079	19:00	gasoline
PC	PU.44.61	1998 Suzuki	Maruti	1.4	mpfi	yes 30,000 no	Good	M	33 29.051	70 45.079	19:00	gasoline
PC	UZ.19.60	2001 Suzuki	Maruti	1.4	mpfi	yes 3,000 no	Good	M	33 29.051	70 45.079	19:00	gasoline
PC	RH.29.35	1999 Toyota	Starlet	1	yes	32,000 no	Good	M	33 29.051	70 45.079	19:00	gasoline
PC	DY.42.37	1995 Toyota	Tercel	1.5	yes	83,000 no	Good	M	33 29.051	70 45.079	19:00	gasoline
PC	SJ.42.43	1997 Toyota	Tercel	1.5	yes	69,000 no	Good	M	33 29.051	70 45.079	19:00	gasoline
PC	RD.67.08	1993 Toyota	Tercel	1.5	no	117,000 no	Medium	M	33 29.051	70 45.079	19:00	gasoline
PC	UA.77.15	2001 Toyota	Yaris	1.5	yes	no	Good	M	33 29.051	70 45.079	19:00	gasoline
PC	TL.87.18	2000 Toyota	Corolla 16 Valve	1.6	efi	yes 15,000 no	Good	M	33 29.051	70 45.079	19:00	gasoline
PC	NN.32.45	1995 Toyota	Corolla GLI	1.6	yes	125,000 no	Good	M	33 29.051	70 45.079	19:00	gasoline
PC	EZ.27.98	1989 Volkswagon	Amazon GLS	1.8	no	157,000 no	Medium	M	33 29.051	70 45.079	19:00	gasoline
PC	TS.72.51	2000 Volkswagon	Golf	1.8	yes	35,000 yes	Good	M	33 29.051	70 45.079	19:00	gasoline
Taxi	SP.74.24	1998 Daewoo	Espero	1.5	yes	70,000 no	Good	M	33 29.051	70 45.079	19:00	gasoline
Taxi	NH.73.99	1994 Daewoo	Pointer	1.6	yes	372,000 no	Medium	M	33 29.051	70 45.079	19:00	gasoline
Taxi	SY.71.68	1999 Daewoo	Pointer	1.6	yes	98,000 no	Good	M	33 29.051	70 45.079	19:00	gasoline
Truck	KJ.60.19	1994 Fiat	Fiorino (commercial)	1.5	yes	130,000 no	Good	M	33 29.051	70 45.079	19:00	gasoline
Truck	UD.33.76	2001 Fiat	Fiorino (commercial)	1.5	mpfi	no 23,000 no	Good	M	33 29.051	70 45.079	19:00	diesel
Truck	KZ.97.60	1995 Ford	Ranger	2.3	yes	122,000 no	Good	M	33 29.051	70 45.079	19:00	gasoline
Truck	KN.22.27	1996 Ford	Ranger XLT	2.3	yes	77,000 no	Medium	M	33 29.051	70 45.079	19:00	gasoline
Truck	PX.99.23	1997 Hyundai	(Bus like large van)	4	yes	68,000 no	Good	M	33 29.051	70 45.079	19:00	gasoline
Truck	TD.20.54	1999 Nissan	(SuperCab)	2.4	yes	56,000 no	Good	M	33 29.051	70 45.079	19:00	gasoline
PC	TJ.93.53	2000 Chevrolet	Astra GL	1.6	yes	no	Medium	M	33 29.831	70 45.462	20:00	gasoline
PC	TS.59.16	2000 Chevrolet	Corsa	1.6	yes	40,000 no	Good	M	33 29.831	70 45.462	20:00	gasoline
PC	LF.76.10	1993 Daewoo	Racer Sti	1.5	yes	151,000 no	Medium	M	33 29.831	70 45.462	20:00	gasoline
PC	MR.11.59	1995 Ford	Fiesta	1.3	yes	no	Good	M	33 29.831	70 45.462	20:00	gasoline
PC	UF.51.61	2001 Honda	Civic	1.6	yes	21,000 yes	Good	M	33 29.831	70 45.462	20:00	gasoline
PC	RW.62.42	1999 Hyundai	Accent LS	1.5	yes	13,000 no	Good	M	33 29.831	70 45.462	20:00	gasoline
PC	KZ.12.85	1993 Lada	2105	1.5	yes	96,000 no	Poor	M	33 29.831	70 45.462	20:00	gasoline
PC	DD.48.03	1988 Nissan	Sunny	1.5	no	262,000 no	Poor	M	33 29.831	70 45.462	20:00	gasoline
PC	LY.31.55	1993 Opal	Astra	1.4	yes	127,000 no	Good	M	33 29.831	70 45.462	20:00	gasoline
PC	SA.42.68	1999 Opal	Vectra	1.8	yes	no	Good	M	33 29.831	70 45.462	20:00	gasoline
PC	KG.97.29	1992 Peugeot	205	1.4	yes	166,000 no	Medium	M	33 29.831	70 45.462	20:00	gasoline
PC	RK.24.27	1997 Peugeot		1.8	yes	75,000 yes	Good	M	33 29.831	70 45.462	20:00	gasoline
PC	NZ.17.51	1996 Suzuki		1.6	mpi	yes 51,000 no	Medium	M	33 29.831	70 45.462	20:00	gasoline
PC	SY.93.90	1999 Toyota	Tercel	1.5	yes	63,000 no	Good	M	33 29.831	70 45.462	20:00	gasoline

PC	TJ.28.25	1998 Toyota	Tercel (Twin Cam)	1.5	yes	70,000	no	Good	M	33 29.831	70 45.462	20:00	gasoline
PC	KZ.17.93	1993 Toyota	Corolla	1.6	yes	103,000	no	Good	M	33 29.831	70 45.462	20:00	gasoline
PC	CK.81.94	1988 Toyota	Corolla (sta wgn)	1.6	no	215,000	no	Poor	M	33 29.831	70 45.462	20:00	gasoline
Taxi	PT.71.64	1994 Renault	RL	1.6	yes	152,000	no	Poor	M	33 29.831	70 45.462	20:00	gasoline
Taxi	RN.93.08	1990 Renault	19	1.9	no	400,000	no	Medium	M	33 29.831	70 45.462	20:00	diesel
Truck	UT.85.71	2001 Chevrolet	S10	2.2	yes	33,000	yes	Good	M	33 29.831	70 45.462	20:00	gasoline
Truck	PL.99.51	1997 Chevrolet	S10 LS	2.2	yes	67,000	no	Medium	M	33 29.831	70 45.462	20:00	gasoline
Truck	TC.19.18	2000 Daewoo	Damas (commercial)	1.3	no		no	Medium	M	33 29.831	70 45.462	20:00	diesel?
Truck	TL.51.31	2000 Hyundai	H100 (commercial)	2.5	no	95,000	no	Good	M	33 29.831	70 45.462	20:00	diesel
Truck	PV.10.33	1997 Nissan		1.6	yes	78,000	no	Medium	M	33 29.831	70 45.462	20:00	gasoline

Data Collected November 30,2001 in Santiago, Chile in Maipu Area

Veh. Type	License No.	Model Year	Veh. Manuf.	Model	Size	Fuel Injec.	Catal yst	Mileage (Km)	Air Cond.	Maint. Condition	Trans.	Latitude (S)	Longitude (W)	Time	Fuel
PC	AG 9608	1987	BMW	316	2.5	no		200,000	yes	good	m	33 28.816	70 45.167	15:00	gasoline
PC	CZ.93.69	1991	Chevrolet	Chevette	1.4	no		100,000	no	medium	m	33 28.816	70 45.167	15:00	gasoline
PC	PH.83.04	1996	Citroen	Zxi	1.4	yes		67,000	no	good	m	33 28.816	70 45.167	15:00	gasoline
PC	KV 6629	1991	Daewoo	Racer	1.5	no		208,000	no	poor	m	33 28.816	70 45.167	15:00	gasoline
PC	ST.85.08	1999	Daewoo	Nubira	1.6	yes		126,000	no	good	m	33 28.816	70 45.167	15:00	gasoline
PC	KX.35.16	1995	Daihatsu	Charade CX	1.3	i	yes	125,000	no	medium	m	33 28.816	70 45.167	15:00	gasoline
PC	LP 2511	1993	Fiat	Uno LS	1.3		yes	118,000	no	poor	m	33 28.816	70 45.167	15:00	gasoline
PC	ST 9069	1999	Honda	Civic	1.6		yes	63,000	yes	good	m	33 28.816	70 45.167	15:00	gasoline
PC	UG 3525	2001	Honda	CRV	2		yes	28,000	yes	good	m	33 28.816	70 45.167	15:00	gasoline
PC	RH.61.86	1998	Hyundai	Accent LS	1.5		yes	43,000	no	good	m	33 28.816	70 45.167	15:00	gasoline
PC	TR.39.02	2000	Hyundai	Santamo/SUV	2		yes	45,000	yes	good	m	33 28.816	70 45.167	15:00	gasoline
PC	UP6997	2001	KIA	Sephia	1.6		yes	10,000	no	good	m	33 28.816	70 45.167	15:00	gasoline
PC	BZ.61.20	1990	Mazda	929 GLX	1.6		no	153,000	no	good	m	33 28.816	70 45.167	15:00	gasoline
PC	HR 5812	1990	Nissan	Sentra	1.6		no	180,000	no	medium	m	33 28.816	70 45.167	15:00	gasoline
PC	LF.54.35	1994	Opal	Astra GLS	1.4		yes	151,000	yes	medium	m	33 28.816	70 45.167	15:00	gasoline
PC	LX.70.32	1995	Peugeot	405 Sxi	2		yes	130,000	no	good	m	33 28.816	70 45.167	15:00	gasoline
PC	LB.93.30	1993	Peugeot	505 SRI	2.2		yes	91,000	yes	medium	m	33 28.816	70 45.167	15:00	gasoline
PC	VZ.16.19	2001	Renault	Scenic	2		yes		yes	good	m	33 28.816	70 45.167	15:00	gasoline
PC	SF.13.66	1996	Skoda	Lxi Felicia	1.5		yes	105,000	no	medium	m	33 28.816	70 45.167	15:00	gasoline
PC	DE.11.74	1992	Subaru	Legacy GL	1.8		yes	194,000	yes	medium	m	33 28.816	70 45.167	15:00	gasoline
PC	SP 8016	1998	Suzuki	Maruti	1		yes	79,000	no	medium	m	33 28.816	70 45.167	15:00	gasoline
PC	DS 2004	1981	Suzuki	Swift	1.3		no	81,000	no	medium	m	33 28.816	70 45.167	15:00	gasoline
PC	TZ.22.28	2001	Suzuki	(like CRV	1.6		yes		yes	good	m	33 28.816	70 45.167	15:00	gasoline
PC	RV.61.04	1997	Suzuki	Baleno	1.6		yes	87,000	no	good	m	33 28.816	70 45.167	15:00	gasoline
PC	PZ 7606	1997	Toyota	Tercel	1.5		yes	78,000	no	medium	m	33 28.816	70 45.167	15:00	gasoline
PC	SC.96.72	1996	Toyota	Tercel	1.5		yes	68,000	no	good	m	33 28.816	70 45.167	15:00	gasoline
PC	RL.26.23	1997	Toyota	Tercel Gli	1.5		yes	70,000	no	good	m	33 28.816	70 45.167	15:00	gasoline
PC	LX.43.17	1994	Toyota	Tercel Lei	1.5		yes	108,000	no	good	m	33 28.816	70 45.167	15:00	gasoline
PC	TV 7538	2000	VW	Golf	1.8		yes	40,000	yes	good	m	33 28.816	70 45.167	15:00	gasoline
PC	LB.75.40	1995	VW	Vento GL	1.8		yes	105,000	no	good	m	33 28.816	70 45.167	15:00	gasoline
Truck	DX.50.60	1992	Chevrolet	Love Supercab	2.3		no	114,000	no	medium	m	33 28.816	70 45.167	15:00	gasoline
Truck	DV.79.34	1990	Nissan	Supercab	2.4		no	236,000	no	medium	m	33 28.816	70 45.167	15:00	gasoline
PC	UK.79.35	2001	Chevrolet	Corsa	1.6		no	18,000	no	good	m	33 28.816	70 45.167	16:00	diesel
PC	UL.37.09	2001	Chevrolet	Corsa	1.6	mpfi	yes	6,000	no	good	m	33 28.816	70 45.167	16:00	gasoline

PC	TL.80.73	2000 Chevrolet	Cavalier	2.2	yes	no	good	m	33 28.816	70 45.167	16:00	gasoline	
PC	KH.82.11	1992 Citroen		1.1	yes	168,000	no	medium	m	33 28.816	70 45.167	16:00	gasoline
PC	SE.33.33	2001 Daewoo	Matiz	1	yes	6,000	no	good	m	33 28.816	70 45.167	16:00	gasoline
PC	SG.45.38	1998 Daewoo	Nubira	1.6	yes	67,000	no	good	m	33 28.816	70 45.167	16:00	gasoline
PC	KL.44.00	1994 Daihatsu		1.3	yes	162,000	no	medium	m	33 28.816	70 45.167	16:00	gasoline
PC	SL.75.17	2000 Ford	Modero	2	yes	39,000	no	good	m	33 28.816	70 45.167	16:00	gasoline
PC	RE.55.79	1993 Honda	Civic	1.6	yes	159,000	no	medium	m	33 28.816	70 45.167	16:00	gasoline
PC	TL.87.33	2000 Hyundai	Accent LS	1.5	yes	30,000	no	medium	m	33 28.816	70 45.167	16:00	gasoline
PC	UH.47.74	2001 Hyundai	Santamo	2	yes	12,000	yes	good	m	33 28.816	70 45.167	16:00	gasoline
PC	LL.74.52	1993 Hyundai	Scoupe LS	2	yes		yes	medium	m	33 28.816	70 45.167	16:00	gasoline
PC	VA.76.03	2001 Hyundai	Trajat	2.5	yes	32,000	yes	good	m	33 28.816	70 45.167	16:00	gasoline
PC	PT.69.85	1996 KIA	Pride	1	yes	130,000	no	medium	m	33 28.816	70 45.167	16:00	gasoline
PC	KB.26.80	1992 Lada	2105	1.6	yes	28,000	no	medium	m	33 28.816	70 45.167	16:00	gasoline
PC	SP.34.91	2000 Mazda	Artis	1.6	yes		no	good	m	33 28.816	70 45.167	16:00	gasoline
PC	FZ.91.55	1975 Mercedes	240D	2.4	no	209,000	yes	medium	m	33 28.816	70 45.167	16:00	diesel
PC	FZ.13.54	1991 Nissan	Sunny	1.5	no	120,000	no	medium	m	33 28.816	70 45.167	16:00	gasoline
PC	KT.82.22	1995 Opel	Vectra	1.8	yes	133,000	no	medium	m	33 28.816	70 45.167	16:00	gasoline
PC	DS.52.61	1991 Peugeot	405 GL	2	no	130,000	no	medium	m	33 28.816	70 45.167	16:00	gasoline
PC	TG.44.14	2000 Renault	Megene	2	yes		yes	good	m	33 28.816	70 45.167	16:00	gasoline
PC	TH.28.09	2000 Samsung	SQ5	2	yes	52,000	yes	good	m	33 28.816	70 45.167	16:00	gasoline
PC	CT.34.27	1985 SEAT	Fura GL	1.3	no		no	poor	m	33 28.816	70 45.167	16:00	gasoline
PC	DD.91.49	1990 Subaru	Legacy GX 4x4	2.2	no	183,000	yes	medium	m	33 28.816	70 45.167	16:00	gasoline
PC	RX.11.51	1998 Suzuki	Baleno GLXSi	1.6	yes	62,000	no	good	m	33 28.816	70 45.167	16:00	gasoline
PC	RY.98.04	1997 Suzuki	Baleno GLXSi	1.6	yes	84,000	no	good	m	33 28.816	70 45.167	16:00	gasoline
PC	UZ.24.45	2001 Suzuki	Baleno GLXSi	1.6	yes	1,300	no	good	m	33 28.816	70 45.167	16:00	gasoline
PC	RV.45.03	1995 Suzuki	JX	1.6	yes	125,000	no	good	m	33 28.816	70 45.167	16:00	gasoline
PC	LY.42.31	1996 Toyota	Tercel GLi	1.5	yes	93,000	no	good	m	33 28.816	70 45.167	16:00	gasoline
PC	TV.88.94	2001 Toyota	Yaris	1.5	yes		no	good	m	33 28.816	70 45.167	16:00	gasoline
PC	PE.63.23	1997 VW	Passat GL (sta wgn)	1.8	yes	70,000	no	good	m	33 28.816	70 45.167	16:00	gasoline
Taxi	SA.86.34	1999 Renault	19	1.9	no	63,000	no	medium	m	33 28.816	70 45.167	16:00	diesel
Truck	TR.42.53	2000 Chevrolet	Venture	1.8	yes		yes	good	m	33 28.816	70 45.167	16:00	gasoline
Truck	DH.16.22	1992 Chevrolet		2	no	375,000	no	poor	m	33 28.816	70 45.167	16:00	gasoline
Truck	TR.71.27	2000 Chevrolet	Apache S10	2.2	yes	35,000	no	good	m	33 28.816	70 45.167	16:00	gasoline
Truck	UY.37.82	2000 Citroen	Berlingo (Commercial)	1.9	no		no	good	m	33 28.816	70 45.167	16:00	diesel

Truck	RE.31.35	1998 KIA	BESTA	2	i	no	91,000	no	medium	m	33 28.816	70 45.167	16:00	diesel
PC	AX.53.27	1996 Chevrolet	Chevette SL	1.4		no	153,000	no	medium	m	33 28.816	70 45.167	17:00	gasoline
PC	RY.66.26	1999 Chevrolet	Corsa GL	1.6	mpfi	yes	60,000	no	medium	m	33 28.816	70 45.167	17:00	gasoline
PC	PJ.91.04	1996 Chevrolet	Blazer	4.3		yes	135,000	no	good	m	33 28.816	70 45.167	17:00	gasoline
PC	UK.88.21	2001 Hyundai	Accent GLS	1.5		yes		no	good	m	33 28.816	70 45.167	17:00	gasoline
PC	PP.87.95	1998 KIA	Avella	1.4		yes	32,000	no	good	m	33 28.816	70 45.167	17:00	gasoline
PC	DV.59.83	1991 Mazda	323	1.6		no	154,000	no	medium	m	33 28.816	70 45.167	17:00	gasoline
PC	NB.48.99	1995 Nissan	Sentra EX	1.6		yes	130,000	no	good	m	33 28.816	70 45.167	17:00	gasoline
PC	EN.83.01	1988 Nissan	Datsun	2		no	145,000	no	poor	m	33 28.816	70 45.167	17:00	gasoline
PC	NC.51.18	1992 Peugeot	306 XM	1.8		no	95,000	no	good	m	33 28.816	70 45.167	17:00	gasoline
PC	TK.36.37	2000 Suzuki	Baleno	1.6		yes	40,000	no	good	m	33 28.816	70 45.167	17:00	gasoline
PC	TE.51.33	2000 Suzuki	Baleno GLX	1.6		yes		yes	good	m	33 28.816	70 45.167	17:00	gasoline
PC	SS.36.10	1998 Toyota	Tercel	1.5		yes	82,000	no	good	m	33 28.816	70 45.167	17:00	gasoline
PC	DA.63.56	1990 Chevrolet	Chevette SL	1.4		no	90,000	no	medium	m	33 30.943	70 43.109	18:00	gasoline
PC	PH.16.07	1998 Chevrolet	Cavalier	2.2		yes		yes	good	m	33 30.943	70 43.109	18:00	gasoline
PC	PN.45.11	1995 Daewoo	Racer Eti	1.5		yes	72,000	no	medium	m	33 30.943	70 43.109	18:00	gasoline
PC	LP.20.93	1994 Daihatsu	Feroza	1.6	efi	yes	85,000	no	good	m	33 30.943	70 43.109	18:00	gasoline
PC	NR.54.61	1996 Fiat	Punto S	1.3		yes		no	good	m	33 30.943	70 43.109	18:00	gasoline
PC	RN.20.87	1995 Fiat	Punto S	1.3		yes	120,000	no	good	m	33 30.943	70 43.109	18:00	gasoline
PC	AZ.37.47	1988 Fiat	station wagon	1.8		no	149,000	no	medium	m	33 30.943	70 43.109	18:00	gasoline
PC	TH.75.20	1991 Hyundai	Accent LS	1.5		yes	54,000	no	good	m	33 30.943	70 43.109	18:00	gasoline
PC	UP.89.88	2001 Hyundai	Accent GLS	1.5		yes	11,000	no	good	m	33 30.943	70 43.109	18:00	gasoline
PC	UF.85.03	2001 Hyundai	Accent Pride	1.5		yes	14,000	no	good	m	33 30.943	70 43.109	18:00	gasoline
PC	NP.84.44	1997 KIA	Sephia GTX	1.6		yes	112,000	no	good	m	33 30.943	70 43.109	18:00	gasoline
PC	TV.56.67	2000 Mazda	323 GLF	1.6		yes		no	good	m	33 30.943	70 43.109	18:00	gasoline
PC	RB.23.12	1995 Mazda	323 GLX	1.6		yes	97,000	no	medium	m	33 30.943	70 43.109	18:00	gasoline
PC	KD.79.12	1991 Mitsubishi	Lancer Gli	1.8		no	145,000	no	medium	m	33 30.943	70 43.109	18:00	gasoline
PC	DD.74.86	1989 Nissan	Sunny	1.5		no	231,000	no	medium	m	33 30.943	70 43.109	18:00	gasoline
PC	DK.27.29	1990 Nissan	Sunny DX	1.5		no	131,000	no	medium	m	33 30.943	70 43.109	18:00	gasoline
PC	UP.67.29	1999 Nissan	Primera GX	2		yes		no	good	m	33 30.943	70 43.109	18:00	gasoline
PC	LG.30.76	1993 Peugeot	306 XM	1.6		yes	80,000	no	medium	m	33 30.943	70 43.109	18:00	gasoline
PC	TF.56.23	1999 Peugeot	Sotta 106	1.6		yes	52,000	no	good	m	33 30.943	70 43.109	18:00	gasoline
PC	FZ.50.27	1991 Peugeot	405 SR	1.8		no	104,000	no	medium	m	33 30.943	70 43.109	18:00	gasoline
PC	KH.88.57	1993 Subaru	Justy 4x4	1.2	i	yes	127,000	no	good	m	33 30.943	70 43.109	18:00	gasoline
PC	KG.89.71	1993 Subaru	Legacy	1.8		yes	102,000	no	poor	m	33 30.943	70 43.109	18:00	gasoline
PC	LH.59.37	1993 Subaru	Legacy	1.8		yes	27,000?	no	good	m	33 30.943	70 43.109	18:00	gasoline

PC	CN.67.56	1991 Suzuki	Fronte GL	1		no	130,000	no	medium	m	33 30.943	70 43.109	18:00	gasoline
PC	UB.85.24	2001 Suzuki	Maruti	1	mpi	yes	9,000	no	good	m	33 30.943	70 43.109	18:00	gasoline
PC	SA.25.66	1999 Suzuki	Maruti	1	mpi	yes	81,000	no	good	auto	33 30.943	70 43.109	18:00	gasoline
PC	PS.91.20	1998 Suzuki	Baleno GLX	1.6		yes		no	good	m	33 30.943	70 43.109	18:00	gasoline
PC	TC.12.92	1999 Toyota	Tercel	1.5		yes	102,000	no	good	m	33 30.943	70 43.109	18:00	gasoline
PC	KX.38.03	1995 Toyota	Tercel	1.5		yes	99,000	no	good	m	33 30.943	70 43.109	18:00	gasoline
PC	PL.72.95	1996 Toyota	Tercel Xli	1.5		yes	100,000	no	good	m	33 30.943	70 43.109	18:00	gasoline
PC	UK.26.26	2001 VW	Bora	2		yes	14,000	yes	good	auto	33 30.943	70 43.109	18:00	gasoline
Taxi	SG.85.55	1997 Daewoo	Heaven	1.5		yes	225,000	no	good	m	33 30.943	70 43.109	18:00	gasoline
Truck	SF.69.05	1997 Chevrolet	Luv supercab	2.3	iS	yes	60,000	no	good	m	33 30.943	70 43.109	18:00	gasoline
Truck	DL.88.55	2000 Daewoo	Damas (comm.)	1		yes	35,000	no	good	m	33 30.943	70 43.109	18:00	gasoline
Truck	NP.98.26	1995 Fiat	Fiorino	1.7		no	104,000	no	medium	m	33 30.943	70 43.109	18:00	diesel
Truck	TX.64.04	2001 Renault	Kangoo	1.9		no		no	good	m	33 30.943	70 43.109	18:00	diesel
PC	BZ.36.28	1990 Chevrolet	Chevette	1.4		no	187,000	no	medium	m	33 30.943	70 43.109	19:00	gasoline
PC	EZ.17.37	1988 Chevrolet	Gemini	1.5		no	210,000	yes	medium	m	33 30.943	70 43.109	19:00	gasoline
PC	UB.72.17	2001 Chevrolet	Corsa GL	1.6	mpfi	yes	14,000	no	good	m	33 30.943	70 43.109	19:00	gasoline
PC	TJ.94.40	2000 Daewoo	Lanos	1.5		yes	32,000	no	good	m	33 30.943	70 43.109	19:00	gasoline
PC	BZ.19.14	1988 Daihatsu	Charade Gira CS	1.3		no		no	medium	m	33 30.943	70 43.109	19:00	gasoline
PC	DV.52.26	2000 Fiat	Palio EDX	1.3		yes	37,000	no	good	m	33 30.943	70 43.109	19:00	gasoline
PC	NS.45.42	1993 Fiat	Uno ies	1.4		yes	79,000	no	good	m	33 30.943	70 43.109	19:00	gasoline
PC	RR.83.22	1998 Hyundai	Accent L	1.5		yes	58,000	no	good	m	33 30.943	70 43.109	19:00	gasoline
PC	TX.13.10	2000 KIA	Avella II	1.4		yes	32,000	no	good	m	33 30.943	70 43.109	19:00	gasoline
PC	SS.27.19	1999 Nissan	Sentra II Plus XE	1.6		yes	61,000	no	good	m	33 30.943	70 43.109	19:00	gasoline
PC	SX.38.51	1999 Suzuki	Baleno GLXSE	1.6		yes	53,000	yes	good	m	33 30.943	70 43.109	19:00	gasoline
PC	UB.16.87	2001 Suzuki	Grand Nomade	2		yes		no	good	m	33 30.943	70 43.109	19:00	gasoline
PC	SL.81.65	1999 Toyota	Tercel	1.5		yes	53,000	no	good	m	33 30.943	70 43.109	19:00	gasoline
PC	RT.91.75	1998 Toyota	Tercel GLi	1.5		yes	69,000	no	good	m	33 30.943	70 43.109	19:00	gasoline
PC	EB.72.52	1988 Toyota	Corolla	1.6		no	255,000	no	medium	m	33 30.943	70 43.109	19:00	gasoline
PC	EZ.23.70	1987 Toyota	Lancer GL	1.6		no	262,000	no	medium	m	33 30.943	70 43.109	19:00	gasoline
PC	EN.79.08	1990 VW	Santana	1.8		no		no	good	m	33 30.943	70 43.109	19:00	gasoline
Truck	ND.61.87	1997 Chevrolet	S10 Ext. Cab	2.2		yes	86,000	yes	good	m	33 30.943	70 43.109	19:00	gasoline
Truck	TJ.48.50	1999 Citroen	Commercial Van	1.8		no	40,000	no	good	m	33 30.943	70 43.109	19:00	diesel
Truck	SH.62.83	1994 Toyota	HiLux--super cab	2.4		yes	120,000	no	medium	m	33 30.943	70 43.109	19:00	gasoline
PC	KP.31.76	1993 Citroen	BX 16 Tgi	1.6		yes	140,000	no	good	m	33 30.943	70 43.109	20:00	gasoline
PC	CK.25.05	1975 Fiat	600	0.6		no		no	medium	m	33 30.943	70 43.109	20:00	gasoline
PC	TK.39.60	1999 Fiat	Uno Si	1.3		yes	34,000	no	medium	m	33 30.943	70 43.109	20:00	gasoline
PC	KH.61.47	1993 Mazda	323	1.6		yes	178,000	no	good	m	33 30.943	70 43.109	20:00	gasoline

PC	DE.34.37	1991 Nissan	Pulsur	1.4	no	no	medium	m	33 30.943	70 43.109	20:00	gasoline
PC	EZ.59.66	1989 Nissan	Sunny DX	1.5	no	197,000 no	medium	auto	33 30.943	70 43.109	20:00	gasoline
PC	SD.99.61	1998 Nissan	Sentra II XE	1.6	yes	74,000 no	good	m	33 30.943	70 43.109	20:00	gasoline
PC	DH.62.47	1990 Renault	TXE	1.8	no	133,000 no	medium	m	33 30.943	70 43.109	20:00	gasoline
PC	RC.58.00	1999 Suzuki	Alto GL	1	yes	30,000 no	good	m	33 30.943	70 43.109	20:00	gasoline
PC	NF.91.12	1995 Toyota	Tercel Xli	1.5	yes	120,000 no	good	m	33 30.943	70 43.109	20:00	gasoline
PC	HT.34.33	1985 VW	Bug	1.5	no	no	medium	m	33 30.943	70 43.109	20:00	gasoline
Truck	KG.66.56	1990 Suzuki	4-cyl. Van	1.7	no	294,000 no	medium	m	33 30.943	70 43.109	20:00	gasoline

Data Collected December 3, 2001 in Santiago, Chile in Vitacura Area

Veh. Type	License No.	Model Year	Veh. Manuf.	Model	Size	Fuel Injec.	Catal yst	Mileage (Km)	Air Cond	Maint. Cond.	Trans.	Latitude (S)	Longitude (W)	Time	Fuel
PC	KN.22.83	1992	Alfa Romeo	EuroSport V6 Turbo	1.6	Yes		100,000	Yes	Good	M	33 24.1379	70 35.5907	7:00	gasoline
PC	UZ.41.96	2000	Citroen	Saxo	1.4	Yes			Yes	Good	M	33 24.1379	70 35.5907	7:00	gasoline
PC	RR.88.20	1996	Ford	Escort	1.6	Yes		57,000	Yes	Good	M	33 24.1379	70 35.5907	7:00	gasoline
PC	NX.28.04	1995	Ford	Escort LX	1.6	Yes		84,000	Yes	Good	M	33 24.1379	70 35.5907	7:00	gasoline
PC	KL.33.11	1994	Honda	Accord	2.2 i	Yes		94,000	Yes	Good	A	33 24.1379	70 35.5907	7:00	gasoline
PC	TU.55.09	2000	Mazda	626	1.9	Yes			Yes	Good	M	33 24.1379	70 35.5907	7:00	gasoline
PC	LD.70.96	1995	Mitsubishi	Lancer GLX	1.6 i	Yes		71,000	No	Good	M	33 24.1379	70 35.5907	7:00	gasoline
PC	PV.58.42	1998	Nissan	CNTRA II XE	1.4	Yes		83,000	No	Good	M	33 24.1379	70 35.5907	7:00	gasoline
PC	DD.52.30	1991	Nissan	Sunny DX	1.5	No		81,000	Yes	Poor	M	33 24.1379	70 35.5907	7:00	gasoline
PC	CD.1653	2001	Nissan	Sentra	1.6	Yes			Yes	Good	M	33 24.1379	70 35.5907	7:00	gasoline
PC	LR.43.96	1994	Opel	Astra	1.4 i	Yes		100,000	Yes	Good	M	33 24.1379	70 35.5907	7:00	gasoline
PC	RE.10.38	1999	Subaru	Legacy GL	2	Yes		63,000	Yes	Good	A	33 24.1379	70 35.5907	7:00	gasoline
PC	PC.21.15	1995	Subaru	Legacy LX	2	Yes		80,000	Yes	Good	M	33 24.1379	70 35.5907	7:00	gasoline
PC	KU.56.87	1992	Subaru	Legacy VZ	2	Yes		167,000	Yes	Good	M	33 24.1379	70 35.5907	7:00	gasoline
PC	AH.46.65	1988	Volkswagen	Bug	1.6	No		134,000	No	Good	M	33 24.1379	70 35.5907	7:00	gasoline
PC	UH.68.85	2000	Volkswagen	GOL	1.6	Yes			No	Good	M	33 24.1379	70 35.5907	7:00	gasoline
PC	SV.38.23	1999	Volkswagen	GOS Station Wagon	1.6 i	Yes		50,000	No	Good	M	33 24.1379	70 35.5907	7:00	gasoline
PC	LP.28.76	1995	Volkswagen	Vento GL	1.8	Yes		107,000	No	Medium	M	33 24.1379	70 35.5907	7:00	gasoline
Truck	SE.56.44	1999	Chevrolet	Coseche 1500	2.5	Yes		91,000	Yes	Good	M	33 24.1379	70 35.5907	7:00	gasoline
Truck	NB.52.14	1996	Ford	Ranger XLT	3	Yes		84,000	Yes	Good	M	33 24.1379	70 35.5907	7:00	gasoline
PC	FE.13.89	1988	Chevrolet		2	No			No	Poor	M	33 24.1379	70 35.5907	8:00	gasoline
PC	NL.40.26	1995	Dodge	Caravan	2.5	Yes		64,000	Yes	Good	M	33 24.1379	70 35.5907	8:00	gasoline
PC	GP.59.72	1985	Dodge	Aspen	3	No		204,000	No	Poor	M	33 24.1379	70 35.5907	8:00	gasoline
PC	BK.71.91	1985	Fiat	147 GL	1.4	No		121,000	No	Poor	M	33 24.1379	70 35.5907	8:00	gasoline
PC	NU.65.01	1997	Ford	Fiesta	1.3	Yes		5,000	No	Medium	M	33 24.1379	70 35.5907	8:00	gasoline
PC	SC.35.12	1999	Ford	Explorer Sport	4	Yes		42,000	Yes	Good	M	33 24.1379	70 35.5907	8:00	gasoline
PC	TF.77.01	2000	Honda	Civic LX	1.6	Yes		14,000	Yes	Good	A	33 24.1379	70 35.5907	8:00	gasoline
PC	NX.58.05	1997	Hyundai	Elantra GLS	1.8	Yes		14,000	Yes	Good	M	33 24.1379	70 35.5907	8:00	gasoline
PC	PZ.73.32	1998	Hyundai	Sonata GLS	2	Yes		81,000	Yes	Good	A	33 24.1379	70 35.5907	8:00	gasoline
PC	NH.78.13	1994	Jeep	V8	5.2 mpi	Yes		99,000	Yes	Good	A	33 24.1379	70 35.5907	8:00	gasoline
PC	RN.24.42	1991	KIA	Avella	1.5	No		112,000	No	Good	M	33 24.1379	70 35.5907	8:00	gasoline
PC	UJ.65.73	2000	KIA	Sportage	2	Yes			Yes	Good	M	33 24.1379	70 35.5907	8:00	gasoline
PC	FZ.98.96	1990	Mazda	MX-6	1.8	No		180,000	No	Good	M	33 24.1379	70 35.5907	8:00	gasoline

PC	SY.71.29	1999 Mazda	626	1.9	Yes		Yes	Good	A	33 24.1379	70 35.5907	8:00 gasoline
PC	BD.86.49	1990 Mazda	626 GLX	2	No	129,000	Yes	Good	A	33 24.1379	70 35.5907	8:00 gasoline
PC	LS.86.60	1991 Mercedes	C280	2.8	Yes		Yes	Good	A	33 24.1379	70 35.5907	8:00 gasoline
PC	SV.76.14	1999 Mitsubishi	Colt GLX	1.5 i	Yes		Yes	Good	A	33 24.1379	70 35.5907	8:00 gasoline
PC	LD.83.09	1994 Nissan	Saloon	1.6	Yes	133,000	Yes	Medium	A	33 24.1379	70 35.5907	8:00 gasoline
PC	NP.95.89	1996 Nissan	V16	1.6	Yes	62,000	No	Medium	M	33 24.1379	70 35.5907	8:00 gasoline
PC	PV.99.51	1998 Opel	Astra	1.4	Yes	71,000	Yes	Good	M	33 24.1379	70 35.5907	8:00 gasoline
PC	SC.18.39	1999 Opel	Vectra	1.6	Yes		Yes	Good	M	33 24.1379	70 35.5907	8:00 gasoline
PC	KE.74.14	1993 Opel	Omega	2 i	Yes	107,000	Yes	Good	A	33 24.1379	70 35.5907	8:00 gasoline
PC	FX.82.55	1988 Peugeot	205	1.4	No	190,000	No	Medium	M	33 24.1379	70 35.5907	8:00 gasoline
PC	DL.3470	1989 Peugeot	Z05 GT	1.4	No	164,000	No	Medium	M	33 24.1379	70 35.5907	8:00 gasoline
PC	TS.80.70	2000 Peugeot	406	2	Yes		Yes	Good	M	33 24.1379	70 35.5907	8:00 gasoline
PC	RA.11.07	1998 Peugeot	Sotta	2.2	Yes	48,000	Yes	Good	A	33 24.1379	70 35.5907	8:00 gasoline
PC	SY.60.77	1999 Renault	Clio	1.4	Yes	29,000	Yes	Good	M	33 24.1379	70 35.5907	8:00 gasoline
PC	SL.70.57	1999 Subaru	Legacy Sta. wagon	2	Yes	47,000	No	Good	M	33 24.1379	70 35.5907	8:00 gasoline
PC	KF.18.89	1991 Subaru		2.2	Yes	151,000	No	Medium	M	33 24.1379	70 35.5907	8:00 gasoline
PC	PP.51.80	1996 Suburu	Outback AWD	2.5	Yes	92,000	Yes	Good	A	33 24.1379	70 35.5907	8:00 gasoline
PC	PG.15.62	1998 Suzuki	Maruti	1	Yes	111,000	No	Good	M	33 24.1379	70 35.5907	8:00 gasoline
PC	SV.84.58	1999 Toyota	Tercel	1.5	Yes	25,000	No	Good	A	33 24.1379	70 35.5907	8:00 gasoline
PC	LG.56.37	1998 Toyota	Tercel LE	1.5	Yes	62,000	Yes	Good	M	33 24.1379	70 35.5907	8:00 gasoline
PC	TZ.99.45	2000 Volkswagen	GOL	1.6	No	21,000	No	Good	M	33 24.1379	70 35.5907	8:00 gasoline
PC	KJ.69.84	1994 Volkswagen	Golf	1.8	Yes	84,000	No	Good	M	33 24.1379	70 35.5907	8:00 gasoline
PC	PH.76.52	1998 Volkswagen	Golf GL	1.8	Yes	106,000	No	Good	M	33 24.1379	70 35.5907	8:00 gasoline
PC	PH.18.85	1996 Volkswagen	Golf GL	1.8	Yes	69,000	No	Good	M	33 24.1379	70 35.5907	8:00 gasoline
PC	PA.40.46	1997 Volkswagen	Golf GL	1.8	Yes	52,000	Yes	Good	M	33 24.1379	70 35.5907	8:00 gasoline
PC	NK.69.48	1995 Volvo	740 GL sta. wagon	2.3	Yes	97,000	Yes	Good	A	33 24.1379	70 35.5907	8:00 gasoline
Truck	NP.16.05	1997 Chevrolet	LUV Supercab	2.3 mpfi	Yes		Yes	Good	M	33 24.1379	70 35.5907	8:00 gasoline
Truck	LC.88.10	1994 Chevrolet	LUV Supercab	2.3	Yes	79,000	No	Good	M	33 24.1379	70 35.5907	8:00 gasoline
Truck	NZ.73.15	1995 Ford	Ranger XLT	3	Yes	78,000	No	Medium	M	33 24.1379	70 35.5907	8:00 gasoline
Truck	PX.91.71	1996 Toyota	Mitsui/Hilux Sup.Cab	2.4	Yes	109,000	Yes	Good	M	33 24.1379	70 35.5907	8:00 gasoline
PC	SJ.41.19	1999 Chrysler	Neon LE	1.6	Yes	101,000	Yes	Good	M	33 24.1379	70 35.5907	9:00 gasoline
PC	PC.43.80	1997 Ford	Escort LX sta.wagon	1.6	Yes	91,000	Yes	Good	M	33 24.1379	70 35.5907	9:00 gasoline
PC	PC.21.46	1997 Hyundai	Sonata GLS	2	Yes	74,000	Yes	Good	M	33 24.1379	70 35.5907	9:00 gasoline
PC	UZ.46.76	2001 Jeep	4x4 L	4	Yes		Yes	Good	A	33 24.1379	70 35.5907	9:00 gasoline
PC	NC.50.02	1996 KIA	Towner DL-comm.	1.8	Yes		No	Medium	M	33 24.1379	70 35.5907	9:00 gasoline
PC	UA.85.43	2001 Land Rover	Freelander	3.9	Yes		Yes	Good	M	33 24.1379	70 35.5907	9:00 gasoline

PC	SY.84.52	1999 Mazda	626	1.9	Yes	Yes	Medium	M	33 24.1379	70 35.5907	9:00 gasoline	
PC	CA.38.88	1985 Mercedes	240D	2.4	No	207,000	Yes	Medium	M	33 24.1379	70 35.5907	9:00 diesel
PC	LB.61.80	1994 Nissan	GXE	1.6	Yes	54,000	Yes	Good	A	33 24.1379	70 35.5907	9:00 gasoline
PC	KV.68.03	1993 Peugeot	605 Sri	2.5	Yes	56,000	Yes	Good	A	33 24.1379	70 35.5907	9:00 gasoline
PC	UH.24.12	2001 Suzuki	Baleno GLX	1.6	Yes	7,000	Yes	Good	M	33 24.1379	70 35.5907	9:00 gasoline
PC	KF.96.63	1991 Toyota	Tercel DX	1.5	Yes	139,000	No	Good	M	33 24.1379	70 35.5907	9:00 gasoline
PC	KR.74.79	1993 Toyota	Esparo	1.6	Yes	63,000	No	Medium	M	33 24.1379	70 35.5907	9:00 gasoline
PC	NS.35.91	1996 Volkswagen	Golf	1.8	Yes	39,000	Yes	Good	M	33 24.1379	70 35.5907	9:00 gasoline
PC	LJ.37.96	1994 Volkswagen	Vento GL	1.8	Yes	79,000	No	Good	M	33 24.1379	70 35.5907	9:00 gasoline
Truck	DD.44.88	1989 Chevrolet	LUV 2300	2.3	No	172,000	No	Poor	M	33 24.1379	70 35.5907	9:00 gasoline
Truck	RX.31.32	1998 Chevrolet	LUV Supercab	2.3	Yes	74,000	Yes	Medium	M	33 24.1379	70 35.5907	9:00 gasoline
PC	NS.59.07	1996 BMW	325i	2.5	Yes	Yes	Yes	Good	A	33 24.0890	70 34.6590	10:00 gasoline
PC	UH.20.07	2001 Chevrolet	Astra	1.6	Yes	Yes	Yes	Good	M	33 24.0890	70 34.6590	10:00 gasoline
PC	SS.29.72	2000 Chevrolet	Vectra	1.8	Yes	Yes	Yes	Good	A	33 24.0890	70 34.6590	10:00 gasoline
PC	KY.24.93	1991 Daewoo	Racer	1.5	No	145,000	No	Medium	M	33 24.0890	70 34.6590	10:00 gasoline
PC	TL.88.16	1997 Honda	Civic EX	1.6	Yes	86,000	Yes	Good	A	33 24.0890	70 34.6590	10:00 gasoline
PC	SY.79.80	1999 Honda	CRV	2	Yes	55,000	No	Good	M	33 24.0890	70 34.6590	10:00 gasoline
PC	DV.72.69	1986 Lada		1.3	No	177,000	No	Good	M	33 24.0890	70 34.6590	10:00 gasoline
PC	NK.15.07	1996 Nissan	SuperSaloon	1.6	Yes	84,000	No	Good	M	33 24.0890	70 34.6590	10:00 gasoline
PC	RR.62.31	1997 Opel	Compbo Si----comm.	1.4	Yes	90,000	Yes	Medium	M	33 24.0890	70 34.6590	10:00 gasoline
PC	RN.15.91	1997 Opel	Corsa	1.6	Yes	66	No	Good	M	33 24.0890	70 34.6590	10:00 gasoline
PC	UC.78.01	2001 Peugeot	206	1.4	Yes	No	No	Good	M	33 24.0890	70 34.6590	10:00 gasoline
PC	TX.72.92	2000 Peugeot	306	1.8	Yes	Yes	Yes	Good	M	33 24.0890	70 34.6590	10:00 gasoline
PC	SZ.19.95	2000 Samsung	SQ5	2.5	Yes	40,000	Yes	Good	A	33 24.0890	70 34.6590	10:00 gasoline
PC	RK.46.45	1998 SEAT	Ibiza SXE	1.6	Yes	97,000	No	Good	M	33 24.0890	70 34.6590	10:00 gasoline
PC	NC.81.67	1996 Volkswagen	Polo	1.4	Yes	72,000	No	Good	M	33 24.0890	70 34.6590	10:00 gasoline
PC	NJ.75.31	1996 Volkswagen	Vento	1.8	Yes	114,000	Yes	Good	A	33 24.0890	70 34.6590	10:00 gasoline
Taxi	PE.80.63	1995 Renault	Eclair	1.6	Yes	291,000	No	Medium	M	33 24.0890	70 34.6590	10:00 gasoline
Truck	UK.30.94	2001 Ford	Ranger Supercab	2.5	Yes	24,000	Yes	Good	M	33 24.0890	70 34.6590	10:00 gasoline
Truck	AT.25.87	1988 Ford	ISO (big)	3.5	No	160,000	No	Medium	M	33 24.0890	70 34.6590	10:00 gasoline
Truck	SH.89.84	2000 Mitsubishi	Supercab L200	2.4	Yes	99,000	No	Good	M	33 24.0890	70 34.6590	10:00 gasoline
PC	AL.30.27	1985 Chevrolet	Monza	1.8	Yes	304,000	No	Good	M	33 24.0890	70 34.6590	11:00 gasoline
PC	TR.52.97	2000 Chevrolet	Astro Van	3	Yes	Yes	Yes	Good	M	33 24.0890	70 34.6590	11:00 gasoline
PC	UC.58.90	2001 Chrysler	Caravan	2.5	Yes	Yes	Yes	Good	M	33 24.0890	70 34.6590	11:00 gasoline
PC	KT.19.70	1993 Daewoo	Racer	1.5	Yes	116,000	No	Good	A	33 24.0890	70 34.6590	11:00 gasoline
PC	UV.45.88	2001 Daewoo	Nubira	1.6	Yes	6,000	Yes	Good	M	33 24.0890	70 34.6590	11:00 gasoline

PC	TY.59.15	2000 Ford	Explorer	4	Yes	19,000	Yes	Good	M	33 24.0890	70 34.6590	11:00 gasoline
PC	RP.28.18	1999 Honda	Civic	1.6	Yes	81,000	Yes	Good	M	33 24.0890	70 34.6590	11:00 gasoline
PC	UH.61.56	2001 Hyundai	Santamo—sta. wagon	2	Yes	19,000	Yes	Good	M	33 24.0890	70 34.6590	11:00 gasoline
PC	UA.88.01	2001 Hyundai	H-1 SUX----large van	3.5	No		Yes	Good	M	33 24.0890	70 34.6590	11:00 diesel
PC	SR.68.05	1999 KIA	Besta	2.7	Yes	102,000	No	Medium	M	33 24.0890	70 34.6590	11:00 gasoline
PC	SR.84.33	1999 Mazda	Artis	1.6	Yes		No	Good	M	33 24.0890	70 34.6590	11:00 gasoline
PC	SH.76.27	1999 Mitsubishi	Montero	3	No		No	Poor	M	33 24.0890	70 34.6590	11:00 gasoline
PC	TZ.97.89	2000 Nissan	Pathfinder SE	3.3	Yes		Yes	Good	A	33 24.0890	70 34.6590	11:00 gasoline
PC	KP.43.32	1993 Peugeot	405 GR	2	Yes	187,000	Yes	Medium	A	33 24.0890	70 34.6590	11:00 gasoline
PC	EH.60.23	1988 Peugeot	505 Evolution	2	No	163,000	No	Medium	M	33 24.0890	70 34.6590	11:00 gasoline
PC	CR.38.78	1988 Peugeot	504	2.2	Yes	175,000	Yes	Good	M	33 24.0890	70 34.6590	11:00 gasoline
PC	NK.59.28	1996 Suzuki	(small van)	1.8	Yes	133,000	No	Good	M	33 24.0890	70 34.6590	11:00 gasoline
PC	PU.83.69	1996 Toyota	Starlet	1.3	Yes		Yes	Good	M	33 24.0890	70 34.6590	11:00 gasoline
PC	HD.42.31	1989 Volkswagen	Bug	1.6	No	111,000	No	Medium	M	33 24.0890	70 34.6590	11:00 gasoline
PC	TK.64.50	2000 Volkswagen	Passant B.518T	1.8	Yes		Yes	Good	M	33 24.0890	70 34.6590	11:00 gasoline
PC	SZ.44.88	1999 Chevrolet	Corsa	1.6	Yes	23,000	No	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	RC.92.46	1998 Chrysler	Caravan	3	Yes		Yes	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	LIF.57.29	1994 Citroen	AX	1.1	Yes	47,000	No	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	NU.18.24	1995 Daewoo	Heaven	1.5	Yes	104,000	No	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	TS.36.59	2000 Daewoo	Lamor	1.6	Yes	24,000	Yes	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	NP.32.45	1995 Daihatsu	Feroza SX SUV	2	Yes	87,000	Yes	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	SN.14.90	1999 Fiat	Tempra ie	1.6	Yes	8,000	No	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	PC.7.84	1996 Ford	Contour LX	1.8	Yes	63,000	Yes	Good	A	33 24.0890	70 34.6590	12:00 gasoline
PC	SE.96.80	1999 Honda	Civic EX	1.6	Yes	42,000	Yes	Good	A	33 24.0890	70 34.6590	12:00 gasoline
PC	DG.43.81	1981 Honda	Civic GL	1.6	No		No	Medium	M	33 24.0890	70 34.6590	12:00 gasoline
PC	RX.51.93	1998 Honda	CRV	2	Yes	65,000	Yes	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	TH.76.75	2000 Hyundai	Accent L	1.5	Yes	37,000	No	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	CD.830	1999 Hyundai	Santamo	2	Yes	39,000	Yes	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	RP.10.53	1998 Hyundai	Sonata	2	Yes	43,000	Yes	Good	A	33 24.0890	70 34.6590	12:00 gasoline
PC	TC.82.39	2000 Jeep	Grand Cherokee	4	Yes		Yes	Good	A	33 24.0890	70 34.6590	12:00 gasoline
PC	TA.60.88	2000 KIA	Avella II GLSi	1.5	Yes	26,000	No	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	LA.73.75	1994 Mazda	323	1.6	Yes	172,000	No	Medium	M	33 24.0890	70 34.6590	12:00 gasoline
PC	LR.39.66	1994 Mazda	323	1.6	Yes	79,000	Yes	Good	A	33 24.0890	70 34.6590	12:00 gasoline
PC	KL.92.61	1993 Nissan		1.6	Yes	74,000	No	Medium	M	33 24.0890	70 34.6590	12:00 gasoline
PC	RC.69.98	1998 Opel	Corsa	1.4	Yes	67,000	No	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	RJ.17.17	1998 Peugeot	205	1.4	Yes	67,000	No	Good	M	33 24.0890	70 34.6590	12:00 gasoline

PC	US.83.68	2001 Peugeot	206	1.4	Yes	Yes	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	US.65.71	2001 Peugeot	206	1.4	Yes	Yes	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	UD.53.59	2001 Peugeot	3.6	1.6	Yes	Yes	Good	A	33 24.0890	70 34.6590	12:00 gasoline
PC	TF.74.33	2000 Peugeot	406	2	Yes	Yes	Good	A	33 24.0890	70 34.6590	12:00 gasoline
PC	PE.64.46	1996 Proton	Persona Gli	1.5	Yes	57,000 No	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	NZ.30.65	1995 SEAT	Cordoba GLX	1.6	Yes	89,000 No	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	PH.71.10	1996 Subaru		1.8	Yes	49,000 No	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	PY.79.38	1996 Suzuki	Baleno GLX	1.6	Yes	7,000? Yes	Medium	A	33 24.0890	70 34.6590	12:00 gasoline
PC	NX.73.93	1995 Suzuki	Vitara	1.6	Yes	107,000 No	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	NG.13.38	1995 Volkswagen	Polo	1.4	Yes	72,000 No	Good	M	33 24.0890	70 34.6590	12:00 gasoline
PC	UJ.66.19	2001 Volkswagen	Bora	1.6	Yes	Yes	Good	A	33 24.0890	70 34.6590	12:00 gasoline
PC	UC.57.34	2001 Volkswagen	Bug	1.6	Yes	16,000 Yes	Good	A	33 24.0890	70 34.6590	12:00 gasoline
PC	LB.96.29	1994 Volkswagen	Golf GL	1.8	Yes	157,000 Yes	Medium	M	33 24.0890	70 34.6590	12:00 gasoline
Truck	TP.17.84	2000 Chevrolet	LUV Supercab	2.3	Yes	79,000 Yes	Good	M	33 24.0890	70 34.6590	12:00 gasoline
Truck	DL.17.18	1988 Chevrolet	LUV Supercab	2.3	Yes	130,000 No	Good	M	33 24.0890	70 34.6590	12:00 gasoline
Truck	KS.83.52	1993 Ford	Ranger	2.3	Yes	100,000 No	Good	M	33 24.0890	70 34.6590	12:00 gasoline
Truck	SH.76.59	1999 Ford	F150	4	Yes	Yes	Good	M	33 24.0890	70 34.6590	12:00 gasoline
Truck	TH.32.22	1988 Toyota	HiLux	2.4	No	111,000 No	Poor	M	33 24.0890	70 34.6590	12:00 gasoline
Truck	PT.28.70	1996 Toyota	HiLux Supercab	2.4	Yes	44,000 Yes	Good	M	33 24.0890	70 34.6590	12:00 gasoline

Data Collected December 4,2001 in Santiago, Chile in Vitacura Area

Veh. Type	License No.	Model Year	Veh. Manuf.	Model	Size	Fuel Injec.	Catal yst	Mileage (km)	Air Cond.	Maint. Cond.	Trans.	Latitude (S)	Longitude (W)	Time	Fuel
PC	TL.66.37	2000	Chevrolet	Corsa GL	1.6	mpfi	Yes	24,000	No	Good	M	33 23.054	70 33.271	8:00	gasoline
PC	SS.53.11	1999	Chrysler	Caravan	4		Yes		Yes	Good	M	33 23.054	70 33.271	8:00	gasoline
PC	SJ.69.93	1999	Citroen	Xsara	1.8		Yes		Yes	Good	M	33 23.054	70 33.271	8:00	gasoline
PC	RV.33.37	1998	Daewoo	Lanos	1.5		Yes	110,000	No	Good	M	33 23.054	70 33.271	8:00	gasoline
PC	TC.83.41	2000	Daewoo	Lanos	1.5		Yes	36,000	Yes	Good	A	33 23.054	70 33.271	8:00	gasoline
PC	KV.62.73	1993	Daewoo	Racer	1.5		Yes	152,000	No	Medium	M	33 23.054	70 33.271	8:00	gasoline
PC	PE.93.86	1996	Daewoo	Racer Eti	1.5		Yes	84,000	No	Good	M	33 23.054	70 33.271	8:00	gasoline
PC	UJ.82.32	2001	Daewoo	BX	1.6		Yes	14,000	No	Good	M	33 23.054	70 33.271	8:00	gasoline
PC	UC.76.65	2001	Daewoo	Nubira	1.6		Yes	40,000	No	Good	M	33 23.054	70 33.271	8:00	gasoline
PC	GS.81.34	1987	Daihatsu	Max Cuore	0.8		No	119,000	No	Poor	M	33 23.054	70 33.271	8:00	gasoline
PC	GH.57.29	1988	Fiat	147 GL	1.3		No	105,000	No	Medium	M	33 23.054	70 33.271	8:00	gasoline
PC	PA.56.44	1996	Ford	Fiesta	1.3		Yes	72,000	No	Medium	M	33 23.054	70 33.271	8:00	gasoline
PC	RH.28.29	1998	Ford	Escort----sta. wagon	1.6		Yes	65,000	No	Good	M	33 23.054	70 33.271	8:00	gasoline
PC	DL.88.91	1988	Honda	Civic EX	1.6		No	72,000	No	Good	A	33 23.054	70 33.271	8:00	gasoline
PC	KF.21.27	1993	Honda	Accord	2.2		Yes	88,000	Yes	Good	A	33 23.054	70 33.271	8:00	gasoline
PC	TF.76.20	2000	Hyundai	Accent L	1.5		Yes	82,000	No	Good	M	33 23.054	70 33.271	8:00	gasoline
PC	SS.51.44	1999	Hyundai	Accent LS	1.5		Yes	53,000	No	Good	M	33 23.054	70 33.271	8:00	gasoline
PC	NP.72.14	1995	Hyundai	Elantra GLS	1.6		Yes		Yes	Good	A	33 23.054	70 33.271	8:00	gasoline
PC	SR.13.52	1999	Hyundai	Sonata	2		Yes	43,000	No	Medium	A	33 23.054	70 33.271	8:00	gasoline
PC	ST.56.41	1999	Hyundai	Sonata GLS	2		Yes	44,000	Yes	Good	A	33 23.054	70 33.271	8:00	gasoline
PC	PH.87.71	1996	KIA	GTX	1.6		Yes	122,000	No	Medium	M	33 23.054	70 33.271	8:00	gasoline
PC	UA.94.96	2001	KIA	Carinl Van	2		Yes	13,000	Yes	Medium	M	33 23.054	70 33.271	8:00	gasoline
PC	TS.57.76	2000	KIA	Carnival LS	2		Yes	118,000	Yes	Good	A	33 23.054	70 33.271	8:00	gasoline
PC	DS.81.05	1986	Lada	2105	1.2		No	205,000	No	Poor	M	33 23.054	70 33.271	8:00	gasoline
PC	KP.31.62	1993	Mazda	626	1.8		Yes	30,000	No	Good	M	33 23.054	70 33.271	8:00	gasoline
PC	UG.93.95	2001	Mitsubishi	Montero Sport Gls-4X4	2		Yes		Yes	Good	A	33 23.054	70 33.271	8:00	gasoline
PC	BX.77.28	1984	Nissan	SLX	1.6		No	247,000	No	Poor	M	33 23.054	70 33.271	8:00	gasoline
PC	NJ.67.21	1995	Opel	Astra	1.4		Yes	45,000	No	Good	A	33 23.054	70 33.271	8:00	gasoline
PC	LK.40.09	1994	Opel	Corsa I	1.4		Yes	116,000	No	Good	A	33 23.054	70 33.271	8:00	gasoline
PC	RA.98.15	1998	Opel	Vectra	1.6		Yes		Yes	Good	M	33 23.054	70 33.271	8:00	gasoline
PC	DR.92.03	1986	Peugeot	205 GT	1.4		No	97,000	No	Medium	M	33 23.054	70 33.271	8:00	gasoline
PC	NC.55.43	1995	Seat	IBIZA CLX	1.6		Yes	82,000	No	Good	M	33 23.054	70 33.271	8:00	gasoline
PC	KN.68.92	1993	Subaru	Legacy GL	1.8		Yes	92,000	Yes	Poor	M	33 23.054	70 33.271	8:00	gasoline
PC	KN.68.92	1993	Subaru	Legacy GL	1.8		Yes	92,000	Yes	Poor	M	33 23.054	70 33.271	8:00	gasoline

PC	KS.21.69	1993 Subaru	Legacy VZ	2	Yes	136,000	Yes	Good	M	33 23.054	70 33.271	8:00 gasoline
PC	RC.84.86	1998 Suzuki	Baleno GLX	1.6	Yes	63,000	No	Good	M	33 23.054	70 33.271	8:00 gasoline
PC	TP.34.17	2000 Suzuki	Baleno GLX	1.6	Yes	32,000	Yes	Good	A	33 23.054	70 33.271	8:00 gasoline
PC	DI.67.45	1987 Toyota	Tercel	1.5	No	193,000	No	Good	M	33 23.054	70 33.271	8:00 gasoline
PC	SA.17.05	1999 Toyota	Tercel Xli	1.5	Yes	37,000	Yes	Good	A	33 23.054	70 33.271	8:00 gasoline
PC	PB.16.69	1996 Toyota	Corolla Lei	1.6	Yes	65,000	No	Good	M	33 23.054	70 33.271	8:00 gasoline
PC	EK.93.42	1987 VW	Bug 1300	1.3	No	164,000	No	Medium	M	33 23.054	70 33.271	8:00 gasoline
PC	SS.47.95	1999 VW	Vento GL	1.8	Yes	20,000	Yes	Good	M	33 23.054	70 33.271	8:00 gasoline
PC	PX.40.77	1996 VW	Vento GLX	2	Yes	75,000	Yes	Good	A	33 23.054	70 33.271	8:00 gasoline
Truck	RB.28.52	1998 Chevrolet	LUV----reg cab	2.3	Yes	112,000	No	Good	M	33 23.054	70 33.271	8:00 gasoline
Truck	LF.81.49	1994 Chevrolet	1500	2.5	Yes	109,000	Yes	Good	M	33 23.054	70 33.271	8:00 gasoline
Truck	KK.56.36	1993 Fiat	Fiorina	1.5	Yes	213,000	No	Medium	M	33 23.054	70 33.271	8:00 gasoline
Truck	RX.89.59	1998 Mitsubishi	L200----super cab	2.4	Yes	103,000	No	Good	M	33 23.054	70 33.271	8:00 gasoline
Truck	RR.92.22	1998 Nissan		1.6	Yes	42,000	No	Medium	M	33 23.054	70 33.271	8:00 gasoline
Truck	LX.49.39	1994 Nissan	D21 Egi	2.4	Yes	140,000	No	Medium	M	33 23.054	70 33.271	8:00 gasoline
Truck	TT.79.33	2000 Nissan	D21----super cab	2.4	Yes	47,000	No	Good	M	33 23.054	70 33.271	8:00 gasoline
PC	NS.85.03	1995 Chevrolet	Cavalier	2	Yes	63,000	No	Good	A	33 23.054	70 33.271	9:00 gasoline
PC	TE.45.91	2000 Chrysler	Sport Van	2.3	Yes		Yes	Good	M	33 23.054	70 33.271	9:00 gasoline
PC	KP.22.34	1993 Citroen	BX16 TZI	1.6	Yes	120,000	No	Medium	M	33 23.054	70 33.271	9:00 gasoline
PC	UH.38.58	2001 Citroen	Xsara	1.8	Yes		Yes	Good	M	33 23.054	70 33.271	9:00 gasoline
PC	TL.89.25	2000 Fiat	Piamonte	1.3	Yes		Yes	Good	M	33 23.054	70 33.271	9:00 gasoline
PC	BN.39.27	1985 Honda	Small	1.4	No	352,000	No	Poor	M	33 23.054	70 33.271	9:00 gasoline
PC	UD.89.21	2001 Hyundai	Accent	1.5	Yes	19,000	No	Good	M	33 23.054	70 33.271	9:00 gasoline
PC	TA.89.64	2000 Hyundai	Santamo	2	Yes	47,000	Yes	Good	M	33 23.054	70 33.271	9:00 gasoline
PC	PY.91.37	1996 Hyundai	Hilux----Large Van	2.5	Yes	43,000	No	Good	M	33 23.054	70 33.271	9:00 gasoline
PC	TF.55.29	2000 KIA	Pride	1.4	Yes	43,000	No	Good	M	33 23.054	70 33.271	9:00 gasoline
PC	SJ.62.87	1999 Mazda	626	1.8	Yes		Yes	Good	A	33 23.054	70 33.271	9:00 gasoline
PC	PAT.678	2000 Nissan	Pathfinder	3.3	Yes		Yes	Good	M	33 23.054	70 33.271	9:00 gasoline
PC	UT.72.70	2001 Peugeot		1.3	Yes		No	Good	M	33 23.054	70 33.271	9:00 gasoline
PC	UV.87.83	2001 Peugeot	206	1.4	Yes		Yes	Good	M	33 23.054	70 33.271	9:00 gasoline
PC	NT.85.78	1995 Peugeot	306 XS	1.5	Yes	58,000	No	Medium	M	33 23.054	70 33.271	9:00 gasoline
PC	TF.55.68	2000 Subaru	Imprezo	1.6	Yes		Yes	Good	A	33 23.054	70 33.271	9:00 gasoline
PC	TH.26.63	2000 Subaru	Imprezo	1.6	Yes		Yes	Good	A	33 23.054	70 33.271	9:00 gasoline
PC	TS.78.08	2000 Subaru		1.6	Yes		Yes	Good	A	33 23.054	70 33.271	9:00 gasoline
PC	TA.85.81	2000 Subaru	Legacy	1.8	Yes	38,000	No	Good	M	33 23.054	70 33.271	9:00 gasoline
PC	NL.44.04	1995 Subaru	Legacy	1.8	Yes	79,000	Yes	Good	A	33 23.054	70 33.271	9:00 gasoline
PC	RE.94.91	1998 Subaru	Legacy LX	2	Yes	109,000	No	Good	M	33 23.054	70 33.271	9:00 gasoline

PC	DJ.68.53	1986 Suzuki	Swift GL	1.3	Yes	119,000	No	Medium	A	33 23.054	70 33.271	9:00 gasoline
Taxi	RH.18.93	1997 Daewoo	Pointer	1.6	Yes	140,000	No	Good	M	33 23.054	70 33.271	9:00 gasoline
Taxi	NP.65.43	1995 Daewoo	Pointer	1.6	Yes	285,000	No	Good	M	33 23.054	70 33.271	9:00 gasoline
Taxi	RX.81.46	1998 Daewoo	Pointer	1.6	Yes	230,000	No	Good	M	33 23.054	70 33.271	9:00 gasoline
Taxi	RN.61.47	1997 Daewoo	Pontiac	1.6	Yes	204,000	No	Good	M	33 23.054	70 33.271	9:00 gasoline
Taxi	NF.60.23	1995 Daewoo	Pontiac	1.6	Yes	138,000	No	Good	M	33 23.054	70 33.271	9:00 gasoline
Taxi	PP.43.36	1996 Nissan	V16	1.6	Yes	239,000	No	Good	M	33 23.054	70 33.271	9:00 gasoline
Truck	TS.36.79	2000 Ford	Ranger----reg cab	2.3	Yes	42,000	No	Good	M	33 23.054	70 33.271	9:00 gasoline
PC	NZ.48.10	1995 Chevrolet	Blazer	4.3	Yes	86,000	Yes	Good	M	33 23.305	70 34.029	10:00 gasoline
PC	TV.63.25	2000 Chevrolet	Blazer	4.3	Yes		Yes	Good	M	33 23.305	70 34.029	10:00 gasoline
PC	PK.18.65	1996 Chrysler	Neon	1.5	Yes	139,000	No	Good	M	33 23.305	70 34.029	10:00 gasoline
PC	KT.94.79	1993 Citroen	AX	1.1	Yes	113,000	No	Medium	M	33 23.305	70 34.029	10:00 gasoline
PC	KN.29.37	1993 Daewoo	Espero	2	Yes	167,000	No	Good	M	33 23.305	70 34.029	10:00 gasoline
PC	BC.96.95	1994 Ford	Escort LX	1.6	Yes	97,000	No	Good	M	33 23.305	70 34.029	10:00 gasoline
PC	KZ.32.28	1993 Honda	Accord	2.2	Yes	143,000	Yes	Good	A	33 23.305	70 34.029	10:00 gasoline
PC	RF.65.46	1998 Hyundai	Accent	1.5	Yes	62,000	Yes	Good	M	33 23.305	70 34.029	10:00 gasoline
PC	TL.62.58	2000 Hyundai	Santamo	2	Yes	63,000	Yes	Good	M	33 23.305	70 34.029	10:00 gasoline
PC	SP.39.92	1999 Hyundai	Galopper-turbo wagon	2.5	No	66,000	Yes	Good	M	33 23.305	70 34.029	10:00 diesel
PC	RZ.89.55	1998 Hyundai	Galopper-turbo wagon	2.5	No	103,000	No	Good	M	33 23.305	70 34.029	10:00 diesel
PC	UD.68.20	2001 Hyundai	Hi Lux	2.5	Yes	28,000	Yes	Good	A	33 23.305	70 34.029	10:00 gasoline
PC	LS.60.10	1994 KIA	Sephia	1.6	Yes	116,000	No	Good	M	33 23.305	70 34.029	10:00 gasoline
PC	UA.94.96	2001 KIA	Carnival LS	2	Yes	13,000	Yes	Good	A	33 23.305	70 34.029	10:00 gasoline
PC	TU.13.46	2000 KIA	Van	2	Yes	20,000	Yes	Good	A	33 23.305	70 34.029	10:00 gasoline
PC	DG.77.48	1988 Mazda		1.4	No	85,000	No	Good	A	33 23.305	70 34.029	10:00 gasoline
PC	SS.51.57	1999 Mitsubishi	Lancer	1.6	Yes		No	Good	M	33 23.305	70 34.029	10:00 gasoline
PC	UL.94.01	2001 Mitsubishi	Galant	2	Yes		Yes	Good	A	33 23.305	70 34.029	10:00 gasoline
PC	UN.52.47	2001 Mitsubishi	Galant	2	Yes		Yes	Good	A	33 23.305	70 34.029	10:00 gasoline
PC	NK.41.24	1995 Nissan	Supersaloon	1.6	Yes	83,000	Yes	Good	A	33 23.305	70 34.029	10:00 gasoline
PC	TN.31.75	2000 Nissan	Primeria	2	Yes		Yes	Good	A	33 23.305	70 34.029	10:00 gasoline
PC	KF.18.25	1993 Peugeot	505	2.2	Yes	166,000	No	Good	A	33 23.305	70 34.029	10:00 gasoline
PC	NU.37.21	1995 Subaru	Legacy	1.8	Yes	99,000	Yes	Good	M	33 23.305	70 34.029	10:00 gasoline
PC	TZ.23.06	2000 Suzuki	Baleno GLX	1.6	Yes	29,000	No	Good	M	33 23.305	70 34.029	10:00 gasoline
PC	SG.74.63	1999 Toyota	Tercel	1.5	Yes	25,000	No	Good	M	33 23.305	70 34.029	10:00 gasoline
PC	SC.58.47	1999 Toyota	Tercel	1.5	Yes	23,000	Yes	Good	M	33 23.305	70 34.029	10:00 gasoline
PC	TV.77.64	2000 VW	Golf	1.8	Yes		No	Good	A	33 23.305	70 34.029	10:00 gasoline
PC	PU.87.36	1996 VW	Golf GF	1.8	Yes		No	Good	M	33 23.305	70 34.029	10:00 gasoline
PC	KR.67.34	1993 VW	Golf GL	1.8	Yes	122,000	Yes	Good	M	33 23.305	70 34.029	10:00 gasoline

Truck	SV.39.05	1999 Chevrolet	LUV	2.3	Yes	57,000	Yes	Good	M	33	23.305	70	34.029	10:00	gasoline	
Truck	KY.67.26	1993 Chevrolet	LUV----super cab	2.3	Yes	128,000	Yes	Medium	M	33	23.305	70	34.029	10:00	gasoline	
PC	UV.68.16	2001 Chevrolet	Corsa	1.6	mpfi	Yes	7,000	No	Good	M	33	23.305	70	34.029	11:00	gasoline
PC	NY.67.34	1995 Hyundai	Electra	1.6	Yes	130,000	Yes	Good	A	33	23.305	70	34.029	11:00	gasoline	
PC	TG.67.50	2000 Hyundai		2	Yes	47,000	Yes	Good	M	33	23.305	70	34.029	11:00	gasoline	
PC	UD.63.29	2001 Hyundai	Galloper II	2.5	No	28,000	Yes	Good	M	33	23.305	70	34.029	11:00	diesel	
PC	TX.97.53	2000 Hyundai	Hi Lux	2.5	Yes	32,000	Yes	Good	M	33	23.305	70	34.029	11:00	gasoline	
PC	RY.9450	1998 Subaru	Legacy	1.8	Yes	104,000	Yes	Good	A	33	23.305	70	34.029	11:00	gasoline	
PC	TU.14.43	2000 Toyota	Yaris	1.5	Yes		Yes	Good	M	33	23.305	70	34.029	11:00	gasoline	
PC	PY.50.18	1996 VW	Jetta	1.8	Yes	92,000	No	Good	M	33	23.305	70	34.029	11:00	gasoline	
PC	RX.96.37	1998	Terios----SUV	1.8	Yes	90,000	No	Good	M	33	23.305	70	34.029	11:00	gasoline	
Truck	LG.85.75	1994 Chevrolet	LUV----super cab	2.3	Yes	74,000	Yes	Good	M	33	23.305	70	34.029	11:00	gasoline	
PC	KL.52.46	1993 Chevrolet	Trooper----SUV	3.2	Yes	125,000	No	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	TV.94.08	2000 Chrysler	Caravan	4	Yes		Yes	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	LK.84.15	1994 Dodge	Caravan	2.5	Yes		No	Good	A	33	23.305	70	34.029	12:00	gasoline	
PC	NH.22.23	1995 Dodge	Caravan SE	2.5	Yes	62,000	Yes	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	TZ.65.51	2000 Fiat	Palio EDX	1.3	Yes	4,000	No	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	RV.38.88	1993 Fiat	Marca EX	1.6	Yes		Yes	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	KU.59.23	1993 Honda	Civic LSI	1.6	Yes	171,000	No	Good	A	33	23.305	70	34.029	12:00	gasoline	
PC	RE.13.96	1998 Hyundai	Accent	1.5	Yes	70,000	No	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	NU.40.68	1995 Hyundai	Accent	1.5	Yes	122,000	No	Good	A	33	23.305	70	34.029	12:00	gasoline	
PC	UA.86.04	2001 Hyundai	Accent	1.5	Yes	3,000	Yes	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	PC.79.98	1996 Hyundai	Elantra	1.6	Yes	91,000	Yes	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	SL.80.65	1999 Hyundai	Electra	1.6	Yes		No	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	LF.57.64	1994 Hyundai	Coupe LS	1.8	Yes	34,000	No	Good	A	33	23.305	70	34.029	12:00	gasoline	
PC	RC.73.16	1998 Hyundai	Sonata	2	Yes	98,000	Yes	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	PT.47.37	1996 Mazda	323	1.6	Yes	69,000	Yes	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	SJ.59.88	1999 Mazda	Artis	1.6	Yes		No	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	UF.19.74	2001 Mitsubishi	SUV-V6	2.3	Yes		Yes	Good	A	33	23.305	70	34.029	12:00	gasoline	
PC	TZ.77.46	2000 Nissan	Pathfinder XXI SE	3.3	Yes		Yes	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	PT.73.77	1996 Peugeot	306 XR	1.5	Yes	66,000	No	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	UV.36.13	2001 Peugeot	406	2	Yes		Yes	Good	A	33	23.305	70	34.029	12:00	gasoline	
PC	TX.49.47	2000 Renault	Clio	1.6	Yes		Yes	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	UK.23.05	2001 Renault	Scenic	2	Yes		Yes	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	NF.66.80	1995 Subaru		1	Yes		No	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	SS.31.04	1999 Subaru	Legacy	1.8	Yes	62,000	No	Good	M	33	23.305	70	34.029	12:00	gasoline	
PC	SV.85.24	1999 Subaru	Legacy GL	1.8	Yes	79,000	Yes	Good	A	33	23.305	70	34.029	12:00	gasoline	

PC	KT.95.62	1993 Suzuki	Icon JLX	1.8	Yes		Yes	Good	M	33 23.305	70 34.029	12:00 gasoline
PC	NN.31.51	1995 Toyota	Tercel	1.5	Yes	135,000	No	Good	M	33 23.305	70 34.029	12:00 gasoline
Truck	SH.34.45	1999 Chevrolet	LUV Supercab	2.3	Yes		No	Good	M	33 23.305	70 34.029	12:00 gasoline
Truck	RA.75.84	1998 Ford	Ranger XLT	2.3	Yes	63,000	No	Good	M	33 23.305	70 34.029	12:00 gasoline
Truck	NH.64.87	1995 Nissan	Egi	2.4	Yes	175,000	No	Good	M	33 23.305	70 34.029	12:00 gasoline
Truck	KP.96.00	1993 Toyota	HiLux Efi	2.4	Yes		Yes	Good	M	33 23.305	70 34.029	12:00 gasoline

Data Collected December 5, 2001 in Santiago, Chile in Santiago Area

Veh. Type	License No.	Model Year	Veh. Manuf.	Model	Size	Fuel Injec.	Catal yst	Mileage (km)	Air Cond.	Maint. Cond.	Trans.	Latitude (S)	Longitude (W)	Time	Fuel
PC	UF.81.82	2001	Chevrolet	Corsa	1.6	Gi	Yes	14000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	ST.56.22	1999	Daewoo	Tico SL	1.0		Yes	63000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	UD.44.42	2001	Daewoo	Lanos	1.5		Yes	13000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	TA.82.78	2000	Daewoo	Lanos	1.5		Yes	26000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	KV.87.04	1991	Daewoo	Racer	1.5		Yes	92000	No	Good	A	33 25.896	70 39.439	15:00	gasoline
PC	LS.80.91	1992	Daewoo	Racer ST	1.5	i	Yes	100000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	LN.54.19	1992	Daewoo		1.6		Yes	102000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	LS.62.63	1992	Daihatsu	Charade	1.5		Yes	92000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	GL.16.45	1982	Fiat	132	1.5		No		No	Poor	M	33 25.896	70 39.439	15:00	gasoline
PC	LP.11.65	1992	Fiat	Fiorino	1.5		Yes	135000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	NL.16.07	1994	Fiat	Piemonte	1.6		Yes	131000	No	Medium	M	33 25.896	70 39.439	15:00	gasoline
PC	TA.34.38	2000	Hyundai	Accent	1.5		Yes	55000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	SY.40.59	1998	Hyundai	Accent	1.5		Yes	32000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	SH.61.56	1999	Hyundai	Accent LS	1.5		Yes	58000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	RS.52.89	1998	Hyundai	Elantra	1.6		Yes	58000	Yes	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	RA.42.88	1998	KIA	Pride	1.4		Yes	85000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	SU.98.75	1999	Mazda	Artis	1.6		Yes		No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	PV.64.60	1996	Mazda	Artis	1.6		Yes	65000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	BD.92.97	1990	Nissan	NX coupe	1.6		No		No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	LA.38.50	1992	Nissan	Sentra	1.6		Yes	180000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	RE.15.18	1998	Nissan	Sentra	1.6		Yes	34000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	RN.20.14	1998	Opel	Corsa	1.4		Yes	90000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	KC.22.71	1991	Opel	Vectra	1.6		No	124000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	LX.70.46	1992	Opel	Vectra	1.6		Yes	114000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	LB.99.05	1992	Opel	Vectra	1.8		Yes	89000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	UV.35.32	2001	Peugeot	Sotta 106	1.4		Yes		No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	TF.79.69	2000	Peugeot	306	1.5		Yes		Yes	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	HK.85.11	1988	Peugeot		1.6		No	274000	No	Poor	M	33 25.896	70 39.439	15:00	gasoline
PC	SK.19.26	1999	SEAT	Ibiza SX	1.5	i	Yes	45000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	PS.10.96	1996	Subaru	Impreza	1.6		Yes	71000	Yes	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	UB.92.26	2001	Suzuki	Grand Vitara	1.6		Yes		No	Good	M	33 25.896	70 39.439	15:00	gasoline
PC	NV.55.10	1994	Toyota	Tercel	1.5		Yes	132000	No	Good	M	33 25.896	70 39.439	15:00	gasoline
Taxi	PP.94.37	1996	Nissan	Sentra	1.6		Yes		No	Good	M	33 25.896	70 39.439	15:00	gasoline
Truck	KP.80.82	1991	Chevrolet	LUV	2.3		Yes	93000	No	Good	M	33 25.896	70 39.439	15:00	gasoline

Truck	DA.24.42	1985 Chevrolet	LUV Supercab	2.3	No	236000	No	Good	M	33 25.896	70 39.439	15:00 gasoline	
Truck	LV.29.50	1992 Chevrolet	LUV Supercab	2.3	mpfi	Yes	133000	Yes	Good	M	33 25.896	70 39.439	15:00 gasoline
Truck	UZ.59.79	2001 Chevrolet	LUV 4x4	3.2	Yes	1600	Yes	Good	M	33 25.896	70 39.439	15:00 gasoline	
Truck	UK.86.93	2001 Chevrolet	LUV Supercab 4x4	3.2	Yes	6000	Yes	Good	M	33 25.896	70 39.439	15:00 gasoline	
Truck	SA.99.99	1999 Dodge		2.5	Yes		No	Good	M	33 25.896	70 39.439	15:00 gasoline	
Truck	KU.56.74	1991 Toyota	Helix Supercab	2.4	Yes	147000	No	Good	M	33 25.896	70 39.439	15:00 gasoline	
Truck	PY.89.43	1996 Toyota	Helix Supercab	2.4	Yes	121000	No	Good	M	33 25.896	70 39.439	15:00 gasoline	
Truck	TD.27.32	2000 Toyota	HiLux	2.4	Yes	31000	No	Good	M	33 25.896	70 39.439	15:00 gasoline	
PC	TP.57.93	2000 Chevrolet	Corsa	1.6	mpfi	Yes	21000	No	Good	M	33 25.896	70 39.439	16:00 gasoline
PC	TY.95.38	2000 Chevrolet	Corsa	1.6	mpfi	Yes	27000	No	Good	M	33 25.896	70 39.439	16:00 gasoline
PC	RY.85.26	1998 Chrysler	Neon	2.0	i	Yes	32000	Yes	Good	A	33 25.896	70 39.439	16:00 gasoline
PC	FN.29.46	1986 Citroen	9X	1.1	No	118000	No	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	NV.20.85	1994 Citroen	Xantia	2.0	i	Yes		No	Good	A	33 25.896	70 39.439	16:00 gasoline
PC	TC.89.43	2000 Daewoo	Racer	1.5	Yes	91000	No	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	NU.12.99	1994 Dodge	Grand Caravan	3.3	Yes		Yes	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	SD.27.26	1999 Fiat	Punto	1.2	Yes	84000	No	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	TX.75.27	2000 Fiat	Uno	1.3	i	Yes	14000	No	Good	M	33 25.896	70 39.439	16:00 gasoline
PC	BX.72.29	1988 Fiat	Duna 70	1.6	No	100000	No	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	RL.71.21	1997 Ford	Escort	1.9	Yes	65000	No	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	RR.42.25	1998 Hyundai	Accent	1.5	Yes	55000	No	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	TJ.34.54	2000 KIA	Clarus GLS	1.8	Yes	30000	No	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	UA.92.18	2001 KIA	V10	1.8	Yes		No	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	TP.22.47	2000 Mazda	323	1.6	Yes		Yes	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	RV.38.96	1998 Mazda	Artis	1.6	Yes		No	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	TJ.56.93	2000 Nissan	Saloon	1.6	Yes	11000	No	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	NU.65.51	1994 Nissan	Super Saloon	1.6	Yes	102000	Yes	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	DT.27.95	1984 Peugeot	205 GT	1.4	No	150000	No	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	SC.56.27	1999 Peugeot	306	1.5	Yes		No	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	TL.94.05	2000 Peugeot	306	1.6	Yes		Yes	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	LY.57.94	1992 Peugeot	306 XN	1.6	Yes	110000	No	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	TA.42.58	2000 Suzuki	Balino GLX	1.6	Yes	45000	Yes	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	RT.52.45	1998 Suzuki	Super Carrier	1.8	Yes	112000	No	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	SD.10.36	1999 Toyota	Tercel	1.5	Yes	68000	Yes	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	SC.54.14	1999 Toyota	Tercel	1.5	Yes		Yes	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	PH.51.25	1996 Toyota	Tercel	1.5	Yes	56000	Yes	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	LS.54.20	1992 Volvo	740 GLE	3.0	Yes	190000	No	Poor	A	33 25.896	70 39.439	16:00 diesel	
PC	ST.61.95	1999 VW	Gol	1.6	Yes	77000	Yes	Good	M	33 25.896	70 39.439	16:00 gasoline	

PC	PY.66.10	1996 VW	Vento	1.8	Yes	111000	Yes	Good	M	33 25.896	70 39.439	16:00 gasoline	
Taxi	PH.91.30	1996 Daewoo	Pointer	1.6	Yes	167000	No	Good	M	33 25.896	70 39.439	16:00 gasoline	
Taxi	LH.16.02	1992 Nissan	Saloon	1.6	Yes	101000	No	Good	M	33 25.896	70 39.439	16:00 gasoline	
Truck	UU.47.44	2001 Chevrolet	LUV	2.3	Yes	2000	Yes	Good	M	33 25.896	70 39.439	16:00 gasoline	
Truck	NE.73.60	1994 Chevrolet	LUV	2.3	mpfi	Yes	122000	No	Good	M	33 25.896	70 39.439	16:00 gasoline
Truck	RE.77.33	1998 Chevrolet	LUV DL	2.3	Yes	195000	No	Good	M	33 25.896	70 39.439	16:00 gasoline	
Truck	UJ.82.82	2001 Chevrolet	LUV Supercab 4x4	3.2	Yes	11000	Yes	Good	M	33 25.896	70 39.439	16:00 gasoline	
Truck	SY.83.89	1999 Ford	Ranger Supercab	2.3	Yes	53000	No	Good	M	33 25.896	70 39.439	16:00 gasoline	
Truck	TZ.53.33	2000 Nissan	Kingcab	2.4	mpfi	Yes	44000	No	Good	M	33 25.896	70 39.439	16:00 gasoline
Truck	TE.19.22	2000 Nissan	Supercab	2.4	Yes	70000	Yes	Good	M	33 25.896	70 39.439	16:00 gasoline	
Truck	RR.12.79	1998 Suzuki	Nomad	1.8	Yes	70000	Yes	Good	M	33 25.896	70 39.439	16:00 gasoline	
PC	SF.94.81	1999 BMW	318	2.3	i	Yes	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	US.99.29	2001 Chevrolet	Astra GL	1.8	mpfi	Yes	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	SY.,60.66	1999 Chevrolet	Vectra	1.8	Yes	No	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	HT.86.51	1985 Chevrolet	Opala	3.0	No	No	No	Poor	M	33 27.497	70 39.706	18:00 gasoline	
PC	SJ.63.06	1999 Citroen	Saxo	1.4	Yes	7000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	PS.31.43	1996 Daewoo	Heaven GL	1.5	Yes	88000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	TJ.56.00	2000 Daewoo	Lanos	1.5	Yes	26000	Yes	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	KP.59.04	1991 Daewoo	Racer GL	1.5	i	Yes	102000	No	Good	M	33 27.497	70 39.706	18:00 gasoline
PC	TS.72.30	2000 Daewoo	Nubira	1.6	Yes	22000	Yes	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	AU.83.23	1981 Daihatsu	Cuore	1.0	No	No	No	Poor	M	33 27.497	70 39.706	18:00 gasoline	
PC	EK.87.18	1985 Daihatsu	Charade	1.3	No	No	No	Poor	M	33 27.497	70 39.706	18:00 gasoline	
PC	SJ.74.14	1999 Daihatsu	Feroza SX	1.6	Yes	135000	Yes	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	RS.77.02	1998 Daihatsu	Terios 4x4	1.8	Yes	66000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	SL.97.97	1999 Delta		1.6	Yes	40000	Yes	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	TS.71.75	2000 Fiat	Palio EDX	1.3	mpfi	Yes	17000	No	Good	M	33 27.497	70 39.706	18:00 gasoline
PC	RF.13.37	1998 Fiat	Punto S	1.4	Yes	58000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	KB.32.30	1991 Honda	Civic EX	1.6	Yes	69000	Yes	Good	A	33 27.497	70 39.706	18:00 gasoline	
PC	RT.58.63	1998 Honda	Civic LX	1.6	Yes	94000	Yes	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	SR.78.98	1999 Hyundai	Accent	1.5	Yes	65000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	RH.21.87	1998 Hyundai	Accent GLS	1.5	Yes	60000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	PC.13.16	1996 Hyundai	Elantra	1.8	Yes	73000	Yes	Good	A	33 27.497	70 39.706	18:00 gasoline	
PC	DL.54.75	1988 Jeep	Cherokee 4x4	3.0	Yes	208000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	SE.86.89	1999 KIA	Avella	1.6	Yes	82000	Yes	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	DS.17.79	1984 Lada	2104	1.5	No	No	No	Poor	M	33 27.497	70 39.706	18:00 gasoline	
PC	DA.67.22	1984 Mazda	323	1.6	No	245000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	TP.98.62	1996 Mazda	Artis	1.6	Yes	158000	Yes	Good	M	33 27.497	70 39.706	18:00 gasoline	

PC	HR.42.75	1988 Mercedes	380 SE	2.3	No	160000	Yes	Good	A	33 27.497	70 39.706	18:00 gasoline	
PC	LG.66.74	1994 Nissan	EX	1.6	Yes	90000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	TJ.46.07	2000 Nissan	Saloon EX	1.6	Yes	41000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	LZ.28.29	1992 Nissan	Saloon EX	1.6	Yes	124000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	FX.86.74	1986 Nissan	Sentra	1.6	No	137000	Yes	Good	A	33 27.497	70 39.706	18:00 gasoline	
PC	TN.23.00	2000 Nissan	Sentra II XE	1.6	Yes	46000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	SX.50.28	1999 Nissan	Sentra Plus	1.6	Yes	56000	No	Good	A	33 27.497	70 39.706	18:00 gasoline	
PC	LN.63.17	1994 Opel	Astra	1.4	Yes	160000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	RY.63.61	1998 Opel	Astra	1.4	Yes	51000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	LP.19.25	1992 Opel	Astra GL	1.4	Yes	152000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	PZ.94.82	1996 Peugeot	306 SL	1.6	Yes	72000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	UJ.53.45	2001 Peugeot	Partner	2.0	Yes		No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	RN.45.75	1998 Renault	Cleo	1.4	Yes	64000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	PE.48.19	1996 Renault	19	1.6	Yes	57000	Yes	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	SE.39.96	1999 Rover	416 S	1.6	i	Yes	43000	Yes	Good	M	33 27.497	70 39.706	18:00 gasoline
PC	HH.22.63	1980 SEAT		1.6	No		No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	KB.19.82	1991 Subaru	Loyale DLX	1.8	No	97000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	PT.63.64	1996 Suzuki	Samurai	1.3	Yes	241000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	TV.33.89	2000 Suzuki	Balino	1.6	Yes	24000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	SC.57.15	1999 Toyota	Tercel	1.5	Yes	42000	No	Good	A	33 27.497	70 39.706	18:00 gasoline	
PC	RX.61.68	1998 Toyota	Tercel XL	1.5	i	Yes	90000	No	Good	M	33 27.497	70 39.706	18:00 gasoline
PC	TD.14.20	2000 Toyota	Yaris	1.5	Yes		No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	SL.46.18	1999 Toyota		1.5	Yes	48000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	RV.26.33	1998 Toyota	Corona	2.0	Yes	62000	Yes	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	TR.51.15	2000 VW	Gol	1.6	Yes		No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	SL.96.67	1999 VW	Gol	1.6	mpfi	Yes	45000	No	Good	M	33 27.497	70 39.706	18:00 gasoline
PC	SC.55.37	1999 VW	Gol	1.6	mpfi	Yes	34000	No	Good	M	33 27.497	70 39.706	18:00 gasoline
PC	SE.85.41	1999 VW	Gol	1.6	mpfi	Yes	51000	No	Good	M	33 27.497	70 39.706	18:00 gasoline
PC	KB.69.35	1991 VW	Santana	1.6	Yes	168000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	LZ.65.20	1994 VW	Golf	1.8	Yes	88000	Yes	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	RC.87.62	1998 VW	Golf	1.8	Yes	85000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	SC.55.90	1999 VW	Vento	1.8	Yes	48000	No	Good	M	33 27.497	70 39.706	18:00 gasoline	
PC	LJ.31.71	1994 VW	Vento GL	1.8	Yes	124000	Yes	Good	A	33 27.497	70 39.706	18:00 gasoline	
Truck	NE.62.20	1994 Chevrolet	LUV Supercab	2.3	mpfi	Yes	151000	No	Good	M	33 27.497	70 39.706	18:00 gasoline
PC	HB.73.49	1988 Chevrolet	Limited	2.5	No	170000	Yes	Poor	M	33 27.497	70 39.706	19:00 gasoline	
PC	RL.24.70	1998 Daewoo	Heaven	1.5	Yes	76000	No	Good	M	33 27.497	70 39.706	19:00 gasoline	
PC	LL.88.30	1992 Daewoo	Racer ST	1.5	i	Yes	89000	No	Good	M	33 27.497	70 39.706	19:00 gasoline

PC	NA.11.43	1994 Daewoo	Espero 2000	2.0	i	Yes	204000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	RD.73.43	1998 Daihatsu	Feroza	1.6	i	Yes	77000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	LF.24.16	1992 Fiat	Uno	1.1	i	Yes	131000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	HK.34.72	1988 Fiat	147 GL	1.3		No		No	Poor	M	33 27.497	70 39.706	19:00 gasoline
PC	PV.69.38	1996 Fiat	Punto S	1.4		Yes	30000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	NJ.57.86	1994 Ford	Fiesta	1.3		Yes		No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	LR.69.86	1992 Ford	Bronco XLT 4x4	4.3		Yes	192000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	RU.52.55	1998 Hyundai	Accent	1.5		Yes	76000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	KK.62.61	1991 Hyundai	Elantra ELS	1.6		Yes	153000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	PY.72.96	1996 Hyundai	Sonata GLS	2.0		Yes	54000	Yes	Good	A	33 27.497	70 39.706	19:00 gasoline
PC	TU.55.19	2000 Hyundai	Galloper	2.5		Yes	12000	Yes	Good	M	33 27.497	70 39.706	19:00 diesel
PC	PC.82.13	1996 KIA	Pride	1.4		Yes	178000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	KB.71.62	1991 Lada	2105	1.3		No		No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	TP.32.93	2000 Mazda	323 F	1.6		Yes		Yes	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	SL.60.96	1999 Mazda	Artis	1.6		Yes		No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	KZ.39.11	1991 Nissan	Saloon	1.6		Yes	127000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	RR.14.30	1998 Nissan	Sentra II	1.6		Yes	72000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	HR.48.24	1988 Nissan		1.8		No		Yes	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	LY.15.76	1992 Opel	Astra	1.4		Yes	73000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	RP.32.15	1998 Opel	Corsa	1.4		Yes	49000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	TU.58.32	2000 Peugeot	106	1.4		Yes		No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	US.62.18	2001 Peugeot	306	1.6		Yes		Yes	Good	A	33 27.497	70 39.706	19:00 gasoline
PC	KH.60.31	1991 Subaru	Legacy GT 4x4	2.0		Yes	24000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	BK.50.06	1982 Suzuki	Van	1.3		No		No	Poor	M	33 27.497	70 39.706	19:00 gasoline
PC	TC.57.84	2000 Suzuki	Grand Vitara	1.6		Yes		No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	NN.85.76	1994 Toyota	Tercel GL	1.5	i	Yes	97000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
PC	EA.34.05	1983 Toyota	Corona	1.6		No		No	Poor	M	33 27.497	70 39.706	19:00 gasoline
PC	KU.26.11	1991 Volvo	960	3.0		Yes	56000	Yes	Good	A	33 27.497	70 39.706	19:00 gasoline
PC	LZ.66.00	1992 VW	Golf GL	1.8		Yes	99000	Yes	Good	M	33 27.497	70 39.706	19:00 gasoline
Truck	KG.81.02	1991 Chevrolet	LUV	2.3		No	141000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
Truck	NS.23.48	1994 Chevrolet	LUV	2.3	mpfi	Yes	143000	Yes	Good	M	33 27.497	70 39.706	19:00 gasoline
Truck	RH.11.42	1998 Chevrolet	LUV	2.3		Yes	70000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
Truck	KR.94.17	1991 Chevrolet	LUV Supercab	2.3		Yes	121000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
Truck	PX.92.64	1996 Fiat	Fiorino	1.5		Yes	101000	No	Good	M	33 27.497	70 39.706	19:00 gasoline
Truck	NV.54.12	1994 Nissan	D21 Supercab	2.4	i	Yes	79000	Yes	Good	M	33 27.497	70 39.706	19:00 gasoline
Truck	TR.52.24	2000 Nissan		2.4	mpfi	Yes	112000	Yes	Good	M	33 27.497	70 39.706	19:00 gasoline
Truck	RX.64.87	1998 Toyota	HiLux Supercab	2.4		Yes	70000	Yes	Good	M	33 27.497	70 39.706	19:00 gasoline

Data Collected December 6 ,2001 in Santiago, Chile in Santiago Area

Veh. Type	License No.	Model Year	Veh. Manuf.	Model	Size	Fuel Injec.	Catal yst	Mileage (km)	Air Cond.	Maint. Cond.	Trans.	Latitude (S)	Longitude (W)	Time	Fuel
PC	UJ.98.69	1990	Alfa Romeo		2		yes	134,000	no	medium	M	33 27.425	70 39.835	11:00	gasoline
PC	UT.36.50	2001	Chevrolet	Corsa	1.6	mpfi	yes	15,000	no	good	M	33 27.425	70 39.835	11:00	gasoline
PC	TG.70.13	2000	Chevrolet	Corsa	1.6	mpfi	yes	43,000	no	good	M	33 27.425	70 39.835	11:00	gasoline
PC	TE.50.37	2000	Chevrolet	Corsa EX	1.6	mpfi	yes	35,000	no	good	M	33 27.425	70 39.835	11:00	gasoline
PC	BR.91.83	1982	Chevrolet	Malibu	3.5		no		no	medium	M	33 27.425	70 39.835	11:00	gasoline
PC	SY.81.72	1999	Daewoo	Lanos	1.5		yes	59,000	no	medium	M	33 27.425	70 39.835	11:00	gasoline
PC	HA.73.41	1988	Daihatsu	408 SJ	1.6		no	171,000	no	poor	M	33 27.425	70 39.835	11:00	gasoline
PC	EK.69.86	1985	Datsun	ISOY	2.3		no	137,000	no	poor	M	33 27.425	70 39.835	11:00	gasoline
PC	BC. 81.22	1982	Fiat	147 GL	1.4		no		no	poor	M	33 27.425	70 39.835	11:00	gasoline
PC	SK.13.29	1999	Fiat	Fiorino	1.5		yes	76,000	no	good	M	33 27.425	70 39.835	11:00	gasoline
PC	SJ.48.88	1999	Ford	Escort	1.6		yes	72,000	yes	good	M	33 27.425	70 39.835	11:00	gasoline
PC	NN.55.11	1994	Hyundai	Accent	1.5		yes	88,000	no	good	M	33 27.425	70 39.835	11:00	gasoline
PC	NN.89.27	1994	Hyundai	Accent	1.5		yes	59,000	no	good	M	33 27.425	70 39.835	11:00	gasoline
PC	KP.58.90	1991	Hyundai	Excell GLS	1.5	i	yes	99,000	yes	good	M	33 27.425	70 39.835	11:00	gasoline
PC	UH.53.52	2001	Hyundai	Santamo	2		yes	14,000	no	good	M	33 27.425	70 39.835	11:00	gasoline
PC	PC.38.64	1996	KIA	Pride	1.5		yes	89,000	no	good	M	33 27.425	70 39.835	11:00	gasoline
PC	EK.77.72	1985	Leyland	Mini	0.8		no	100,000	no	poor	M	33 27.425	70 39.835	11:00	gasoline
PC	DE.49.97	1984	Mazda	626	1.8		no	243,000	no	poor	M	33 27.425	70 39.835	11:00	gasoline
PC	SP.53.20	1999	Mazda	626	1.8		yes		yes	good	A	33 27.425	70 39.835	11:00	gasoline
PC	RS.94.31	1998	Mitsubishi	Lancer GLX	1.6	l	yes		no	good	M	33 27.425	70 39.835	11:00	gasoline
PC	NV.20.80	1996	Mitsubishi	Lancer GLX	1.6	i	yes	47,000	yes	good	A	33 27.425	70 39.835	11:00	gasoline
PC	PA.57.63	1996	Nissan	Saloon EX	1.6		yes	99,000	no	medium	M	33 27.425	70 39.835	11:00	gasoline
PC	DR.95.74	1984	Nissan	Saloon EX	1.6		no	223,000	yes	good	M	33 27.425	70 39.835	11:00	gasoline
PC	KX.38.26	1991	Nissan	Saloon EX	1.6		yes	115,000	yes	good	M	33 27.425	70 39.835	11:00	gasoline
PC	PE.37.80	1996	Nissan	Super Saloon	1.6		yes	80,000	yes	good	M	33 27.425	70 39.835	11:00	gasoline
PC	FJ.36.47	1986	Nissan	Patrol 4x4	2.5		no	174,000	no	poor	M	33 27.425	70 39.835	11:00	gasoline
PC	SG.76.47	1999	Niva	1600	1.6		yes	10,000	no	good	M	33 27.425	70 39.835	11:00	gasoline
PC	PE.69.81	1996	Opel	Corsa	1.4		yes	102,000	no	medium	M	33 27.425	70 39.835	11:00	gasoline
PC	PG.63.98	1996	Peugeot	306 SR	1.6		yes	98,000	no	good	M	33 27.425	70 39.835	11:00	gasoline
PC	TG.91.66	2000	Peugeot	405 SR	1.8		yes		no	good	M	33 27.425	70 39.835	11:00	gasoline
PC	BY.80.81	1982	Renault	5	1.3		no	163,000	no	poor	M	33 27.425	70 39.835	11:00	gasoline
PC	NY.32.54	1994	Subaru	Legacy GL	1.8		yes	111,000	yes	medium	M	33 27.425	70 39.835	11:00	gasoline
PC	PU.73.79	1996	Suzuki	Maruti	1.5		yes	63,000	no	good	M	33 27.425	70 39.835	11:00	gasoline

PC	ST.48.27	1999 Toyota	Tercel	1.5	yes	57,000	no	good	M	33 27.425	70 39.835	11:00 gasoline
PC	PH.46.12	1996 VW	Vento	1.8	yes	141,000	yes	good	M	33 27.425	70 39.835	11:00 gasoline
Truck	KY.83.52	1991 Chevrolet	LUV	2.3	yes	128,000	no	medium	M	33 27.425	70 39.835	11:00 gasoline
Truck	LF.44.79	1992 Chevrolet	LUV Supercab	2.3	yes	97,000	no	good	M	33 27.425	70 39.835	11:00 gasoline
Truck	RR.21.74	1998 Chevrolet	LUV Supercab DLX	2.3	yes	62,000	yes	poor	M	33 27.425	70 39.835	11:00 gasoline
Truck	NE.12.98	1994 Ford	Ranger XL	2.3	yes	91,000	no	medium	M	33 27.425	70 39.835	11:00 gasoline
Truck	TH.22.39	2000 Toyota	HiLux	2.4	yes	49,000	yes	good	M	33 27.425	70 39.835	11:00 gasoline

Appendix B

On-Road Vehicle Technologies Allowed in IVE Model

Vehicle Technologies Used in the IVE Model

Description	Fuel	Weight	Air/Fuel Control	Exhaust Control	Evaporative Control	Age	Index	Fraction of Miles Driven Standard Vehicles	Fraction with AC Standard Vehicles	Fraction of Miles Driven Multi-Stop Vehicles	Fraction with AC Multi-Stop Vehicles
Automobile/Small Truck	Gasoline	Light	Carburetor	None	PCV	0-50K miles (0-79K km)	0				
Automobile/Small Truck	Gasoline	Light	Carburetor	None	PCV	51K-100K miles (80K-161K km)	1				
Automobile/Small Truck	Gasoline	Light	Carburetor	None	PCV	>100K miles (>162K km)	2				
Automobile/Small Truck	Gasoline	Medium	Carburetor	None	PCV	0-50K miles (0-79K km)	3				
Automobile/Small Truck	Gasoline	Medium	Carburetor	None	PCV	51K-100K miles (80K-161K km)	4				
Automobile/Small Truck	Gasoline	Medium	Carburetor	None	PCV	>100K miles (>162K km)	5				
Automobile/Small Truck	Gasoline	Heavy	Carburetor	None	PCV	0-50K miles (0-79K km)	6				
Automobile/Small Truck	Gasoline	Heavy	Carburetor	None	PCV	51K-100K miles (80K-161K km)	7				
Automobile/Small Truck	Gasoline	Heavy	Carburetor	None	PCV	>100K miles (>162K km)	8				
Automobile/Small Truck	Gasoline	Light	Carburetor	2-Way	PCV	0-50K miles (0-79K km)	9				
Automobile/Small Truck	Gasoline	Light	Carburetor	2-Way	PCV	51K-100K miles (80K-161K km)	10				
Automobile/Small Truck	Gasoline	Light	Carburetor	2-Way	PCV	>100K miles (>162K km)	11				
Automobile/Small Truck	Gasoline	Medium	Carburetor	2-Way	PCV	0-50K miles (0-79K km)	12				
Automobile/Small Truck	Gasoline	Medium	Carburetor	2-Way	PCV	51K-100K miles (80K-161K km)	13				
Automobile/Small Truck	Gasoline	Medium	Carburetor	2-Way	PCV	>100K miles (>162K km)	14				
Automobile/Small Truck	Gasoline	Heavy	Carburetor	2-Way	PCV	0-50K miles (0-79K km)	15				
Automobile/Small Truck	Gasoline	Heavy	Carburetor	2-Way	PCV	51K-100K miles (80K-161K km)	16				
Automobile/Small Truck	Gasoline	Heavy	Carburetor	2-Way	PCV	>100K miles (>162K km)	17				
Automobile/Small Truck	Gasoline	Light	Carburetor	2-Way/EGR	PCV	0-50K miles (0-79K km)	18				
Automobile/Small Truck	Gasoline	Light	Carburetor	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	19				
Automobile/Small Truck	Gasoline	Light	Carburetor	2-Way/EGR	PCV	>100K miles (>162K km)	20				
Automobile/Small Truck	Gasoline	Medium	Carburetor	2-Way/EGR	PCV	0-50K miles (0-79K km)	21				
Automobile/Small Truck	Gasoline	Medium	Carburetor	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	22				
Automobile/Small Truck	Gasoline	Medium	Carburetor	2-Way/EGR	PCV	>100K miles (>162K km)	23				
Automobile/Small Truck	Gasoline	Heavy	Carburetor	2-Way/EGR	PCV	0-50K miles (0-79K km)	24				
Automobile/Small Truck	Gasoline	Heavy	Carburetor	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	25				
Automobile/Small Truck	Gasoline	Heavy	Carburetor	2-Way/EGR	PCV	>100K miles (>162K km)	26				
Automobile/Small Truck	Gasoline	Light	Carburetor	3-Way	PCV	0-50K miles (0-79K km)	27				
Automobile/Small Truck	Gasoline	Light	Carburetor	3-Way	PCV	51K-100K miles (80K-161K km)	28				
Automobile/Small Truck	Gasoline	Light	Carburetor	3-Way	PCV	>100K miles (>162K km)	29				
Automobile/Small Truck	Gasoline	Medium	Carburetor	3-Way	PCV	0-50K miles (0-79K km)	30				

Automobile/Small Truck	Gasoline	Medium	Carburetor	3-Way	PCV	51K-100K miles (80K-161K km)	31
Automobile/Small Truck	Gasoline	Medium	Carburetor	3-Way	PCV	>100K miles (>162K km)	32
Automobile/Small Truck	Gasoline	Heavy	Carburetor	3-Way	PCV	0-50K miles (0-79K km)	33
Automobile/Small Truck	Gasoline	Heavy	Carburetor	3-Way	PCV	51K-100K miles (80K-161K km)	34
Automobile/Small Truck	Gasoline	Heavy	Carburetor	3-Way	PCV	>100K miles (>162K km)	35
Automobile/Small Truck	Gasoline	Light	Carburetor	3-Way/EGR	PCV	0-50K miles (0-79K km)	36
Automobile/Small Truck	Gasoline	Light	Carburetor	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	37
Automobile/Small Truck	Gasoline	Light	Carburetor	3-Way/EGR	PCV	>100K miles (>162K km)	38
Automobile/Small Truck	Gasoline	Medium	Carburetor	3-Way/EGR	PCV	0-50K miles (0-79K km)	39
Automobile/Small Truck	Gasoline	Medium	Carburetor	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	40
Automobile/Small Truck	Gasoline	Medium	Carburetor	3-Way/EGR	PCV	>100K miles (>162K km)	41
Automobile/Small Truck	Gasoline	Heavy	Carburetor	3-Way/EGR	PCV	0-50K miles (0-79K km)	42
Automobile/Small Truck	Gasoline	Heavy	Carburetor	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	43
Automobile/Small Truck	Gasoline	Heavy	Carburetor	3-Way/EGR	PCV	>100K miles (>162K km)	44
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	none	PCV	0-50K miles (0-79K km)	45
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	none	PCV	51K-100K miles (80K-161K km)	46
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	none	PCV	>100K miles (>162K km)	47
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	none	PCV	0-50K miles (0-79K km)	48
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	none	PCV	51K-100K miles (80K-161K km)	49
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	none	PCV	>100K miles (>162K km)	50
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	none	PCV	0-50K miles (0-79K km)	51
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	none	PCV	51K-100K miles (80K-161K km)	52
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	none	PCV	>100K miles (>162K km)	53
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	none/EGR	PCV	0-50K miles (0-79K km)	54
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	none/EGR	PCV	51K-100K miles (80K-161K km)	55
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	none/EGR	PCV	>100K miles (>162K km)	56
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	none/EGR	PCV	0-50K miles (0-79K km)	57
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	none/EGR	PCV	51K-100K miles (80K-161K km)	58
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	none/EGR	PCV	>100K miles (>162K km)	59
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	none/EGR	PCV	0-50K miles (0-79K km)	60
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	none/EGR	PCV	51K-100K miles (80K-161K km)	61
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	none/EGR	PCV	>100K miles (>162K km)	62
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	2-Way	PCV	0-50K miles (0-79K km)	63
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	2-Way	PCV	51K-100K miles (80K-161K km)	64
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	2-Way	PCV	>100K miles (>162K km)	65
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	2-Way	PCV	0-50K miles (0-79K km)	66
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	2-Way	PCV	51K-100K miles (80K-161K km)	67

Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	2-Way	PCV	51K-100K miles (80K-161K km)	67
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	2-Way	PCV	>100K miles (>162K km)	68
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	2-Way	PCV	0-50K miles (0-79K km)	69
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	2-Way	PCV	51K-100K miles (80K-161K km)	70
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	2-Way	PCV	>100K miles (>162K km)	71
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	2-Way/EGR	PCV	0-50K miles (0-79K km)	72
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	73
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	2-Way/EGR	PCV	>100K miles (>162K km)	74
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	2-Way/EGR	PCV	0-50K miles (0-79K km)	75
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	76
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	2-Way/EGR	PCV	>100K miles (>162K km)	77
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	2-Way/EGR	PCV	0-50K miles (0-79K km)	78
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	79
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	2-Way/EGR	PCV	>100K miles (>162K km)	80
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	3-Way	PCV	0-50K miles (0-79K km)	81
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	3-Way	PCV	51K-100K miles (80K-161K km)	82
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	3-Way	PCV	>100K miles (>162K km)	83
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	3-Way	PCV	0-50K miles (0-79K km)	84
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	3-Way	PCV	51K-100K miles (80K-161K km)	85
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	3-Way	PCV	>100K miles (>162K km)	86
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	3-Way	PCV	0-50K miles (0-79K km)	87
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	3-Way	PCV	51K-100K miles (80K-161K km)	88
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	3-Way	PCV	>100K miles (>162K km)	89
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	90
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	91
Automobile/Small Truck	Gasoline	Light	Throttle Body FI	3-Way/EGR	PCV	>100K miles (>162K km)	92
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	93
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	94
Automobile/Small Truck	Gasoline	Medium	Throttle Body FI	3-Way/EGR	PCV	>100K miles (>162K km)	95
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	96
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	97
Automobile/Small Truck	Gasoline	Heavy	Throttle Body FI	3-Way/EGR	PCV	>100K miles (>162K km)	98
Automobile/Small Truck	Gasoline	Light	Fuel Injection	none	PCV	0-50K miles (0-79K km)	99
Automobile/Small Truck	Gasoline	Light	Fuel Injection	none	PCV	51K-100K miles (80K-161K km)	100
Automobile/Small Truck	Gasoline	Light	Fuel Injection	none	PCV	>100K miles (>162K km)	101
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	none	PCV	0-50K miles (0-79K km)	102

Automobile/Small Truck	Gasoline	Medium	Fuel Injection	none	PCV	51K-100K miles (80K-161K km)	103
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	none	PCV	>100K miles (>162K km)	104
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	none	PCV	0-50K miles (0-79K km)	105
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	none	PCV	51K-100K miles (80K-161K km)	106
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	none	PCV	>100K miles (>162K km)	107
Automobile/Small Truck	Gasoline	Light	Fuel Injection	none/EGR	PCV	0-50K miles (0-79K km)	108
Automobile/Small Truck	Gasoline	Light	Fuel Injection	none/EGR	PCV	51K-100K miles (80K-161K km)	109
Automobile/Small Truck	Gasoline	Light	Fuel Injection	none/EGR	PCV	>100K miles (>162K km)	110
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	none/EGR	PCV	0-50K miles (0-79K km)	111
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	none/EGR	PCV	51K-100K miles (80K-161K km)	112
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	none/EGR	PCV	>100K miles (>162K km)	113
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	none/EGR	PCV	0-50K miles (0-79K km)	114
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	none/EGR	PCV	51K-100K miles (80K-161K km)	115
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	none/EGR	PCV	>100K miles (>162K km)	116
Automobile/Small Truck	Gasoline	Light	Fuel Injection	3-Way	PCV	0-50K miles (0-79K km)	117
Automobile/Small Truck	Gasoline	Light	Fuel Injection	3-Way	PCV	51K-100K miles (80K-161K km)	118
Automobile/Small Truck	Gasoline	Light	Fuel Injection	3-Way	PCV	>100K miles (>162K km)	119
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	3-Way	PCV	0-50K miles (0-79K km)	120
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	3-Way	PCV	51K-100K miles (80K-161K km)	121
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	3-Way	PCV	>100K miles (>162K km)	122
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	3-Way	PCV	0-50K miles (0-79K km)	123
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	3-Way	PCV	51K-100K miles (80K-161K km)	124
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	3-Way	PCV	>100K miles (>162K km)	125
Automobile/Small Truck	Gasoline	Light	Fuel Injection	3-Way/EGR	PCV	0-50K miles (0-79K km)	126
Automobile/Small Truck	Gasoline	Light	Fuel Injection	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	127
Automobile/Small Truck	Gasoline	Light	Fuel Injection	3-Way/EGR	PCV	>100K miles (>162K km)	128
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	3-Way/EGR	PCV	0-50K miles (0-79K km)	129
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	130
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	3-Way/EGR	PCV	>100K miles (>162K km)	131
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	3-Way/EGR	PCV	0-50K miles (0-79K km)	132
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	133
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	3-Way/EGR	PCV	>100K miles (>162K km)	134
Automobile/Small Truck	Gasoline	Light	Fuel Injection	3-Way/EGR	PCV/Tank	0-50K miles (0-79K km)	135
Automobile/Small Truck	Gasoline	Light	Fuel Injection	3-Way/EGR	PCV/Tank	51K-100K miles (80K-161K km)	136
Automobile/Small Truck	Gasoline	Light	Fuel Injection	3-Way/EGR	PCV/Tank	>100K miles (>162K km)	137
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	3-Way/EGR	PCV/Tank	0-50K miles (0-79K km)	138
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	3-Way/EGR	PCV/Tank	51K-100K miles (80K-161K km)	139

Automobile/Small Truck	Gasoline	Medium	Fuel Injection	3-Way/EGR	PCV/Tank	>100K miles (>162K km)	140
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	3-Way/EGR	PCV/Tank	0-50K miles (0-79K km)	141
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	3-Way/EGR	PCV/Tank	51K-100K miles (80K-161K km)	142
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	3-Way/EGR	PCV/Tank	>100K miles (>162K km)	143
Automobile/Small Truck	Gasoline	Light	Fuel Injection	LEV	PCV/Tank	0-50K miles (0-79K km)	144
Automobile/Small Truck	Gasoline	Light	Fuel Injection	LEV	PCV/Tank	51K-100K miles (80K-161K km)	145
Automobile/Small Truck	Gasoline	Light	Fuel Injection	LEV	PCV/Tank	>100K miles (>162K km)	146
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	LEV	PCV/Tank	0-50K miles (0-79K km)	147
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	LEV	PCV/Tank	51K-100K miles (80K-161K km)	148
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	LEV	PCV/Tank	>100K miles (>162K km)	149
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	LEV	PCV/Tank	0-50K miles (0-79K km)	150
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	LEV	PCV/Tank	51K-100K miles (80K-161K km)	151
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	LEV	PCV/Tank	>100K miles (>162K km)	152
Automobile/Small Truck	Gasoline	Light	Fuel Injection	ULEV	PCV/Tank	0-50K miles (0-79K km)	153
Automobile/Small Truck	Gasoline	Light	Fuel Injection	ULEV	PCV/Tank	51K-100K miles (80K-161K km)	154
Automobile/Small Truck	Gasoline	Light	Fuel Injection	ULEV	PCV/Tank	>100K miles (>162K km)	155
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	ULEV	PCV/Tank	0-50K miles (0-79K km)	156
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	ULEV	PCV/Tank	51K-100K miles (80K-161K km)	157
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	ULEV	PCV/Tank	>100K miles (>162K km)	158
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	ULEV	PCV/Tank	0-50K miles (0-79K km)	159
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	ULEV	PCV/Tank	51K-100K miles (80K-161K km)	160
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	ULEV	PCV/Tank	>100K miles (>162K km)	161
Automobile/Small Truck	Gasoline	Light	Fuel Injection	SULEV	PCV/Tank	0-50K miles (0-79K km)	162
Automobile/Small Truck	Gasoline	Light	Fuel Injection	SULEV	PCV/Tank	51K-100K miles (80K-161K km)	163
Automobile/Small Truck	Gasoline	Light	Fuel Injection	SULEV	PCV/Tank	>100K miles (>162K km)	164
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	SULEV	PCV/Tank	0-50K miles (0-79K km)	165
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	SULEV	PCV/Tank	51K-100K miles (80K-161K km)	166
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	SULEV	PCV/Tank	>100K miles (>162K km)	167
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	SULEV	PCV/Tank	0-50K miles (0-79K km)	168
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	SULEV	PCV/Tank	51K-100K miles (80K-161K km)	169
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	SULEV	PCV/Tank	>100K miles (>162K km)	170
Automobile/Small Truck	Gasoline	Light	Fuel Injection	Hybrid	PCV/Tank	0-50K miles (0-79K km)	171
Automobile/Small Truck	Gasoline	Light	Fuel Injection	Hybrid	PCV/Tank	51K-100K miles (80K-161K km)	172
Automobile/Small Truck	Gasoline	Light	Fuel Injection	Hybrid	PCV/Tank	>100K miles (>162K km)	173
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	Hybrid	PCV/Tank	0-50K miles (0-79K km)	174
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	Hybrid	PCV/Tank	51K-100K miles (80K-161K km)	175
Automobile/Small Truck	Gasoline	Medium	Fuel Injection	Hybrid	PCV/Tank	>100K miles (>162K km)	176
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	Hybrid	PCV/Tank	0-50K miles (0-79K km)	177

Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	Hybrid	PCV/Tank	51K-100K miles (80K-161K km)	178
Automobile/Small Truck	Gasoline	Heavy	Fuel Injection	Hybrid	PCV/Tank	>100K miles (>162K km)	179
Automobile/Small Truck	NG Retrofit	Light	Carburetor/Mixer	None	PCV	0-50K miles (0-79K km)	180
Automobile/Small Truck	NG Retrofit	Light	Carburetor/Mixer	None	PCV	51K-100K miles (80K-161K km)	181
Automobile/Small Truck	NG Retrofit	Light	Carburetor/Mixer	None	PCV	>100K miles (>162K km)	182
Automobile/Small Truck	NG Retrofit	Medium	Carburetor/Mixer	None	PCV	0-50K miles (0-79K km)	183
Automobile/Small Truck	NG Retrofit	Medium	Carburetor/Mixer	None	PCV	51K-100K miles (80K-161K km)	184
Automobile/Small Truck	NG Retrofit	Medium	Carburetor/Mixer	None	PCV	>100K miles (>162K km)	185
Automobile/Small Truck	NG Retrofit	Heavy	Carburetor/Mixer	None	PCV	0-50K miles (0-79K km)	186
Automobile/Small Truck	NG Retrofit	Heavy	Carburetor/Mixer	None	PCV	51K-100K miles (80K-161K km)	187
Automobile/Small Truck	NG Retrofit	Heavy	Carburetor/Mixer	None	PCV	>100K miles (>162K km)	188
Automobile/Small Truck	NG Retrofit	Light	Carburetor/Mixer	2-Way	PCV	0-50K miles (0-79K km)	189
Automobile/Small Truck	NG Retrofit	Light	Carburetor/Mixer	2-Way	PCV	51K-100K miles (80K-161K km)	190
Automobile/Small Truck	NG Retrofit	Light	Carburetor/Mixer	2-Way	PCV	>100K miles (>162K km)	191
Automobile/Small Truck	NG Retrofit	Medium	Carburetor/Mixer	2-Way	PCV	0-50K miles (0-79K km)	192
Automobile/Small Truck	NG Retrofit	Medium	Carburetor/Mixer	2-Way	PCV	51K-100K miles (80K-161K km)	193
Automobile/Small Truck	NG Retrofit	Medium	Carburetor/Mixer	2-Way	PCV	>100K miles (>162K km)	194
Automobile/Small Truck	NG Retrofit	Heavy	Carburetor/Mixer	2-Way	PCV	0-50K miles (0-79K km)	195
Automobile/Small Truck	NG Retrofit	Heavy	Carburetor/Mixer	2-Way	PCV	51K-100K miles (80K-161K km)	196
Automobile/Small Truck	NG Retrofit	Heavy	Carburetor/Mixer	2-Way	PCV	>100K miles (>162K km)	197
Automobile/Small Truck	NG Retrofit	Light	Carburetor/Mixer	2-Way/EGR	PCV	0-50K miles (0-79K km)	198
Automobile/Small Truck	NG Retrofit	Light	Carburetor/Mixer	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	199
Automobile/Small Truck	NG Retrofit	Light	Carburetor/Mixer	2-Way/EGR	PCV	>100K miles (>162K km)	200
Automobile/Small Truck	NG Retrofit	Medium	Carburetor/Mixer	2-Way/EGR	PCV	0-50K miles (0-79K km)	201
Automobile/Small Truck	NG Retrofit	Medium	Carburetor/Mixer	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	202
Automobile/Small Truck	NG Retrofit	Medium	Carburetor/Mixer	2-Way/EGR	PCV	>100K miles (>162K km)	203
Automobile/Small Truck	NG Retrofit	Heavy	Carburetor/Mixer	2-Way/EGR	PCV	0-50K miles (0-79K km)	204
Automobile/Small Truck	NG Retrofit	Heavy	Carburetor/Mixer	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	205
Automobile/Small Truck	NG Retrofit	Heavy	Carburetor/Mixer	2-Way/EGR	PCV	>100K miles (>162K km)	206
Automobile/Small Truck	NG Retrofit	Light	Carburetor/Mixer	3-Way	PCV	0-50K miles (0-79K km)	207
Automobile/Small Truck	NG Retrofit	Light	Carburetor/Mixer	3-Way	PCV	51K-100K miles (80K-161K km)	208
Automobile/Small Truck	NG Retrofit	Light	Carburetor/Mixer	3-Way	PCV	>100K miles (>162K km)	209
Automobile/Small Truck	NG Retrofit	Medium	Carburetor/Mixer	3-Way	PCV	0-50K miles (0-79K km)	210
Automobile/Small Truck	NG Retrofit	Medium	Carburetor/Mixer	3-Way	PCV	51K-100K miles (80K-161K km)	211
Automobile/Small Truck	NG Retrofit	Medium	Carburetor/Mixer	3-Way	PCV	>100K miles (>162K km)	212
Automobile/Small Truck	NG Retrofit	Heavy	Carburetor/Mixer	3-Way	PCV	0-50K miles (0-79K km)	213
Automobile/Small Truck	NG Retrofit	Heavy	Carburetor/Mixer	3-Way	PCV	51K-100K miles (80K-161K km)	214

Automobile/Small Truck	NG Retrofit	Heavy	Carburetor/Mixer	3-Way	PCV	>100K miles (>162K km)	215
Automobile/Small Truck	NG Retrofit	Light	Carburetor/Mixer	3-Way/EGR	PCV	0-50K miles (0-79K km)	216
Automobile/Small Truck	NG Retrofit	Light	Carburetor/Mixer	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	217
Automobile/Small Truck	NG Retrofit	Light	Carburetor/Mixer	3-Way/EGR	PCV	>100K miles (>162K km)	218
Automobile/Small Truck	NG Retrofit	Medium	Carburetor/Mixer	3-Way/EGR	PCV	0-50K miles (0-79K km)	219
Automobile/Small Truck	NG Retrofit	Medium	Carburetor/Mixer	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	220
Automobile/Small Truck	NG Retrofit	Medium	Carburetor/Mixer	3-Way/EGR	PCV	>100K miles (>162K km)	221
Automobile/Small Truck	NG Retrofit	Heavy	Carburetor/Mixer	3-Way/EGR	PCV	0-50K miles (0-79K km)	222
Automobile/Small Truck	NG Retrofit	Heavy	Carburetor/Mixer	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	223
Automobile/Small Truck	NG Retrofit	Heavy	Carburetor/Mixer	3-Way/EGR	PCV	>100K miles (>162K km)	224
Automobile/Small Truck	Natural Gas	Light	Carburetor/Mixer	None	PCV	0-50K miles (0-79K km)	225
Automobile/Small Truck	Natural Gas	Light	Carburetor/Mixer	None	PCV	51K-100K miles (80K-161K km)	226
Automobile/Small Truck	Natural Gas	Light	Carburetor/Mixer	None	PCV	>100K miles (>162K km)	227
Automobile/Small Truck	Natural Gas	Medium	Carburetor/Mixer	None	PCV	0-50K miles (0-79K km)	228
Automobile/Small Truck	Natural Gas	Medium	Carburetor/Mixer	None	PCV	51K-100K miles (80K-161K km)	229
Automobile/Small Truck	Natural Gas	Medium	Carburetor/Mixer	None	PCV	>100K miles (>162K km)	230
Automobile/Small Truck	Natural Gas	Heavy	Carburetor/Mixer	None	PCV	0-50K miles (0-79K km)	231
Automobile/Small Truck	Natural Gas	Heavy	Carburetor/Mixer	None	PCV	51K-100K miles (80K-161K km)	232
Automobile/Small Truck	Natural Gas	Heavy	Carburetor/Mixer	None	PCV	>100K miles (>162K km)	233
Automobile/Small Truck	Natural Gas	Light	Carburetor/Mixer	2-Way	PCV	0-50K miles (0-79K km)	234
Automobile/Small Truck	Natural Gas	Light	Carburetor/Mixer	2-Way	PCV	51K-100K miles (80K-161K km)	235
Automobile/Small Truck	Natural Gas	Light	Carburetor/Mixer	2-Way	PCV	>100K miles (>162K km)	236
Automobile/Small Truck	Natural Gas	Medium	Carburetor/Mixer	2-Way	PCV	0-50K miles (0-79K km)	237
Automobile/Small Truck	Natural Gas	Medium	Carburetor/Mixer	2-Way	PCV	51K-100K miles (80K-161K km)	238
Automobile/Small Truck	Natural Gas	Medium	Carburetor/Mixer	2-Way	PCV	>100K miles (>162K km)	239
Automobile/Small Truck	Natural Gas	Heavy	Carburetor/Mixer	2-Way	PCV	0-50K miles (0-79K km)	240
Automobile/Small Truck	Natural Gas	Heavy	Carburetor/Mixer	2-Way	PCV	51K-100K miles (80K-161K km)	241
Automobile/Small Truck	Natural Gas	Heavy	Carburetor/Mixer	2-Way	PCV	>100K miles (>162K km)	242
Automobile/Small Truck	Natural Gas	Light	Carburetor/Mixer	2-Way/EGR	PCV	0-50K miles (0-79K km)	243
Automobile/Small Truck	Natural Gas	Light	Carburetor/Mixer	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	244
Automobile/Small Truck	Natural Gas	Light	Carburetor/Mixer	2-Way/EGR	PCV	>100K miles (>162K km)	245
Automobile/Small Truck	Natural Gas	Medium	Carburetor/Mixer	2-Way/EGR	PCV	0-50K miles (0-79K km)	246
Automobile/Small Truck	Natural Gas	Medium	Carburetor/Mixer	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	247
Automobile/Small Truck	Natural Gas	Medium	Carburetor/Mixer	2-Way/EGR	PCV	>100K miles (>162K km)	248
Automobile/Small Truck	Natural Gas	Heavy	Carburetor/Mixer	2-Way/EGR	PCV	0-50K miles (0-79K km)	249
Automobile/Small Truck	Natural Gas	Heavy	Carburetor/Mixer	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	250
Automobile/Small Truck	Natural Gas	Heavy	Carburetor/Mixer	2-Way/EGR	PCV	>100K miles (>162K km)	251

Automobile/Small Truck	Natural Gas	Light	Carburetor/Mixer	3-Way	PCV	0-50K miles (0-79K km)	252
Automobile/Small Truck	Natural Gas	Light	Carburetor/Mixer	3-Way	PCV	51K-100K miles (80K-161K km)	253
Automobile/Small Truck	Natural Gas	Light	Carburetor/Mixer	3-Way	PCV	>100K miles (>162K km)	254
Automobile/Small Truck	Natural Gas	Medium	Carburetor/Mixer	3-Way	PCV	0-50K miles (0-79K km)	255
Automobile/Small Truck	Natural Gas	Medium	Carburetor/Mixer	3-Way	PCV	51K-100K miles (80K-161K km)	256
Automobile/Small Truck	Natural Gas	Medium	Carburetor/Mixer	3-Way	PCV	>100K miles (>162K km)	257
Automobile/Small Truck	Natural Gas	Heavy	Carburetor/Mixer	3-Way	PCV	0-50K miles (0-79K km)	258
Automobile/Small Truck	Natural Gas	Heavy	Carburetor/Mixer	3-Way	PCV	51K-100K miles (80K-161K km)	259
Automobile/Small Truck	Natural Gas	Heavy	Carburetor/Mixer	3-Way	PCV	>100K miles (>162K km)	260
Automobile/Small Truck	Natural Gas	Light	Carburetor/Mixer	3-Way/EGR	PCV	0-50K miles (0-79K km)	261
Automobile/Small Truck	Natural Gas	Light	Carburetor/Mixer	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	262
Automobile/Small Truck	Natural Gas	Light	Carburetor/Mixer	3-Way/EGR	PCV	>100K miles (>162K km)	263
Automobile/Small Truck	Natural Gas	Medium	Carburetor/Mixer	3-Way/EGR	PCV	0-50K miles (0-79K km)	264
Automobile/Small Truck	Natural Gas	Medium	Carburetor/Mixer	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	265
Automobile/Small Truck	Natural Gas	Medium	Carburetor/Mixer	3-Way/EGR	PCV	>100K miles (>162K km)	266
Automobile/Small Truck	Natural Gas	Heavy	Carburetor/Mixer	3-Way/EGR	PCV	0-50K miles (0-79K km)	267
Automobile/Small Truck	Natural Gas	Heavy	Carburetor/Mixer	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	268
Automobile/Small Truck	Natural Gas	Heavy	Carburetor/Mixer	3-Way/EGR	PCV	>100K miles (>162K km)	269
Automobile/Small Truck	Natural Gas	Light	Fuel Injection	3-Way	PCV	0-50K miles (0-79K km)	270
Automobile/Small Truck	Natural Gas	Light	Fuel Injection	3-Way	PCV	51K-100K miles (80K-161K km)	271
Automobile/Small Truck	Natural Gas	Light	Fuel Injection	3-Way	PCV	>100K miles (>162K km)	272
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	3-Way	PCV	0-50K miles (0-79K km)	273
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	3-Way	PCV	51K-100K miles (80K-161K km)	274
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	3-Way	PCV	>100K miles (>162K km)	275
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	3-Way	PCV	0-50K miles (0-79K km)	276
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	3-Way	PCV	51K-100K miles (80K-161K km)	277
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	3-Way	PCV	>100K miles (>162K km)	278
Automobile/Small Truck	Natural Gas	Light	Fuel Injection	3-Way/EGR	PCV	0-50K miles (0-79K km)	279
Automobile/Small Truck	Natural Gas	Light	Fuel Injection	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	280
Automobile/Small Truck	Natural Gas	Light	Fuel Injection	3-Way/EGR	PCV	>100K miles (>162K km)	281
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	3-Way/EGR	PCV	0-50K miles (0-79K km)	282
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	283
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	3-Way/EGR	PCV	>100K miles (>162K km)	284
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	3-Way/EGR	PCV	0-50K miles (0-79K km)	285
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	286
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	3-Way/EGR	PCV	>100K miles (>162K km)	287
Automobile/Small Truck	Natural Gas	Light	Fuel Injection	3-Way/EGR	PCV	0-50K miles (0-79K km)	288

Automobile/Small Truck	Natural Gas	Light	Fuel Injection	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	289
Automobile/Small Truck	Natural Gas	Light	Fuel Injection	3-Way/EGR	PCV	>100K miles (>162K km)	290
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	3-Way/EGR	PCV	0-50K miles (0-79K km)	291
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	292
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	3-Way/EGR	PCV	>100K miles (>162K km)	293
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	3-Way/EGR	PCV	0-50K miles (0-79K km)	294
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	295
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	3-Way/EGR	PCV	>100K miles (>162K km)	296
Automobile/Small Truck	Natural Gas	Light	Fuel Injection	ULEV	PCV	0-50K miles (0-79K km)	297
Automobile/Small Truck	Natural Gas	Light	Fuel Injection	ULEV	PCV	51K-100K miles (80K-161K km)	298
Automobile/Small Truck	Natural Gas	Light	Fuel Injection	ULEV	PCV	>100K miles (>162K km)	299
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	ULEV	PCV	0-50K miles (0-79K km)	300
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	ULEV	PCV	51K-100K miles (80K-161K km)	301
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	ULEV	PCV	>100K miles (>162K km)	302
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	ULEV	PCV	0-50K miles (0-79K km)	303
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	ULEV	PCV	51K-100K miles (80K-161K km)	304
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	ULEV	PCV	>100K miles (>162K km)	305
Automobile/Small Truck	Natural Gas	Light	Fuel Injection	SULEV	PCV	0-50K miles (0-79K km)	306
Automobile/Small Truck	Natural Gas	Light	Fuel Injection	SULEV	PCV	51K-100K miles (80K-161K km)	307
Automobile/Small Truck	Natural Gas	Light	Fuel Injection	SULEV	PCV	>100K miles (>162K km)	308
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	SULEV	PCV	0-50K miles (0-79K km)	309
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	SULEV	PCV	51K-100K miles (80K-161K km)	310
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	SULEV	PCV	>100K miles (>162K km)	311
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	SULEV	PCV	0-50K miles (0-79K km)	312
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	SULEV	PCV	51K-100K miles (80K-161K km)	313
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	SULEV	PCV	>100K miles (>162K km)	314
Automobile/Small Truck	Natural Gas	Light	Fuel Injection	Hybrid	PCV	0-50K miles (0-79K km)	315
Automobile/Small Truck	Natural Gas	Light	Fuel Injection	Hybrid	PCV	51K-100K miles (80K-161K km)	316
Automobile/Small Truck	Natural Gas	Light	Fuel Injection	Hybrid	PCV	>100K miles (>162K km)	317
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	Hybrid	PCV	0-50K miles (0-79K km)	318
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	Hybrid	PCV	51K-100K miles (80K-161K km)	319
Automobile/Small Truck	Natural Gas	Medium	Fuel Injection	Hybrid	PCV	>100K miles (>162K km)	320
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	Hybrid	PCV	0-50K miles (0-79K km)	321
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	Hybrid	PCV	51K-100K miles (80K-161K km)	322
Automobile/Small Truck	Natural Gas	Heavy	Fuel Injection	Hybrid	PCV	>100K miles (>162K km)	323
Automobile/Small Truck	EthOH Retrofit	Light	Carburetor/Mixer	None	PCV	0-50K miles (0-79K km)	324
Automobile/Small Truck	EthOH Retrofit	Light	Carburetor/Mixer	None	PCV	51K-100K miles (80K-161K km)	325

Automobile/Small Truck	EthOH Retrofit	Medium	Carburetor/Mixer	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	364
Automobile/Small Truck	EthOH Retrofit	Medium	Carburetor/Mixer	3-Way/EGR	PCV	>100K miles (>162K km)	365
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	3-Way/EGR	PCV	0-50K miles (0-79K km)	366
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	367
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	3-Way/EGR	PCV	>100K miles (>162K km)	368
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	2-Way	PCV	0-50K miles (0-79K km)	369
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	2-Way	PCV	51K-100K miles (80K-161K km)	370
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	2-Way	PCV	>100K miles (>162K km)	371
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	2-Way	PCV	0-50K miles (0-79K km)	372
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	2-Way	PCV	51K-100K miles (80K-161K km)	373
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	2-Way	PCV	>100K miles (>162K km)	374
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	2-Way	PCV	0-50K miles (0-79K km)	375
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	2-Way	PCV	51K-100K miles (80K-161K km)	376
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	2-Way	PCV	>100K miles (>162K km)	377
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	2-Way/EGR	PCV	0-50K miles (0-79K km)	378
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	379
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	2-Way/EGR	PCV	>100K miles (>162K km)	380
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	2-Way/EGR	PCV	0-50K miles (0-79K km)	381
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	382
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	2-Way/EGR	PCV	>100K miles (>162K km)	383
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	2-Way/EGR	PCV	0-50K miles (0-79K km)	384
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	385
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	2-Way/EGR	PCV	>100K miles (>162K km)	386
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	3-Way	PCV	0-50K miles (0-79K km)	387
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	3-Way	PCV	51K-100K miles (80K-161K km)	388
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	3-Way	PCV	>100K miles (>162K km)	389
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	3-Way	PCV	0-50K miles (0-79K km)	390
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	3-Way	PCV	51K-100K miles (80K-161K km)	391
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	3-Way	PCV	>100K miles (>162K km)	392
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	3-Way	PCV	0-50K miles (0-79K km)	393
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	3-Way	PCV	51K-100K miles (80K-161K km)	394
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	3-Way	PCV	>100K miles (>162K km)	395
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	396
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	397
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	3-Way/EGR	PCV	>100K miles (>162K km)	398
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	399
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	400
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	3-Way/EGR	PCV	>100K miles (>162K km)	401

Automobile/Small Truck	EthOH Retrofit	Light	Carburetor/Mixer	None	PCV	>100K miles (>162K km)	326
Automobile/Small Truck	EthOH Retrofit	Medium	Carburetor/Mixer	None	PCV	0-50K miles (0-79K km)	327
Automobile/Small Truck	EthOH Retrofit	Medium	Carburetor/Mixer	None	PCV	51K-100K miles (80K-161K km)	328
Automobile/Small Truck	EthOH Retrofit	Medium	Carburetor/Mixer	None	PCV	>100K miles (>162K km)	329
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	None	PCV	0-50K miles (0-79K km)	330
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	None	PCV	51K-100K miles (80K-161K km)	331
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	None	PCV	>100K miles (>162K km)	332
Automobile/Small Truck	EthOH Retrofit	Light	Carburetor/Mixer	2-Way	PCV	0-50K miles (0-79K km)	333
Automobile/Small Truck	EthOH Retrofit	Light	Carburetor/Mixer	2-Way	PCV	51K-100K miles (80K-161K km)	334
Automobile/Small Truck	EthOH Retrofit	Light	Carburetor/Mixer	2-Way	PCV	>100K miles (>162K km)	335
Automobile/Small Truck	EthOH Retrofit	Medium	Carburetor/Mixer	2-Way	PCV	0-50K miles (0-79K km)	336
Automobile/Small Truck	EthOH Retrofit	Medium	Carburetor/Mixer	2-Way	PCV	51K-100K miles (80K-161K km)	337
Automobile/Small Truck	EthOH Retrofit	Medium	Carburetor/Mixer	2-Way	PCV	>100K miles (>162K km)	338
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	2-Way	PCV	0-50K miles (0-79K km)	339
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	2-Way	PCV	51K-100K miles (80K-161K km)	340
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	2-Way	PCV	>100K miles (>162K km)	341
Automobile/Small Truck	EthOH Retrofit	Light	Carburetor/Mixer	2-Way/EGR	PCV	0-50K miles (0-79K km)	342
Automobile/Small Truck	EthOH Retrofit	Light	Carburetor/Mixer	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	343
Automobile/Small Truck	EthOH Retrofit	Light	Carburetor/Mixer	2-Way/EGR	PCV	>100K miles (>162K km)	344
Automobile/Small Truck	EthOH Retrofit	Medium	Carburetor/Mixer	2-Way/EGR	PCV	0-50K miles (0-79K km)	345
Automobile/Small Truck	EthOH Retrofit	Medium	Carburetor/Mixer	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	346
Automobile/Small Truck	EthOH Retrofit	Medium	Carburetor/Mixer	2-Way/EGR	PCV	>100K miles (>162K km)	347
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	2-Way/EGR	PCV	0-50K miles (0-79K km)	348
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	349
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	2-Way/EGR	PCV	>100K miles (>162K km)	350
Automobile/Small Truck	EthOH Retrofit	Light	Carburetor/Mixer	3-Way	PCV	0-50K miles (0-79K km)	351
Automobile/Small Truck	EthOH Retrofit	Light	Carburetor/Mixer	3-Way	PCV	51K-100K miles (80K-161K km)	352
Automobile/Small Truck	EthOH Retrofit	Light	Carburetor/Mixer	3-Way	PCV	>100K miles (>162K km)	353
Automobile/Small Truck	EthOH Retrofit	Medium	Carburetor/Mixer	3-Way	PCV	0-50K miles (0-79K km)	354
Automobile/Small Truck	EthOH Retrofit	Medium	Carburetor/Mixer	3-Way	PCV	51K-100K miles (80K-161K km)	355
Automobile/Small Truck	EthOH Retrofit	Medium	Carburetor/Mixer	3-Way	PCV	>100K miles (>162K km)	356
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	3-Way	PCV	0-50K miles (0-79K km)	357
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	3-Way	PCV	51K-100K miles (80K-161K km)	358
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	3-Way	PCV	>100K miles (>162K km)	359
Automobile/Small Truck	EthOH Retrofit	Light	Carburetor/Mixer	3-Way/EGR	PCV	0-50K miles (0-79K km)	360
Automobile/Small Truck	EthOH Retrofit	Light	Carburetor/Mixer	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	361
Automobile/Small Truck	EthOH Retrofit	Light	Carburetor/Mixer	3-Way/EGR	PCV	>100K miles (>162K km)	362
Automobile/Small Truck	EthOH Retrofit	Medium	Carburetor/Mixer	3-Way/EGR	PCV	0-50K miles (0-79K km)	363

Automobile/Small Truck	EthOH Retrofit	Medium	Carburetor/Mixer	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	364
Automobile/Small Truck	EthOH Retrofit	Medium	Carburetor/Mixer	3-Way/EGR	PCV	>100K miles (>162K km)	365
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	3-Way/EGR	PCV	0-50K miles (0-79K km)	366
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	367
Automobile/Small Truck	EthOH Retrofit	Heavy	Carburetor/Mixer	3-Way/EGR	PCV	>100K miles (>162K km)	368
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	2-Way	PCV	0-50K miles (0-79K km)	369
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	2-Way	PCV	51K-100K miles (80K-161K km)	370
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	2-Way	PCV	>100K miles (>162K km)	371
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	2-Way	PCV	0-50K miles (0-79K km)	372
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	2-Way	PCV	51K-100K miles (80K-161K km)	373
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	2-Way	PCV	>100K miles (>162K km)	374
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	2-Way	PCV	0-50K miles (0-79K km)	375
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	2-Way	PCV	51K-100K miles (80K-161K km)	376
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	2-Way	PCV	>100K miles (>162K km)	377
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	2-Way/EGR	PCV	0-50K miles (0-79K km)	378
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	379
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	2-Way/EGR	PCV	>100K miles (>162K km)	380
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	2-Way/EGR	PCV	0-50K miles (0-79K km)	381
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	382
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	2-Way/EGR	PCV	>100K miles (>162K km)	383
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	2-Way/EGR	PCV	0-50K miles (0-79K km)	384
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	385
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	2-Way/EGR	PCV	>100K miles (>162K km)	386
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	3-Way	PCV	0-50K miles (0-79K km)	387
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	3-Way	PCV	51K-100K miles (80K-161K km)	388
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	3-Way	PCV	>100K miles (>162K km)	389
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	3-Way	PCV	0-50K miles (0-79K km)	390
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	3-Way	PCV	51K-100K miles (80K-161K km)	391
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	3-Way	PCV	>100K miles (>162K km)	392
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	3-Way	PCV	0-50K miles (0-79K km)	393
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	3-Way	PCV	51K-100K miles (80K-161K km)	394
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	3-Way	PCV	>100K miles (>162K km)	395
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	396
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	397
Automobile/Small Truck	EthOH Retrofit	Light	Throttle Body FI	3-Way/EGR	PCV	>100K miles (>162K km)	398
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	399
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	400
Automobile/Small Truck	EthOH Retrofit	Medium	Throttle Body FI	3-Way/EGR	PCV	>100K miles (>162K km)	401

Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	402
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	403
Automobile/Small Truck	EthOH Retrofit	Heavy	Throttle Body FI	3-Way/EGR	PCV	>100K miles (>162K km)	404
Automobile/Small Truck	EthOH Retrofit	Light	Fuel Injection	3-Way	PCV	0-50K miles (0-79K km)	405
Automobile/Small Truck	EthOH Retrofit	Light	Fuel Injection	3-Way	PCV	51K-100K miles (80K-161K km)	406
Automobile/Small Truck	EthOH Retrofit	Light	Fuel Injection	3-Way	PCV	>100K miles (>162K km)	407
Automobile/Small Truck	EthOH Retrofit	Medium	Fuel Injection	3-Way	PCV	0-50K miles (0-79K km)	408
Automobile/Small Truck	EthOH Retrofit	Medium	Fuel Injection	3-Way	PCV	51K-100K miles (80K-161K km)	409
Automobile/Small Truck	EthOH Retrofit	Medium	Fuel Injection	3-Way	PCV	>100K miles (>162K km)	410
Automobile/Small Truck	EthOH Retrofit	Heavy	Fuel Injection	3-Way	PCV	0-50K miles (0-79K km)	411
Automobile/Small Truck	EthOH Retrofit	Heavy	Fuel Injection	3-Way	PCV	51K-100K miles (80K-161K km)	412
Automobile/Small Truck	EthOH Retrofit	Heavy	Fuel Injection	3-Way	PCV	>100K miles (>162K km)	413
Automobile/Small Truck	EthOH Retrofit	Light	Fuel Injection	3-Way/EGR	PCV	0-50K miles (0-79K km)	414
Automobile/Small Truck	EthOH Retrofit	Light	Fuel Injection	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	415
Automobile/Small Truck	EthOH Retrofit	Light	Fuel Injection	3-Way/EGR	PCV	>100K miles (>162K km)	416
Automobile/Small Truck	EthOH Retrofit	Medium	Fuel Injection	3-Way/EGR	PCV	0-50K miles (0-79K km)	417
Automobile/Small Truck	EthOH Retrofit	Medium	Fuel Injection	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	418
Automobile/Small Truck	EthOH Retrofit	Medium	Fuel Injection	3-Way/EGR	PCV	>100K miles (>162K km)	419
Automobile/Small Truck	EthOH Retrofit	Heavy	Fuel Injection	3-Way/EGR	PCV	0-50K miles (0-79K km)	420
Automobile/Small Truck	EthOH Retrofit	Heavy	Fuel Injection	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	421
Automobile/Small Truck	EthOH Retrofit	Heavy	Fuel Injection	3-Way/EGR	PCV	>100K miles (>162K km)	422
Automobile/Small Truck	EthOH Retrofit	Light	Fuel Injection	3-Way/EGR	PCV/Tank	0-50K miles (0-79K km)	423
Automobile/Small Truck	EthOH Retrofit	Light	Fuel Injection	3-Way/EGR	PCV/Tank	51K-100K miles (80K-161K km)	424
Automobile/Small Truck	EthOH Retrofit	Light	Fuel Injection	3-Way/EGR	PCV/Tank	>100K miles (>162K km)	425
Automobile/Small Truck	EthOH Retrofit	Medium	Fuel Injection	3-Way/EGR	PCV/Tank	0-50K miles (0-79K km)	426
Automobile/Small Truck	EthOH Retrofit	Medium	Fuel Injection	3-Way/EGR	PCV/Tank	51K-100K miles (80K-161K km)	427
Automobile/Small Truck	EthOH Retrofit	Medium	Fuel Injection	3-Way/EGR	PCV/Tank	>100K miles (>162K km)	428
Automobile/Small Truck	EthOH Retrofit	Heavy	Fuel Injection	3-Way/EGR	PCV/Tank	0-50K miles (0-79K km)	429
Automobile/Small Truck	EthOH Retrofit	Heavy	Fuel Injection	3-Way/EGR	PCV/Tank	51K-100K miles (80K-161K km)	430
Automobile/Small Truck	EthOH Retrofit	Heavy	Fuel Injection	3-Way/EGR	PCV/Tank	>100K miles (>162K km)	431
Automobile/Small Truck	Ethanol	Light	Carburetor	None	PCV	0-50K miles (0-79K km)	432
Automobile/Small Truck	Ethanol	Light	Carburetor	None	PCV	51K-100K miles (80K-161K km)	433
Automobile/Small Truck	Ethanol	Light	Carburetor	None	PCV	>100K miles (>162K km)	434
Automobile/Small Truck	Ethanol	Medium	Carburetor	None	PCV	0-50K miles (0-79K km)	435
Automobile/Small Truck	Ethanol	Medium	Carburetor	None	PCV	51K-100K miles (80K-161K km)	436
Automobile/Small Truck	Ethanol	Medium	Carburetor	None	PCV	>100K miles (>162K km)	437
Automobile/Small Truck	Ethanol	Heavy	Carburetor	None	PCV	0-50K miles (0-79K km)	438

Automobile/Small Truck	Ethanol	Heavy	Carburetor	None	PCV	51K-100K miles (80K-161K km)	439
Automobile/Small Truck	Ethanol	Heavy	Carburetor	None	PCV	>100K miles (>162K km)	440
Automobile/Small Truck	Ethanol	Light	Carburetor	2-Way	PCV	0-50K miles (0-79K km)	441
Automobile/Small Truck	Ethanol	Light	Carburetor	2-Way	PCV	51K-100K miles (80K-161K km)	442
Automobile/Small Truck	Ethanol	Light	Carburetor	2-Way	PCV	>100K miles (>162K km)	443
Automobile/Small Truck	Ethanol	Medium	Carburetor	2-Way	PCV	0-50K miles (0-79K km)	444
Automobile/Small Truck	Ethanol	Medium	Carburetor	2-Way	PCV	51K-100K miles (80K-161K km)	445
Automobile/Small Truck	Ethanol	Medium	Carburetor	2-Way	PCV	>100K miles (>162K km)	446
Automobile/Small Truck	Ethanol	Heavy	Carburetor	2-Way	PCV	0-50K miles (0-79K km)	447
Automobile/Small Truck	Ethanol	Heavy	Carburetor	2-Way	PCV	51K-100K miles (80K-161K km)	448
Automobile/Small Truck	Ethanol	Heavy	Carburetor	2-Way	PCV	>100K miles (>162K km)	449
Automobile/Small Truck	Ethanol	Light	Carburetor	2-Way/EGR	PCV	0-50K miles (0-79K km)	450
Automobile/Small Truck	Ethanol	Light	Carburetor	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	451
Automobile/Small Truck	Ethanol	Light	Carburetor	2-Way/EGR	PCV	>100K miles (>162K km)	452
Automobile/Small Truck	Ethanol	Medium	Carburetor	2-Way/EGR	PCV	0-50K miles (0-79K km)	453
Automobile/Small Truck	Ethanol	Medium	Carburetor	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	454
Automobile/Small Truck	Ethanol	Medium	Carburetor	2-Way/EGR	PCV	>100K miles (>162K km)	455
Automobile/Small Truck	Ethanol	Heavy	Carburetor	2-Way/EGR	PCV	0-50K miles (0-79K km)	456
Automobile/Small Truck	Ethanol	Heavy	Carburetor	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	457
Automobile/Small Truck	Ethanol	Heavy	Carburetor	2-Way/EGR	PCV	>100K miles (>162K km)	458
Automobile/Small Truck	Ethanol	Light	Carburetor	3-Way	PCV	0-50K miles (0-79K km)	459
Automobile/Small Truck	Ethanol	Light	Carburetor	3-Way	PCV	51K-100K miles (80K-161K km)	460
Automobile/Small Truck	Ethanol	Light	Carburetor	3-Way	PCV	>100K miles (>162K km)	461
Automobile/Small Truck	Ethanol	Medium	Carburetor	3-Way	PCV	0-50K miles (0-79K km)	462
Automobile/Small Truck	Ethanol	Medium	Carburetor	3-Way	PCV	51K-100K miles (80K-161K km)	463
Automobile/Small Truck	Ethanol	Medium	Carburetor	3-Way	PCV	>100K miles (>162K km)	464
Automobile/Small Truck	Ethanol	Heavy	Carburetor	3-Way	PCV	0-50K miles (0-79K km)	465
Automobile/Small Truck	Ethanol	Heavy	Carburetor	3-Way	PCV	51K-100K miles (80K-161K km)	466
Automobile/Small Truck	Ethanol	Heavy	Carburetor	3-Way	PCV	>100K miles (>162K km)	467
Automobile/Small Truck	Ethanol	Light	Carburetor	3-Way/EGR	PCV	0-50K miles (0-79K km)	468
Automobile/Small Truck	Ethanol	Light	Carburetor	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	469
Automobile/Small Truck	Ethanol	Light	Carburetor	3-Way/EGR	PCV	>100K miles (>162K km)	470
Automobile/Small Truck	Ethanol	Medium	Carburetor	3-Way/EGR	PCV	0-50K miles (0-79K km)	471
Automobile/Small Truck	Ethanol	Medium	Carburetor	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	472
Automobile/Small Truck	Ethanol	Medium	Carburetor	3-Way/EGR	PCV	>100K miles (>162K km)	473
Automobile/Small Truck	Ethanol	Heavy	Carburetor	3-Way/EGR	PCV	0-50K miles (0-79K km)	474
Automobile/Small Truck	Ethanol	Heavy	Carburetor	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	475
Automobile/Small Truck	Ethanol	Heavy	Carburetor	3-Way/EGR	PCV	>100K miles (>162K km)	476

Automobile/Small Truck	Ethanol	Light	Throttle Body FI	2-Way	PCV	0-50K miles (0-79K km)	477
Automobile/Small Truck	Ethanol	Light	Throttle Body FI	2-Way	PCV	51K-100K miles (80K-161K km)	478
Automobile/Small Truck	Ethanol	Light	Throttle Body FI	2-Way	PCV	>100K miles (>162K km)	479
Automobile/Small Truck	Ethanol	Medium	Throttle Body FI	2-Way	PCV	0-50K miles (0-79K km)	480
Automobile/Small Truck	Ethanol	Medium	Throttle Body FI	2-Way	PCV	51K-100K miles (80K-161K km)	481
Automobile/Small Truck	Ethanol	Medium	Throttle Body FI	2-Way	PCV	>100K miles (>162K km)	482
Automobile/Small Truck	Ethanol	Heavy	Throttle Body FI	2-Way	PCV	0-50K miles (0-79K km)	483
Automobile/Small Truck	Ethanol	Heavy	Throttle Body FI	2-Way	PCV	51K-100K miles (80K-161K km)	484
Automobile/Small Truck	Ethanol	Heavy	Throttle Body FI	2-Way	PCV	>100K miles (>162K km)	485
Automobile/Small Truck	Ethanol	Light	Throttle Body FI	2-Way/EGR	PCV	0-50K miles (0-79K km)	486
Automobile/Small Truck	Ethanol	Light	Throttle Body FI	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	487
Automobile/Small Truck	Ethanol	Light	Throttle Body FI	2-Way/EGR	PCV	>100K miles (>162K km)	488
Automobile/Small Truck	Ethanol	Medium	Throttle Body FI	2-Way/EGR	PCV	0-50K miles (0-79K km)	489
Automobile/Small Truck	Ethanol	Medium	Throttle Body FI	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	490
Automobile/Small Truck	Ethanol	Medium	Throttle Body FI	2-Way/EGR	PCV	>100K miles (>162K km)	491
Automobile/Small Truck	Ethanol	Heavy	Throttle Body FI	2-Way/EGR	PCV	0-50K miles (0-79K km)	492
Automobile/Small Truck	Ethanol	Heavy	Throttle Body FI	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	493
Automobile/Small Truck	Ethanol	Heavy	Throttle Body FI	2-Way/EGR	PCV	>100K miles (>162K km)	494
Automobile/Small Truck	Ethanol	Light	Throttle Body FI	3-Way	PCV	0-50K miles (0-79K km)	495
Automobile/Small Truck	Ethanol	Light	Throttle Body FI	3-Way	PCV	51K-100K miles (80K-161K km)	496
Automobile/Small Truck	Ethanol	Light	Throttle Body FI	3-Way	PCV	>100K miles (>162K km)	497
Automobile/Small Truck	Ethanol	Medium	Throttle Body FI	3-Way	PCV	0-50K miles (0-79K km)	498
Automobile/Small Truck	Ethanol	Medium	Throttle Body FI	3-Way	PCV	51K-100K miles (80K-161K km)	499
Automobile/Small Truck	Ethanol	Medium	Throttle Body FI	3-Way	PCV	>100K miles (>162K km)	500
Automobile/Small Truck	Ethanol	Heavy	Throttle Body FI	3-Way	PCV	0-50K miles (0-79K km)	501
Automobile/Small Truck	Ethanol	Heavy	Throttle Body FI	3-Way	PCV	51K-100K miles (80K-161K km)	502
Automobile/Small Truck	Ethanol	Heavy	Throttle Body FI	3-Way	PCV	>100K miles (>162K km)	503
Automobile/Small Truck	Ethanol	Light	Throttle Body FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	504
Automobile/Small Truck	Ethanol	Light	Throttle Body FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	505
Automobile/Small Truck	Ethanol	Light	Throttle Body FI	3-Way/EGR	PCV	>100K miles (>162K km)	506
Automobile/Small Truck	Ethanol	Medium	Throttle Body FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	507
Automobile/Small Truck	Ethanol	Medium	Throttle Body FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	508
Automobile/Small Truck	Ethanol	Medium	Throttle Body FI	3-Way/EGR	PCV	>100K miles (>162K km)	509
Automobile/Small Truck	Ethanol	Heavy	Throttle Body FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	510
Automobile/Small Truck	Ethanol	Heavy	Throttle Body FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	511
Automobile/Small Truck	Ethanol	Heavy	Throttle Body FI	3-Way/EGR	PCV	>100K miles (>162K km)	512
Automobile/Small Truck	Ethanol	Light	Fuel Injection	3-Way	PCV	0-50K miles (0-79K km)	513
Automobile/Small Truck	Ethanol	Light	Fuel Injection	3-Way	PCV	51K-100K miles (80K-161K km)	514

Automobile/Small Truck	Ethanol	Light	Fuel Injection	3-Way	PCV	>100K miles (>162K km)	515
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	3-Way	PCV	0-50K miles (0-79K km)	516
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	3-Way	PCV	51K-100K miles (80K-161K km)	517
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	3-Way	PCV	>100K miles (>162K km)	518
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	3-Way	PCV	0-50K miles (0-79K km)	519
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	3-Way	PCV	51K-100K miles (80K-161K km)	520
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	3-Way	PCV	>100K miles (>162K km)	521
Automobile/Small Truck	Ethanol	Light	Fuel Injection	3-Way/EGR	PCV	0-50K miles (0-79K km)	522
Automobile/Small Truck	Ethanol	Light	Fuel Injection	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	523
Automobile/Small Truck	Ethanol	Light	Fuel Injection	3-Way/EGR	PCV	>100K miles (>162K km)	524
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	3-Way/EGR	PCV	0-50K miles (0-79K km)	525
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	526
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	3-Way/EGR	PCV	>100K miles (>162K km)	527
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	3-Way/EGR	PCV	0-50K miles (0-79K km)	528
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	529
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	3-Way/EGR	PCV	>100K miles (>162K km)	530
Automobile/Small Truck	Ethanol	Light	Fuel Injection	3-Way/EGR	PCV/Tank	0-50K miles (0-79K km)	531
Automobile/Small Truck	Ethanol	Light	Fuel Injection	3-Way/EGR	PCV/Tank	51K-100K miles (80K-161K km)	532
Automobile/Small Truck	Ethanol	Light	Fuel Injection	3-Way/EGR	PCV/Tank	>100K miles (>162K km)	533
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	3-Way/EGR	PCV/Tank	0-50K miles (0-79K km)	534
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	3-Way/EGR	PCV/Tank	51K-100K miles (80K-161K km)	535
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	3-Way/EGR	PCV/Tank	>100K miles (>162K km)	536
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	3-Way/EGR	PCV/Tank	0-50K miles (0-79K km)	537
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	3-Way/EGR	PCV/Tank	51K-100K miles (80K-161K km)	538
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	3-Way/EGR	PCV/Tank	>100K miles (>162K km)	539
Automobile/Small Truck	Ethanol	Light	Fuel Injection	LEV	PCV/Tank	0-50K miles (0-79K km)	540
Automobile/Small Truck	Ethanol	Light	Fuel Injection	LEV	PCV/Tank	51K-100K miles (80K-161K km)	541
Automobile/Small Truck	Ethanol	Light	Fuel Injection	LEV	PCV/Tank	>100K miles (>162K km)	542
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	LEV	PCV/Tank	0-50K miles (0-79K km)	543
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	LEV	PCV/Tank	51K-100K miles (80K-161K km)	544
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	LEV	PCV/Tank	>100K miles (>162K km)	545
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	LEV	PCV/Tank	0-50K miles (0-79K km)	546
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	LEV	PCV/Tank	51K-100K miles (80K-161K km)	547
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	LEV	PCV/Tank	>100K miles (>162K km)	548
Automobile/Small Truck	Ethanol	Light	Fuel Injection	ULEV	PCV/Tank	0-50K miles (0-79K km)	549
Automobile/Small Truck	Ethanol	Light	Fuel Injection	ULEV	PCV/Tank	51K-100K miles (80K-161K km)	550
Automobile/Small Truck	Ethanol	Light	Fuel Injection	ULEV	PCV/Tank	>100K miles (>162K km)	551
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	ULEV	PCV/Tank	0-50K miles (0-79K km)	552

Automobile/Small Truck	Ethanol	Medium	Fuel Injection	ULEV	PCV/Tank	51K-100K miles (80K-161K km)	553
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	ULEV	PCV/Tank	>100K miles (>162K km)	554
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	ULEV	PCV/Tank	0-50K miles (0-79K km)	555
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	ULEV	PCV/Tank	51K-100K miles (80K-161K km)	556
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	ULEV	PCV/Tank	>100K miles (>162K km)	557
Automobile/Small Truck	Ethanol	Light	Fuel Injection	SULEV	PCV/Tank	0-50K miles (0-79K km)	558
Automobile/Small Truck	Ethanol	Light	Fuel Injection	SULEV	PCV/Tank	51K-100K miles (80K-161K km)	559
Automobile/Small Truck	Ethanol	Light	Fuel Injection	SULEV	PCV/Tank	>100K miles (>162K km)	560
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	SULEV	PCV/Tank	0-50K miles (0-79K km)	561
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	SULEV	PCV/Tank	51K-100K miles (80K-161K km)	562
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	SULEV	PCV/Tank	>100K miles (>162K km)	563
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	SULEV	PCV/Tank	0-50K miles (0-79K km)	564
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	SULEV	PCV/Tank	51K-100K miles (80K-161K km)	565
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	SULEV	PCV/Tank	>100K miles (>162K km)	566
Automobile/Small Truck	Ethanol	Light	Fuel Injection	Hybrid	PCV/Tank	0-50K miles (0-79K km)	567
Automobile/Small Truck	Ethanol	Light	Fuel Injection	Hybrid	PCV/Tank	51K-100K miles (80K-161K km)	568
Automobile/Small Truck	Ethanol	Light	Fuel Injection	Hybrid	PCV/Tank	>100K miles (>162K km)	569
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	Hybrid	PCV/Tank	0-50K miles (0-79K km)	570
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	Hybrid	PCV/Tank	51K-100K miles (80K-161K km)	571
Automobile/Small Truck	Ethanol	Medium	Fuel Injection	Hybrid	PCV/Tank	>100K miles (>162K km)	572
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	Hybrid	PCV/Tank	0-50K miles (0-79K km)	573
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	Hybrid	PCV/Tank	51K-100K miles (80K-161K km)	574
Automobile/Small Truck	Ethanol	Heavy	Fuel Injection	Hybrid	PCV/Tank	>100K miles (>162K km)	575
Automobile/Small Truck	Diesel	Light	Pre-Chamber Inject.	None	None	0-50K miles (0-79K km)	576
Automobile/Small Truck	Diesel	Light	Pre-Chamber Inject.	None	None	51K-100K miles (80K-161K km)	577
Automobile/Small Truck	Diesel	Light	Pre-Chamber Inject.	None	None	>100K miles (>162K km)	578
Automobile/Small Truck	Diesel	Medium	Pre-Chamber Inject.	None	None	0-50K miles (0-79K km)	579
Automobile/Small Truck	Diesel	Medium	Pre-Chamber Inject.	None	None	51K-100K miles (80K-161K km)	580
Automobile/Small Truck	Diesel	Medium	Pre-Chamber Inject.	None	None	>100K miles (>162K km)	581
Automobile/Small Truck	Diesel	Heavy	Pre-Chamber Inject.	None	None	0-50K miles (0-79K km)	582
Automobile/Small Truck	Diesel	Heavy	Pre-Chamber Inject.	None	None	51K-100K miles (80K-161K km)	583
Automobile/Small Truck	Diesel	Heavy	Pre-Chamber Inject.	None	None	>100K miles (>162K km)	584

Automobile/Small Truck	Diesel	Light	Pre-Chamber Inject.	Improved	None	0-50K miles (0-79K km)	585
Automobile/Small Truck	Diesel	Light	Pre-Chamber Inject.	Improved	None	51K-100K miles (80K-161K km)	586
Automobile/Small Truck	Diesel	Light	Pre-Chamber Inject.	Improved	None	>100K miles (>162K km)	587
Automobile/Small Truck	Diesel	Medium	Pre-Chamber Inject.	Improved	None	0-50K miles (0-79K km)	588
Automobile/Small Truck	Diesel	Medium	Pre-Chamber Inject.	Improved	None	51K-100K miles (80K-161K km)	589
Automobile/Small Truck	Diesel	Medium	Pre-Chamber Inject.	Improved	None	>100K miles (>162K km)	590
Automobile/Small Truck	Diesel	Heavy	Pre-Chamber Inject.	Improved	None	0-50K miles (0-79K km)	591
Automobile/Small Truck	Diesel	Heavy	Pre-Chamber Inject.	Improved	None	51K-100K miles (80K-161K km)	592
Automobile/Small Truck	Diesel	Heavy	Pre-Chamber Inject.	Improved	None	>100K miles (>162K km)	593
Automobile/Small Truck	Diesel	Light	Direct Injection	EGR+Improv	None	0-50K miles (0-79K km)	594
Automobile/Small Truck	Diesel	Light	Direct Injection	EGR+Improv	None	51K-100K miles (80K-161K km)	595
Automobile/Small Truck	Diesel	Light	Direct Injection	EGR+Improv	None	>100K miles (>162K km)	596
Automobile/Small Truck	Diesel	Medium	Direct Injection	EGR+Improv	None	0-50K miles (0-79K km)	597
Automobile/Small Truck	Diesel	Medium	Direct Injection	EGR+Improv	None	51K-100K miles (80K-161K km)	598
Automobile/Small Truck	Diesel	Medium	Direct Injection	EGR+Improv	None	>100K miles (>162K km)	599
Automobile/Small Truck	Diesel	Heavy	Direct Injection	EGR+Improv	None	0-50K miles (0-79K km)	600
Automobile/Small Truck	Diesel	Heavy	Direct Injection	EGR+Improv	None	51K-100K miles (80K-161K km)	601
Automobile/Small Truck	Diesel	Heavy	Direct Injection	EGR+Improv	None	>100K miles (>162K km)	602
Automobile/Small Truck	Diesel	Light	Injection	Particulate	None	0-50K miles (0-79K km)	603
Automobile/Small Truck	Diesel	Light	Injection	Particulate	None	51K-100K miles (80K-161K km)	604
Automobile/Small Truck	Diesel	Light	Injection	Particulate	None	>100K miles (>162K km)	605
Automobile/Small Truck	Diesel	Medium	Injection	Particulate	None	0-50K miles (0-79K km)	606
Automobile/Small Truck	Diesel	Medium	Injection	Particulate	None	51K-100K miles (80K-161K km)	607
Automobile/Small Truck	Diesel	Medium	Injection	Particulate	None	>100K miles (>162K km)	608
Automobile/Small Truck	Diesel	Heavy	Injection	Particulate	None	0-50K miles (0-79K km)	609
Automobile/Small Truck	Diesel	Heavy	Injection	Particulate	None	51K-100K miles (80K-161K km)	610
Automobile/Small Truck	Diesel	Heavy	Injection	Particulate	None	>100K miles (>162K km)	611
Automobile/Small Truck	Diesel	Light	Injection	Particulate/N Ox	None	0-50K miles (0-79K km)	612
Automobile/Small Truck	Diesel	Light	Injection	Particulate/N Ox	None	51K-100K miles (80K-161K km)	613
Automobile/Small Truck	Diesel	Light	Injection	Particulate/N Ox	None	>100K miles (>162K km)	614

Automobile/Small Truck	Diesel	Medium	Injection	Particulate/N Ox	None	0-50K miles (0-79K km)	615
Automobile/Small Truck	Diesel	Medium	Injection	Particulate/N Ox	None	51K-100K miles (80K-161K km)	616
Automobile/Small Truck	Diesel	Medium	Injection	Particulate/N Ox	None	>100K miles (>162K km)	617
Automobile/Small Truck	Diesel	Heavy	Injection	Particulate/N Ox	None	0-50K miles (0-79K km)	618
Automobile/Small Truck	Diesel	Heavy	Injection	Particulate/N Ox	None	51K-100K miles (80K-161K km)	619
Automobile/Small Truck	Diesel	Heavy	Injection	Particulate/N Ox	None	>100K miles (>162K km)	620
Automobile/Small Truck	Diesel	Light	Injection	Hybrid	None	0-50K miles (0-79K km)	621
Automobile/Small Truck	Diesel	Light	Injection	Hybrid	None	51K-100K miles (80K-161K km)	622
Automobile/Small Truck	Diesel	Light	Injection	Hybrid	None	>100K miles (>162K km)	623
Automobile/Small Truck	Diesel	Medium	Injection	Hybrid	None	0-50K miles (0-79K km)	624
Automobile/Small Truck	Diesel	Medium	Injection	Hybrid	None	51K-100K miles (80K-161K km)	625
Automobile/Small Truck	Diesel	Medium	Injection	Hybrid	None	>100K miles (>162K km)	626
Automobile/Small Truck	Diesel	Heavy	Injection	Hybrid	None	0-50K miles (0-79K km)	627
Automobile/Small Truck	Diesel	Heavy	Injection	Hybrid	None	51K-100K miles (80K-161K km)	628
Automobile/Small Truck	Diesel	Heavy	Injection	Hybrid	None	>100K miles (>162K km)	629
Truck/Bus	Gasoline	Light	Carburetor	None	PCV	0-50K miles (0-79K km)	630
Truck/Bus	Gasoline	Light	Carburetor	None	PCV	51K-100K miles (80K-161K km)	631
Truck/Bus	Gasoline	Light	Carburetor	None	PCV	>100K miles (>162K km)	632
Truck/Bus	Gasoline	Medium	Carburetor	None	PCV	0-50K miles (0-79K km)	633
Truck/Bus	Gasoline	Medium	Carburetor	None	PCV	51K-100K miles (80K-161K km)	634
Truck/Bus	Gasoline	Medium	Carburetor	None	PCV	>100K miles (>162K km)	635
Truck/Bus	Gasoline	Heavy	Carburetor	None	PCV	0-50K miles (0-79K km)	636
Truck/Bus	Gasoline	Heavy	Carburetor	None	PCV	51K-100K miles (80K-161K km)	637
Truck/Bus	Gasoline	Heavy	Carburetor	None	PCV	>100K miles (>162K km)	638
Truck/Bus	Gasoline	Light	Carburetor	2-Way	PCV	0-50K miles (0-79K km)	639
Truck/Bus	Gasoline	Light	Carburetor	2-Way	PCV	51K-100K miles (80K-161K km)	640
Truck/Bus	Gasoline	Light	Carburetor	2-Way	PCV	>100K miles (>162K km)	641
Truck/Bus	Gasoline	Medium	Carburetor	2-Way	PCV	0-50K miles (0-79K km)	642
Truck/Bus	Gasoline	Medium	Carburetor	2-Way	PCV	51K-100K miles (80K-161K km)	643
Truck/Bus	Gasoline	Medium	Carburetor	2-Way	PCV	>100K miles (>162K km)	644
Truck/Bus	Gasoline	Heavy	Carburetor	2-Way	PCV	0-50K miles (0-79K km)	645
Truck/Bus	Gasoline	Heavy	Carburetor	2-Way	PCV	51K-100K miles (80K-161K km)	646
Truck/Bus	Gasoline	Heavy	Carburetor	2-Way	PCV	>100K miles (>162K km)	647

Truck/Bus	Gasoline	Light	Carburetor	2-Way/EGR	PCV	0-50K miles (0-79K km)	648
Truck/Bus	Gasoline	Light	Carburetor	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	649
Truck/Bus	Gasoline	Light	Carburetor	2-Way/EGR	PCV	>100K miles (>162K km)	650
Truck/Bus	Gasoline	Medium	Carburetor	2-Way/EGR	PCV	0-50K miles (0-79K km)	651
Truck/Bus	Gasoline	Medium	Carburetor	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	652
Truck/Bus	Gasoline	Medium	Carburetor	2-Way/EGR	PCV	>100K miles (>162K km)	653
Truck/Bus	Gasoline	Heavy	Carburetor	2-Way/EGR	PCV	0-50K miles (0-79K km)	654
Truck/Bus	Gasoline	Heavy	Carburetor	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	655
Truck/Bus	Gasoline	Heavy	Carburetor	2-Way/EGR	PCV	>100K miles (>162K km)	656
Truck/Bus	Gasoline	Light	Carburetor	3-Way	PCV	0-50K miles (0-79K km)	657
Truck/Bus	Gasoline	Light	Carburetor	3-Way	PCV	51K-100K miles (80K-161K km)	658
Truck/Bus	Gasoline	Light	Carburetor	3-Way	PCV	>100K miles (>162K km)	659
Truck/Bus	Gasoline	Medium	Carburetor	3-Way	PCV	0-50K miles (0-79K km)	660
Truck/Bus	Gasoline	Medium	Carburetor	3-Way	PCV	51K-100K miles (80K-161K km)	661
Truck/Bus	Gasoline	Medium	Carburetor	3-Way	PCV	>100K miles (>162K km)	662
Truck/Bus	Gasoline	Heavy	Carburetor	3-Way	PCV	0-50K miles (0-79K km)	663
Truck/Bus	Gasoline	Heavy	Carburetor	3-Way	PCV	51K-100K miles (80K-161K km)	664
Truck/Bus	Gasoline	Heavy	Carburetor	3-Way	PCV	>100K miles (>162K km)	665
Truck/Bus	Gasoline	Light	Carburetor	3-Way/EGR	PCV	0-50K miles (0-79K km)	666
Truck/Bus	Gasoline	Light	Carburetor	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	667
Truck/Bus	Gasoline	Light	Carburetor	3-Way/EGR	PCV	>100K miles (>162K km)	668
Truck/Bus	Gasoline	Medium	Carburetor	3-Way/EGR	PCV	0-50K miles (0-79K km)	669
Truck/Bus	Gasoline	Medium	Carburetor	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	670
Truck/Bus	Gasoline	Medium	Carburetor	3-Way/EGR	PCV	>100K miles (>162K km)	671
Truck/Bus	Gasoline	Heavy	Carburetor	3-Way/EGR	PCV	0-50K miles (0-79K km)	672
Truck/Bus	Gasoline	Heavy	Carburetor	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	673
Truck/Bus	Gasoline	Heavy	Carburetor	3-Way/EGR	PCV	>100K miles (>162K km)	674
Truck/Bus	Gasoline	Light	FI	none	PCV	0-50K miles (0-79K km)	675
Truck/Bus	Gasoline	Light	FI	none	PCV	51K-100K miles (80K-161K km)	676
Truck/Bus	Gasoline	Light	FI	none	PCV	>100K miles (>162K km)	677
Truck/Bus	Gasoline	Medium	FI	none	PCV	0-50K miles (0-79K km)	678
Truck/Bus	Gasoline	Medium	FI	none	PCV	51K-100K miles (80K-161K km)	679
Truck/Bus	Gasoline	Medium	FI	none	PCV	>100K miles (>162K km)	680
Truck/Bus	Gasoline	Heavy	FI	none	PCV	0-50K miles (0-79K km)	681
Truck/Bus	Gasoline	Heavy	FI	none	PCV	51K-100K miles (80K-161K km)	682
Truck/Bus	Gasoline	Heavy	FI	none	PCV	>100K miles (>162K km)	683
Truck/Bus	Gasoline	Light	FI	2-Way	PCV	0-50K miles (0-79K km)	684

Truck/Bus	Gasoline	Light	FI	2-Way	PCV	51K-100K miles (80K-161K km)	685
Truck/Bus	Gasoline	Light	FI	2-Way	PCV	>100K miles (>162K km)	686
Truck/Bus	Gasoline	Medium	FI	2-Way	PCV	0-50K miles (0-79K km)	687
Truck/Bus	Gasoline	Medium	FI	2-Way	PCV	51K-100K miles (80K-161K km)	688
Truck/Bus	Gasoline	Medium	FI	2-Way	PCV	>100K miles (>162K km)	689
Truck/Bus	Gasoline	Heavy	FI	2-Way	PCV	0-50K miles (0-79K km)	690
Truck/Bus	Gasoline	Heavy	FI	2-Way	PCV	51K-100K miles (80K-161K km)	691
Truck/Bus	Gasoline	Heavy	FI	2-Way	PCV	>100K miles (>162K km)	692
Truck/Bus	Gasoline	Light	FI	2-Way/EGR	PCV	0-50K miles (0-79K km)	693
Truck/Bus	Gasoline	Light	FI	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	694
Truck/Bus	Gasoline	Light	FI	2-Way/EGR	PCV	>100K miles (>162K km)	695
Truck/Bus	Gasoline	Medium	FI	2-Way/EGR	PCV	0-50K miles (0-79K km)	696
Truck/Bus	Gasoline	Medium	FI	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	697
Truck/Bus	Gasoline	Medium	FI	2-Way/EGR	PCV	>100K miles (>162K km)	698
Truck/Bus	Gasoline	Heavy	FI	2-Way/EGR	PCV	0-50K miles (0-79K km)	699
Truck/Bus	Gasoline	Heavy	FI	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	700
Truck/Bus	Gasoline	Heavy	FI	2-Way/EGR	PCV	>100K miles (>162K km)	701
Truck/Bus	Gasoline	Light	FI	3-Way	PCV	0-50K miles (0-79K km)	702
Truck/Bus	Gasoline	Light	FI	3-Way	PCV	51K-100K miles (80K-161K km)	703
Truck/Bus	Gasoline	Light	FI	3-Way	PCV	>100K miles (>162K km)	704
Truck/Bus	Gasoline	Medium	FI	3-Way	PCV	0-50K miles (0-79K km)	705
Truck/Bus	Gasoline	Medium	FI	3-Way	PCV	51K-100K miles (80K-161K km)	706
Truck/Bus	Gasoline	Medium	FI	3-Way	PCV	>100K miles (>162K km)	707
Truck/Bus	Gasoline	Heavy	FI	3-Way	PCV	0-50K miles (0-79K km)	708
Truck/Bus	Gasoline	Heavy	FI	3-Way	PCV	51K-100K miles (80K-161K km)	709
Truck/Bus	Gasoline	Heavy	FI	3-Way	PCV	>100K miles (>162K km)	710
Truck/Bus	Gasoline	Light	FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	711
Truck/Bus	Gasoline	Light	FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	712
Truck/Bus	Gasoline	Light	FI	3-Way/EGR	PCV	>100K miles (>162K km)	713
Truck/Bus	Gasoline	Medium	FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	714
Truck/Bus	Gasoline	Medium	FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	715
Truck/Bus	Gasoline	Medium	FI	3-Way/EGR	PCV	>100K miles (>162K km)	716
Truck/Bus	Gasoline	Heavy	FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	717
Truck/Bus	Gasoline	Heavy	FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	718
Truck/Bus	Gasoline	Heavy	FI	3-Way/EGR	PCV	>100K miles (>162K km)	719
Truck/Bus	Natural Gas	Light	Carburetor/Mixer	None	PCV	0-50K miles (0-79K km)	720
Truck/Bus	Natural Gas	Light	Carburetor/Mixer	None	PCV	51K-100K miles (80K-161K km)	721

Truck/Bus	Natural Gas	Light	Carburetor/Mixer	None	PCV	>100K miles (>162K km)	722
Truck/Bus	Natural Gas	Medium	Carburetor/Mixer	None	PCV	0-50K miles (0-79K km)	723
Truck/Bus	Natural Gas	Medium	Carburetor/Mixer	None	PCV	51K-100K miles (80K-161K km)	724
Truck/Bus	Natural Gas	Medium	Carburetor/Mixer	None	PCV	>100K miles (>162K km)	725
Truck/Bus	Natural Gas	Heavy	Carburetor/Mixer	None	PCV	0-50K miles (0-79K km)	726
Truck/Bus	Natural Gas	Heavy	Carburetor/Mixer	None	PCV	51K-100K miles (80K-161K km)	727
Truck/Bus	Natural Gas	Heavy	Carburetor/Mixer	None	PCV	>100K miles (>162K km)	728
Truck/Bus	Natural Gas	Light	Carburetor/Mixer	2-Way/EGR	PCV	0-50K miles (0-79K km)	729
Truck/Bus	Natural Gas	Light	Carburetor/Mixer	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	730
Truck/Bus	Natural Gas	Light	Carburetor/Mixer	2-Way/EGR	PCV	>100K miles (>162K km)	731
Truck/Bus	Natural Gas	Medium	Carburetor/Mixer	2-Way/EGR	PCV	0-50K miles (0-79K km)	732
Truck/Bus	Natural Gas	Medium	Carburetor/Mixer	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	733
Truck/Bus	Natural Gas	Medium	Carburetor/Mixer	2-Way/EGR	PCV	>100K miles (>162K km)	734
Truck/Bus	Natural Gas	Heavy	Carburetor/Mixer	2-Way/EGR	PCV	0-50K miles (0-79K km)	735
Truck/Bus	Natural Gas	Heavy	Carburetor/Mixer	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	736
Truck/Bus	Natural Gas	Heavy	Carburetor/Mixer	2-Way/EGR	PCV	>100K miles (>162K km)	737
Truck/Bus	Natural Gas	Light	Carburetor/Mixer	3-Way/EGR	PCV	0-50K miles (0-79K km)	738
Truck/Bus	Natural Gas	Light	Carburetor/Mixer	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	739
Truck/Bus	Natural Gas	Light	Carburetor/Mixer	3-Way/EGR	PCV	>100K miles (>162K km)	740
Truck/Bus	Natural Gas	Medium	Carburetor/Mixer	3-Way/EGR	PCV	0-50K miles (0-79K km)	741
Truck/Bus	Natural Gas	Medium	Carburetor/Mixer	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	742
Truck/Bus	Natural Gas	Medium	Carburetor/Mixer	3-Way/EGR	PCV	>100K miles (>162K km)	743
Truck/Bus	Natural Gas	Heavy	Carburetor/Mixer	3-Way/EGR	PCV	0-50K miles (0-79K km)	744
Truck/Bus	Natural Gas	Heavy	Carburetor/Mixer	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	745
Truck/Bus	Natural Gas	Heavy	Carburetor/Mixer	3-Way/EGR	PCV	>100K miles (>162K km)	746
Truck/Bus	Natural Gas	Light	FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	747
Truck/Bus	Natural Gas	Light	FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	748
Truck/Bus	Natural Gas	Light	FI	3-Way/EGR	PCV	>100K miles (>162K km)	749
Truck/Bus	Natural Gas	Medium	FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	750
Truck/Bus	Natural Gas	Medium	FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	751
Truck/Bus	Natural Gas	Medium	FI	3-Way/EGR	PCV	>100K miles (>162K km)	752
Truck/Bus	Natural Gas	Heavy	FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	753
Truck/Bus	Natural Gas	Heavy	FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	754
Truck/Bus	Natural Gas	Heavy	FI	3-Way/EGR	PCV	>100K miles (>162K km)	755
Truck/Bus	Diesel	Light	Pre-Chamber Inject.	None	None	0-50K miles (0-79K km)	756
Truck/Bus	Diesel	Light	Pre-Chamber Inject.	None	None	51K-100K miles (80K-161K km)	757
Truck/Bus	Diesel	Light	Pre-Chamber Inject.	None	None	>100K miles (>162K km)	758

Truck/Bus	Diesel	Medium	Pre-Chamber Inject.	None	None	0-50K miles (0-79K km)	759
Truck/Bus	Diesel	Medium	Pre-Chamber Inject.	None	None	51K-100K miles (80K-161K km)	760
Truck/Bus	Diesel	Medium	Pre-Chamber Inject.	None	None	>100K miles (>162K km)	761
Truck/Bus	Diesel	Heavy	Pre-Chamber Inject.	None	None	0-50K miles (0-79K km)	762
Truck/Bus	Diesel	Heavy	Pre-Chamber Inject.	None	None	51K-100K miles (80K-161K km)	763
Truck/Bus	Diesel	Heavy	Pre-Chamber Inject.	None	None	>100K miles (>162K km)	764
Truck/Bus	Diesel	Light	Fuel Injection	Improved	None	0-50K miles (0-79K km)	765
Truck/Bus	Diesel	Light	Fuel Injection	Improved	None	51K-100K miles (80K-161K km)	766
Truck/Bus	Diesel	Light	Fuel Injection	Improved	None	>100K miles (>162K km)	767
Truck/Bus	Diesel	Medium	Fuel Injection	Improved	None	0-50K miles (0-79K km)	768
Truck/Bus	Diesel	Medium	Fuel Injection	Improved	None	51K-100K miles (80K-161K km)	769
Truck/Bus	Diesel	Medium	Fuel Injection	Improved	None	>100K miles (>162K km)	770
Truck/Bus	Diesel	Heavy	Fuel Injection	Improved	None	0-50K miles (0-79K km)	771
Truck/Bus	Diesel	Heavy	Fuel Injection	Improved	None	51K-100K miles (80K-161K km)	772
Truck/Bus	Diesel	Heavy	Fuel Injection	Improved	None	>100K miles (>162K km)	773
Truck/Bus	Diesel	Light	Fuel Injection	EGR+Improv	None	0-50K miles (0-79K km)	774
Truck/Bus	Diesel	Light	Fuel Injection	EGR+Improv	None	51K-100K miles (80K-161K km)	775
Truck/Bus	Diesel	Light	Fuel Injection	EGR+Improv	None	>100K miles (>162K km)	776
Truck/Bus	Diesel	Medium	Fuel Injection	EGR+Improv	None	0-50K miles (0-79K km)	777
Truck/Bus	Diesel	Medium	Fuel Injection	EGR+Improv	None	51K-100K miles (80K-161K km)	778
Truck/Bus	Diesel	Medium	Fuel Injection	EGR+Improv	None	>100K miles (>162K km)	779
Truck/Bus	Diesel	Heavy	Fuel Injection	EGR+Improv	None	0-50K miles (0-79K km)	780
Truck/Bus	Diesel	Heavy	Fuel Injection	EGR+Improv	None	51K-100K miles (80K-161K km)	781
Truck/Bus	Diesel	Heavy	Fuel Injection	EGR+Improv	None	>100K miles (>162K km)	782
Truck/Bus	Diesel	Light	Fuel Injection	Particulate	None	0-50K miles (0-79K km)	783
Truck/Bus	Diesel	Light	Fuel Injection	Particulate	None	51K-100K miles (80K-161K km)	784
Truck/Bus	Diesel	Light	Fuel Injection	Particulate	None	>100K miles (>162K km)	785
Truck/Bus	Diesel	Medium	Fuel Injection	Particulate	None	0-50K miles (0-79K km)	786
Truck/Bus	Diesel	Medium	Fuel Injection	Particulate	None	51K-100K miles (80K-161K km)	787
Truck/Bus	Diesel	Medium	Fuel Injection	Particulate	None	>100K miles (>162K km)	788
Truck/Bus	Diesel	Heavy	Fuel Injection	Particulate	None	0-50K miles (0-79K km)	789
Truck/Bus	Diesel	Heavy	Fuel Injection	Particulate	None	51K-100K miles (80K-161K km)	790
Truck/Bus	Diesel	Heavy	Fuel Injection	Particulate	None	>100K miles (>162K km)	791
Truck/Bus	Diesel	Light	Fuel Injection	Particulate/N Ox	None	0-50K miles (0-79K km)	792

Truck/Bus	Diesel	Light	Fuel Injection	Particulate/N Ox	None	51K-100K miles (80K-161K km)	793
Truck/Bus	Diesel	Light	Fuel Injection	Particulate/N Ox	None	>100K miles (>162K km)	794
Truck/Bus	Diesel	Medium	Fuel Injection	Particulate/N Ox	None	0-50K miles (0-79K km)	795
Truck/Bus	Diesel	Medium	Fuel Injection	Particulate/N Ox	None	51K-100K miles (80K-161K km)	796
Truck/Bus	Diesel	Medium	Fuel Injection	Particulate/N Ox	None	>100K miles (>162K km)	797
Truck/Bus	Diesel	Heavy	Fuel Injection	Particulate/N Ox	None	0-50K miles (0-79K km)	798
Truck/Bus	Diesel	Heavy	Fuel Injection	Particulate/N Ox	None	51K-100K miles (80K-161K km)	799
Truck/Bus	Diesel	Heavy	Fuel Injection	Particulate/N Ox	None	>100K miles (>162K km)	800
Truck/Bus	Diesel	Light	Fuel Injection	Hybrid	None	0-50K miles (0-79K km)	801
Truck/Bus	Diesel	Light	Fuel Injection	Hybrid	None	51K-100K miles (80K-161K km)	802
Truck/Bus	Diesel	Light	Fuel Injection	Hybrid	None	>100K miles (>162K km)	803
Truck/Bus	Diesel	Medium	Fuel Injection	Hybrid	None	0-50K miles (0-79K km)	804
Truck/Bus	Diesel	Medium	Fuel Injection	Hybrid	None	51K-100K miles (80K-161K km)	805
Truck/Bus	Diesel	Medium	Fuel Injection	Hybrid	None	>100K miles (>162K km)	806
Truck/Bus	Diesel	Heavy	Fuel Injection	Hybrid	None	0-50K miles (0-79K km)	807
Truck/Bus	Diesel	Heavy	Fuel Injection	Hybrid	None	51K-100K miles (80K-161K km)	808
Truck/Bus	Diesel	Heavy	Fuel Injection	Hybrid	None	>100K miles (>162K km)	809
Truck/Bus	Ethanol	Light	Carburetor	None	PCV	0-50K miles (0-79K km)	810
Truck/Bus	Ethanol	Light	Carburetor	None	PCV	51K-100K miles (80K-161K km)	811
Truck/Bus	Ethanol	Light	Carburetor	None	PCV	>100K miles (>162K km)	812
Truck/Bus	Ethanol	Medium	Carburetor	None	PCV	0-50K miles (0-79K km)	813
Truck/Bus	Ethanol	Medium	Carburetor	None	PCV	51K-100K miles (80K-161K km)	814
Truck/Bus	Ethanol	Medium	Carburetor	None	PCV	>100K miles (>162K km)	815
Truck/Bus	Ethanol	Heavy	Carburetor	None	PCV	0-50K miles (0-79K km)	816
Truck/Bus	Ethanol	Heavy	Carburetor	None	PCV	51K-100K miles (80K-161K km)	817
Truck/Bus	Ethanol	Heavy	Carburetor	None	PCV	>100K miles (>162K km)	818
Truck/Bus	Ethanol	Light	Carburetor	2-Way/EGR	PCV	0-50K miles (0-79K km)	819
Truck/Bus	Ethanol	Light	Carburetor	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	820
Truck/Bus	Ethanol	Light	Carburetor	2-Way/EGR	PCV	>100K miles (>162K km)	821
Truck/Bus	Ethanol	Medium	Carburetor	2-Way/EGR	PCV	0-50K miles (0-79K km)	822
Truck/Bus	Ethanol	Medium	Carburetor	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	823
Truck/Bus	Ethanol	Medium	Carburetor	2-Way/EGR	PCV	>100K miles (>162K km)	824

Truck/Bus	Ethanol	Heavy	Carburetor	2-Way/EGR	PCV	0-50K miles (0-79K km)	825
Truck/Bus	Ethanol	Heavy	Carburetor	2-Way/EGR	PCV	51K-100K miles (80K-161K km)	826
Truck/Bus	Ethanol	Heavy	Carburetor	2-Way/EGR	PCV	>100K miles (>162K km)	827
Truck/Bus	Ethanol	Light	Carburetor	3-Way/EGR	PCV	0-50K miles (0-79K km)	828
Truck/Bus	Ethanol	Light	Carburetor	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	829
Truck/Bus	Ethanol	Light	Carburetor	3-Way/EGR	PCV	>100K miles (>162K km)	830
Truck/Bus	Ethanol	Medium	Carburetor	3-Way/EGR	PCV	0-50K miles (0-79K km)	831
Truck/Bus	Ethanol	Medium	Carburetor	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	832
Truck/Bus	Ethanol	Medium	Carburetor	3-Way/EGR	PCV	>100K miles (>162K km)	833
Truck/Bus	Ethanol	Heavy	Carburetor	3-Way/EGR	PCV	0-50K miles (0-79K km)	834
Truck/Bus	Ethanol	Heavy	Carburetor	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	835
Truck/Bus	Ethanol	Heavy	Carburetor	3-Way/EGR	PCV	>100K miles (>162K km)	836
Truck/Bus	Ethanol	Light	FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	837
Truck/Bus	Ethanol	Light	FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	838
Truck/Bus	Ethanol	Light	FI	3-Way/EGR	PCV	>100K miles (>162K km)	839
Truck/Bus	Ethanol	Medium	FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	840
Truck/Bus	Ethanol	Medium	FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	841
Truck/Bus	Ethanol	Medium	FI	3-Way/EGR	PCV	>100K miles (>162K km)	842
Truck/Bus	Ethanol	Heavy	FI	3-Way/EGR	PCV	0-50K miles (0-79K km)	843
Truck/Bus	Ethanol	Heavy	FI	3-Way/EGR	PCV	51K-100K miles (80K-161K km)	844
Truck/Bus	Ethanol	Heavy	FI	3-Way/EGR	PCV	>100K miles (>162K km)	845
MotorCycle	Gasoline	N/A	2-Cycle	None	None	0-50K miles (0-79K km)	846
MotorCycle	Gasoline	N/A	2-Cycle	None	None	51K-100K miles (80K-161K km)	847
MotorCycle	Gasoline	N/A	2-Cycle	None	None	>100K miles (>162K km)	848
MotorCycle	Gasoline	N/A	4-Cycle, Carb	None	None	0-50K miles (0-79K km)	849
MotorCycle	Gasoline	N/A	4-Cycle, Carb	None	None	51K-100K miles (80K-161K km)	850
MotorCycle	Gasoline	N/A	4-Cycle, Carb	None	None	>100K miles (>162K km)	851
MotorCycle	Gasoline	N/A	4-Cycle, Carb	Catalyst	None	0-50K miles (0-79K km)	852
MotorCycle	Gasoline	N/A	4-Cycle, Carb	Catalyst	None	51K-100K miles (80K-161K km)	853
MotorCycle	Gasoline	N/A	4-Cycle, Carb	Catalyst	None	>100K miles (>162K km)	854
MotorCycle	Gasoline	N/A	4-Cycle, FI	None	None	0-50K miles (0-79K km)	855
MotorCycle	Gasoline	N/A	4-Cycle, FI	None	None	51K-100K miles (80K-161K km)	856
MotorCycle	Gasoline	N/A	4-Cycle, FI	None	None	>100K miles (>162K km)	857
MotorCycle	Gasoline	N/A	4-Cycle, FI	Catalyst	None	0-50K miles (0-79K km)	858
MotorCycle	Gasoline	N/A	4-Cycle, FI	Catalyst	None	51K-100K miles (80K-161K km)	859
MotorCycle	Gasoline	N/A	4-Cycle, FI	Catalyst	None	>100K miles (>162K km)	860

MotorCycle	Ethanol	N/A	2-Cycle	None	None	0-50K miles (0-79K km)	861
MotorCycle	Ethanol	N/A	2-Cycle	None	None	51K-100K miles (80K-161K km)	862
MotorCycle	Ethanol	N/A	2-Cycle	None	None	>100K miles (>162K km)	863
MotorCycle	Ethanol	N/A	4-Cycle	None	None	0-50K miles (0-79K km)	864
MotorCycle	Ethanol	N/A	4-Cycle	None	None	51K-100K miles (80K-161K km)	865
MotorCycle	Ethanol	N/A	4-Cycle	None	None	>100K miles (>162K km)	866
MotorCycle	Ethanol	N/A	4-Cycle	Catalyst	None	0-50K miles (0-79K km)	867
MotorCycle	Ethanol	N/A	4-Cycle	Catalyst	None	51K-100K miles (80K-161K km)	868
MotorCycle	Ethanol	N/A	4-Cycle	Catalyst	None	>100K miles (>162K km)	869
Zero Emissions Vehicle	N/A	N/A	N/A	N/A	N/A	N/A	870

Appendix C

Distribution of Vehicle Technologies Based on Video and Parked Vehicle Data Collected During this Study

Table C.1 Overall Santiago Fleet Activity Distribution

Fleet: Overall Santiago Fleet/2002 (Covers entire metropolitan area)

Description	Fuel	Weight	Air/Fuel Control	Exhaust Control	Evaporative Control	Age	Index	Activity Fraction Standard Vehicles	Fraction with AC Standard Vehicles	Activity Fraction Multi-Stop Vehicles	Fraction with AC Multi-Stop Vehicles
Auto/Sml Truck	Gasoline	Light	Carburetor	none	PCV	0-50K miles (0-79K km)	0	0.0010	0.0000		
Auto/Sml Truck	Gasoline	Light	Carburetor	none	PCV	51K-100K miles (80K-161K km)	1	0.0225	0.0435		
Auto/Sml Truck	Gasoline	Light	Carburetor	none	PCV	>100K miles (>162K km)	2	0.0421	0.0465		
Auto/Sml Truck	Gasoline	Medium	Carburetor	none	PCV	0-50K miles (0-79K km)	3	0.0029	0.0000		
Auto/Sml Truck	Gasoline	Medium	Carburetor	none	PCV	51K-100K miles (80K-161K km)	4	0.0245	0.0800		
Auto/Sml Truck	Gasoline	Medium	Carburetor	none	PCV	>100K miles (>162K km)	5	0.0352	0.1667	0.0045	0.0000
Auto/Sml Truck	Gasoline	Heavy	Carburetor	none	PCV	0-50K miles (0-79K km)	6	0.0010	0.0000		
Auto/Sml Truck	Gasoline	Heavy	Carburetor	none	PCV	51K-100K miles (80K-161K km)	7				
Auto/Sml Truck	Gasoline	Heavy	Carburetor	none	PCV	>100K miles (>162K km)	8	0.0078	0.0000		
Auto/Sml Truck	Gasoline	Light	Single Pt FI	2-Way	PCV	0-50K miles (0-79K km)	63	0.0010	0.0000		
Auto/Sml Truck	Gasoline	Light	Single Pt FI	2-Way	PCV	51K-100K miles (80K-161K km)	64	0.0049	0.2000		
Auto/Sml Truck	Gasoline	Light	Single Pt FI	2-Way	PCV	>100K miles (>162K km)	65				
Auto/Sml Truck	Gasoline	Medium	Single Pt FI	2-Way	PCV	0-50K miles (0-79K km)	66	0.0020	0.5000		
Auto/Sml Truck	Gasoline	Medium	Single Pt FI	2-Way	PCV	51K-100K miles (80K-161K km)	67	0.0098	0.1000		
Auto/Sml Truck	Gasoline	Medium	Single Pt FI	2-Way	PCV	>100K miles (>162K km)	68	0.0039	0.2500		
Auto/Sml Truck	Gasoline	Heavy	Single Pt FI	2-Way	PCV	0-50K miles (0-79K km)	69	0.0010	1.0000		
Auto/Sml Truck	Gasoline	Heavy	Single Pt FI	2-Way	PCV	51K-100K miles (80K-161K km)	70	0.0010	1.0000		
Auto/Sml Truck	Gasoline	Heavy	Single Pt FI	2-Way	PCV	>100K miles (>162K km)	71	0.0020	0.5000		
Auto/Sml Truck	Gasoline	Light	Multi-Pt FI	3-Way	PCV	0-50K miles (0-79K km)	117	0.1175	0.1833		
Auto/Sml Truck	Gasoline	Light	Multi-Pt FI	3-Way	PCV	51K-100K miles (80K-161K km)	118	0.0705	0.0694		
Auto/Sml Truck	Gasoline	Light	Multi-Pt FI	3-Way	PCV	>100K miles (>162K km)	119	0.0078	0.0000		
Auto/Sml Truck	Gasoline	Medium	Multi-Pt FI	3-Way	PCV	0-50K miles (0-79K km)	120	0.2497	0.5020	0.0090	0.0000
Auto/Sml Truck	Gasoline	Medium	Multi-Pt FI	3-Way	PCV	51K-100K miles (80K-161K km)	121	0.1224	0.4640	0.0270	0.0000
Auto/Sml Truck	Gasoline	Medium	Multi-Pt FI	3-Way	PCV	>100K miles (>162K km)	122	0.0137	0.3571	0.0495	0.0000
Auto/Sml Truck	Gasoline	Heavy	Multi-Pt FI	3-Way	PCV	0-50K miles (0-79K km)	123	0.0196	0.9000		
Auto/Sml Truck	Gasoline	Heavy	Multi-Pt FI	3-Way	PCV	51K-100K miles (80K-161K km)	124	0.0069	0.5714		
Auto/Sml Truck	Gasoline	Heavy	Multi-Pt FI	3-Way	PCV	>100K miles (>162K km)	125	0.0010	0.0000		
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	576				
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	577				
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	none	none	>100K miles (>162K km)	578				
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	579				

Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	580				
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	none	none	>100K miles (>162K km)	581	0.0020	0.0000		
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	582				
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	583				
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	none	none	>100K miles (>162K km)	584	0.0010	0.0000		
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	Improved	none	0-50K miles (0-79K km)	585	0.0029	0.0000		
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	Improved	none	51K-100K miles (80K-161K km)	586				
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	Improved	none	>100K miles (>162K km)	587	0.0010	0.0000		
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	Improved	none	0-50K miles (0-79K km)	588	0.0108	0.0000		
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	Improved	none	51K-100K miles (80K-161K km)	589	0.0049	0.0000		
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	Improved	none	>100K miles (>162K km)	590				
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	Improved	none	0-50K miles (0-79K km)	591	0.0010	0.0000		
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	Improved	none	51K-100K miles (80K-161K km)	592				
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	Improved	none	>100K miles (>162K km)	593	0.0010	0.0000		
Truck/Bus	Diesel	Light	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	756	0.0033	0.0000	0.0012	0.0000
Truck/Bus	Diesel	Light	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	757	0.0031	0.0000	0.0012	0.0000
Truck/Bus	Diesel	Light	Pre-Chamber FI	none	none	>100K miles (>162K km)	758	0.0136	0.0000	0.0067	0.0000
Truck/Bus	Diesel	Medium	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	759	0.0033	0.0000	0.0005	0.0000
Truck/Bus	Diesel	Medium	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	760	0.0031	0.0000	0.0005	0.0000
Truck/Bus	Diesel	Medium	Pre-Chamber FI	none	none	>100K miles (>162K km)	761	0.0136	0.0000	0.0030	0.0000
Truck/Bus	Diesel	Heavy	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	762	0.0009	0.0000	0.0052	0.0000
Truck/Bus	Diesel	Heavy	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	763	0.0009	0.0000	0.0052	0.0000
Truck/Bus	Diesel	Heavy	Pre-Chamber FI	none	none	>100K miles (>162K km)	764	0.0052	0.0000	0.0296	0.0000
MotorCycle	Gasoline	N/A	2-Cycle	none	none	0-50K miles (0-79K km)	846				
MotorCycle	Gasoline	N/A	2-Cycle	none	none	51K-100K miles (80K-161K km)	847				
MotorCycle	Gasoline	N/A	2-Cycle	none	none	>100K miles (>162K km)	848				
MotorCycle	Gasoline	N/A	4-Cycle, Carb	none	none	0-50K miles (0-79K km)	849	0.0140	0.0000		
MotorCycle	Gasoline	N/A	4-Cycle, Carb	none	none	51K-100K miles (80K-161K km)	850				
MotorCycle	Gasoline	N/A	4-Cycle, Carb	none	none	>100K miles (>162K km)	851				

END

0.8570

0.1430

Compiled by CE-CERT/GSSR
06/12/02

Table C.2: Maipu District Fleet Activity Distribution

Fleet: Maipu District of Santiago Metropolitan Area/2002 (Lower Income Area)

Description	Fuel	Weight	Air/Fuel Control	Exhaust Control	Evaporative Control	Age	Index	Activity Fraction Standard Vehicles	Fraction with AC Standard Vehicles	Activity Fraction Multi-Stop Vehicles	Fraction with AC Multi-Stop Vehicles
Auto/Sml Truck	Gasoline	Light	Carburetor	none	PCV	0-50K miles (0-79K km)	0	0.0027	0.0000		
Auto/Sml Truck	Gasoline	Light	Carburetor	none	PCV	51K-100K miles (80K-161K km)	1	0.0299	0.0000		
Auto/Sml Truck	Gasoline	Light	Carburetor	none	PCV	>100K miles (>162K km)	2	0.0762	0.0714		
Auto/Sml Truck	Gasoline	Medium	Carburetor	none	PCV	0-50K miles (0-79K km)	3	0.0027	0.0000		
Auto/Sml Truck	Gasoline	Medium	Carburetor	none	PCV	51K-100K miles (80K-161K km)	4	0.0381	0.0000		
Auto/Sml Truck	Gasoline	Medium	Carburetor	none	PCV	>100K miles (>162K km)	5	0.0490	0.1111	0.0059	0.0000
Auto/Sml Truck	Gasoline	Heavy	Carburetor	none	PCV	0-50K miles (0-79K km)	6				
Auto/Sml Truck	Gasoline	Heavy	Carburetor	none	PCV	51K-100K miles (80K-161K km)	7				
Auto/Sml Truck	Gasoline	Heavy	Carburetor	none	PCV	>100K miles (>162K km)	8	0.0109	0.0000		
Auto/Sml Truck	Gasoline	Light	Single Pt FI	2-Way	PCV	0-50K miles (0-79K km)	63	0.0027	0.0000		
Auto/Sml Truck	Gasoline	Light	Single Pt FI	2-Way	PCV	51K-100K miles (80K-161K km)	64				
Auto/Sml Truck	Gasoline	Light	Single Pt FI	2-Way	PCV	>100K miles (>162K km)	65				
Auto/Sml Truck	Gasoline	Medium	Single Pt FI	2-Way	PCV	0-50K miles (0-79K km)	66				
Auto/Sml Truck	Gasoline	Medium	Single Pt FI	2-Way	PCV	51K-100K miles (80K-161K km)	67				
Auto/Sml Truck	Gasoline	Medium	Single Pt FI	2-Way	PCV	>100K miles (>162K km)	68	0.0027	0.0000		
Auto/Sml Truck	Gasoline	Heavy	Single Pt FI	2-Way	PCV	0-50K miles (0-79K km)	69				
Auto/Sml Truck	Gasoline	Heavy	Single Pt FI	2-Way	PCV	51K-100K miles (80K-161K km)	70				
Auto/Sml Truck	Gasoline	Heavy	Single Pt FI	2-Way	PCV	>100K miles (>162K km)	71	0.0027	1.0000		
Auto/Sml Truck	Gasoline	Light	Multi-Pt FI	3-Way	PCV	0-50K miles (0-79K km)	117	0.1252	0.0435		
Auto/Sml Truck	Gasoline	Light	Multi-Pt FI	3-Way	PCV	51K-100K miles (80K-161K km)	118	0.0979	0.0556		
Auto/Sml Truck	Gasoline	Light	Multi-Pt FI	3-Way	PCV	>100K miles (>162K km)	119	0.0109	0.0000		
Auto/Sml Truck	Gasoline	Medium	Multi-Pt FI	3-Way	PCV	0-50K miles (0-79K km)	120	0.1850	0.3529	0.0118	0.0000
Auto/Sml Truck	Gasoline	Medium	Multi-Pt FI	3-Way	PCV	51K-100K miles (80K-161K km)	121	0.0843	0.1613	0.0354	0.0000
Auto/Sml Truck	Gasoline	Medium	Multi-Pt FI	3-Way	PCV	>100K miles (>162K km)	122	0.0109	0.7500	0.0649	0.0000
Auto/Sml Truck	Gasoline	Heavy	Multi-Pt FI	3-Way	PCV	0-50K miles (0-79K km)	123	0.0054	0.5000		
Auto/Sml Truck	Gasoline	Heavy	Multi-Pt FI	3-Way	PCV	51K-100K miles (80K-161K km)	124	0.0027	0.0000		
Auto/Sml Truck	Gasoline	Heavy	Multi-Pt FI	3-Way	PCV	>100K miles (>162K km)	125				
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	576				
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	577				

Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	none	none	>100K miles (>162K km)	578					
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	579					
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	580					
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	none	none	>100K miles (>162K km)	581	0.0027		0.0000		
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	582					
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	583					
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	none	none	>100K miles (>162K km)	584					
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	Improved	none	0-50K miles (0-79K km)	585	0.0082		0.0000		
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	Improved	none	51K-100K miles (80K-161K km)	586					
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	Improved	none	>100K miles (>162K km)	587	0.0027		0.0000		
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	Improved	none	0-50K miles (0-79K km)	588	0.0218		0.0000		
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	Improved	none	51K-100K miles (80K-161K km)	589	0.0109		0.0000		
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	Improved	none	>100K miles (>162K km)	590					
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	Improved	none	0-50K miles (0-79K km)	591					
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	Improved	none	51K-100K miles (80K-161K km)	592					
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	Improved	none	>100K miles (>162K km)	593	0.0027		0.0000		
Truck/Bus	Diesel	Light	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	756	0.0038		0.0000	0.0012	0.0000
Truck/Bus	Diesel	Light	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	757	0.0036		0.0000	0.0012	0.0000
Truck/Bus	Diesel	Light	Pre-Chamber FI	none	none	>100K miles (>162K km)	758	0.0160		0.0000	0.0067	0.0000
Truck/Bus	Diesel	Medium	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	759	0.0038		0.0000	0.0012	0.0000
Truck/Bus	Diesel	Medium	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	760	0.0036		0.0000	0.0012	0.0000
Truck/Bus	Diesel	Medium	Pre-Chamber FI	none	none	>100K miles (>162K km)	761	0.0160		0.0000	0.0067	0.0000
Truck/Bus	Diesel	Heavy	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	762	0.0009		0.0000	0.0020	0.0000
Truck/Bus	Diesel	Heavy	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	763	0.0009		0.0000	0.0020	0.0000
Truck/Bus	Diesel	Heavy	Pre-Chamber FI	none	none	>100K miles (>162K km)	764	0.0052		0.0000	0.0111	0.0000
MotorCycle	Gasoline	N/A	2-Cycle	none	none	0-50K miles (0-79K km)	846					
MotorCycle	Gasoline	N/A	2-Cycle	none	none	51K-100K miles (80K-161K km)	847					
MotorCycle	Gasoline	N/A	2-Cycle	none	none	>100K miles (>162K km)	848					
MotorCycle	Gasoline	N/A	4-Cycle, Carb	none	none	0-50K miles (0-79K km)	849	0.0060		0.0000		
MotorCycle	Gasoline	N/A	4-Cycle, Carb	none	none	51K-100K miles (80K-161K km)	850					
MotorCycle	Gasoline	N/A	4-Cycle, Carb	none	none	>100K miles (>162K km)	851					

END

0.8490

0.1510

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06/12/02

Table C.3: Santiago District Fleet Activity Distribution

Fleet: Central Santiago District/2002 (Downtown/Commercial Area)

Description	Fuel	Weight	Air/Fuel Control	Exhaust Control	Evaporative Control	Age	Index	Activity Fraction Standard Vehicles	Fraction with AC Standard Vehicles	Activity Fraction Multi-Stop Vehicles	Fraction with AC Multi-Stop Vehicles
Auto/Sml Truck	Gasoline	Light	Carburetor	none	PCV	0-50K miles (0-79K km)	0				
Auto/Sml Truck	Gasoline	Light	Carburetor	none	PCV	51K-100K miles (80K-161K km)	1	0.0136	0.0000		
Auto/Sml Truck	Gasoline	Light	Carburetor	none	PCV	>100K miles (>162K km)	2	0.0273	0.0000		
Auto/Sml Truck	Gasoline	Medium	Carburetor	none	PCV	0-50K miles (0-79K km)	3				
Auto/Sml Truck	Gasoline	Medium	Carburetor	none	PCV	51K-100K miles (80K-161K km)	4	0.0238	0.1429		
Auto/Sml Truck	Gasoline	Medium	Carburetor	none	PCV	>100K miles (>162K km)	5	0.0409	0.3333	0.0044	0.0000
Auto/Sml Truck	Gasoline	Heavy	Carburetor	none	PCV	0-50K miles (0-79K km)	6				
Auto/Sml Truck	Gasoline	Heavy	Carburetor	none	PCV	51K-100K miles (80K-161K km)	7				
Auto/Sml Truck	Gasoline	Heavy	Carburetor	none	PCV	>100K miles (>162K km)	8	0.0068	0.0000		
Auto/Sml Truck	Gasoline	Light	Single Pt FI	2-Way	PCV	0-50K miles (0-79K km)	63				
Auto/Sml Truck	Gasoline	Light	Single Pt FI	2-Way	PCV	51K-100K miles (80K-161K km)	64	0.0102	0.3333		
Auto/Sml Truck	Gasoline	Light	Single Pt FI	2-Way	PCV	>100K miles (>162K km)	65				
Auto/Sml Truck	Gasoline	Medium	Single Pt FI	2-Way	PCV	0-50K miles (0-79K km)	66	0.0068	0.5000		
Auto/Sml Truck	Gasoline	Medium	Single Pt FI	2-Way	PCV	51K-100K miles (80K-161K km)	67	0.0273	0.1250		
Auto/Sml Truck	Gasoline	Medium	Single Pt FI	2-Way	PCV	>100K miles (>162K km)	68	0.0034	0.0000		
Auto/Sml Truck	Gasoline	Heavy	Single Pt FI	2-Way	PCV	0-50K miles (0-79K km)	69	0.0034	1.0000		
Auto/Sml Truck	Gasoline	Heavy	Single Pt FI	2-Way	PCV	51K-100K miles (80K-161K km)	70				
Auto/Sml Truck	Gasoline	Heavy	Single Pt FI	2-Way	PCV	>100K miles (>162K km)	71	0.0034	0.0000		
Auto/Sml Truck	Gasoline	Light	Multi-Pt FI	3-Way	PCV	0-50K miles (0-79K km)	117	0.1260	0.1351		
Auto/Sml Truck	Gasoline	Light	Multi-Pt FI	3-Way	PCV	51K-100K miles (80K-161K km)	118	0.0647	0.0000		
Auto/Sml Truck	Gasoline	Light	Multi-Pt FI	3-Way	PCV	>100K miles (>162K km)	119	0.0102	0.0000		
Auto/Sml Truck	Gasoline	Medium	Multi-Pt FI	3-Way	PCV	0-50K miles (0-79K km)	120	0.2350	0.3768	0.0087	0.0000
Auto/Sml Truck	Gasoline	Medium	Multi-Pt FI	3-Way	PCV	51K-100K miles (80K-161K km)	121	0.1090	0.4688	0.0261	0.0000
Auto/Sml Truck	Gasoline	Medium	Multi-Pt FI	3-Way	PCV	>100K miles (>162K km)	122	0.0102	0.0000	0.0479	0.0000
Auto/Sml Truck	Gasoline	Heavy	Multi-Pt FI	3-Way	PCV	0-50K miles (0-79K km)	123	0.0102	1.0000		
Auto/Sml Truck	Gasoline	Heavy	Multi-Pt FI	3-Way	PCV	51K-100K miles (80K-161K km)	124	0.0034	1.0000		
Auto/Sml Truck	Gasoline	Heavy	Multi-Pt FI	3-Way	PCV	>100K miles (>162K km)	125	0.0034	0.0000		
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	576				

Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	577				
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	none	none	>100K miles (>162K km)	578				
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	579				
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	580				
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	none	none	>100K miles (>162K km)	581				
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	582				
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	583				
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	none	none	>100K miles (>162K km)	584	0.0034	0.0000		
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	Improved	none	0-50K miles (0-79K km)	585				
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	Improved	none	51K-100K miles (80K-161K km)	586				
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	Improved	none	>100K miles (>162K km)	587				
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	Improved	none	0-50K miles (0-79K km)	588	0.0034	0.0000		
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	Improved	none	51K-100K miles (80K-161K km)	589				
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	Improved	none	>100K miles (>162K km)	590				
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	Improved	none	0-50K miles (0-79K km)	591				
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	Improved	none	51K-100K miles (80K-161K km)	592				
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	Improved	none	>100K miles (>162K km)	593				
Truck/Bus	Diesel	Light	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	756	0.0046	0.0000	0.0001	0.0000
Truck/Bus	Diesel	Light	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	757	0.0043	0.0000	0.0001	0.0000
Truck/Bus	Diesel	Light	Pre-Chamber FI	none	none	>100K miles (>162K km)	758	0.0191	0.0000	0.0007	0.0000
Truck/Bus	Diesel	Medium	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	759	0.0046	0.0000	0.0004	0.0000
Truck/Bus	Diesel	Medium	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	760	0.0043	0.0000	0.0004	0.0000
Truck/Bus	Diesel	Medium	Pre-Chamber FI	none	none	>100K miles (>162K km)	761	0.0191	0.0000	0.0022	0.0000
Truck/Bus	Diesel	Heavy	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	762	0.0016	0.0000	0.0101	0.0000
Truck/Bus	Diesel	Heavy	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	763	0.0016	0.0000	0.0101	0.0000
Truck/Bus	Diesel	Heavy	Pre-Chamber FI	none	none	>100K miles (>162K km)	764	0.0089	0.0000	0.0577	0.0000
MotorCycle	Gasoline	N/A	2-Cycle	none	none	0-50K miles (0-79K km)	846				
MotorCycle	Gasoline	N/A	2-Cycle	none	none	51K-100K miles (80K-161K km)	847				
MotorCycle	Gasoline	N/A	2-Cycle	none	none	>100K miles (>162K km)	848				
MotorCycle	Gasoline	N/A	4-Cycle, Carb	none	none	0-50K miles (0-79K km)	849	0.0170	0.0000		
MotorCycle	Gasoline	N/A	4-Cycle, Carb	none	none	51K-100K miles (80K-161K km)	850				
MotorCycle	Gasoline	N/A	4-Cycle, Carb	none	none	>100K miles (>162K km)	851				

END

0.8310

0.1690

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06/12/02

Table C.4: Vitacura District Fleet Activity Data

Fleet: Vitacura District of Santiago Metropolitan Area/2002 (Upper Income Area)

Description	Fuel	Weight	Air/Fuel Control	Exhaust Control	Evaporative Control	Age	Index	Activity Fraction Standard Vehicles	Fraction with AC Standard Vehicles	Activity Fraction Multi-Stop Vehicles	Fraction with AC Multi-Stop Vehicles
Auto/Sml Truck	Gasoline	Light	Carburetor	none	PCV	0-50K miles (0-79K km)	0				
Auto/Sml Truck	Gasoline	Light	Carburetor	none	PCV	51K-100K miles (80K-161K km)	1	0.0224	0.1250		
Auto/Sml Truck	Gasoline	Light	Carburetor	none	PCV	>100K miles (>162K km)	2	0.0196	0.0000		
Auto/Sml Truck	Gasoline	Medium	Carburetor	none	PCV	0-50K miles (0-79K km)	3	0.0056	0.0000		
Auto/Sml Truck	Gasoline	Medium	Carburetor	none	PCV	51K-100K miles (80K-161K km)	4	0.0112	0.2500		
Auto/Sml Truck	Gasoline	Medium	Carburetor	none	PCV	>100K miles (>162K km)	5	0.0168	0.0000	0.0032	0.0000
Auto/Sml Truck	Gasoline	Heavy	Carburetor	none	PCV	0-50K miles (0-79K km)	6	0.0028	0.0000		
Auto/Sml Truck	Gasoline	Heavy	Carburetor	none	PCV	51K-100K miles (80K-161K km)	7				
Auto/Sml Truck	Gasoline	Heavy	Carburetor	none	PCV	>100K miles (>162K km)	8	0.0056	0.0000		
Auto/Sml Truck	Gasoline	Light	Single Pt FI	2-Way	PCV	0-50K miles (0-79K km)	63				
Auto/Sml Truck	Gasoline	Light	Single Pt FI	2-Way	PCV	51K-100K miles (80K-161K km)	64	0.0056	0.0000		
Auto/Sml Truck	Gasoline	Light	Single Pt FI	2-Way	PCV	>100K miles (>162K km)	65				
Auto/Sml Truck	Gasoline	Medium	Single Pt FI	2-Way	PCV	0-50K miles (0-79K km)	66				
Auto/Sml Truck	Gasoline	Medium	Single Pt FI	2-Way	PCV	51K-100K miles (80K-161K km)	67	0.0056	0.0000		
Auto/Sml Truck	Gasoline	Medium	Single Pt FI	2-Way	PCV	>100K miles (>162K km)	68	0.0056	0.5000		
Auto/Sml Truck	Gasoline	Heavy	Single Pt FI	2-Way	PCV	0-50K miles (0-79K km)	69				
Auto/Sml Truck	Gasoline	Heavy	Single Pt FI	2-Way	PCV	51K-100K miles (80K-161K km)	70	0.0028	1.0000		
Auto/Sml Truck	Gasoline	Heavy	Single Pt FI	2-Way	PCV	>100K miles (>162K km)	71				
Auto/Sml Truck	Gasoline	Light	Multi-Pt FI	3-Way	PCV	0-50K miles (0-79K km)	117	0.1036	0.4054		
Auto/Sml Truck	Gasoline	Light	Multi-Pt FI	3-Way	PCV	51K-100K miles (80K-161K km)	118	0.0476	0.1765		
Auto/Sml Truck	Gasoline	Light	Multi-Pt FI	3-Way	PCV	>100K miles (>162K km)	119	0.0028	0.0000		
Auto/Sml Truck	Gasoline	Medium	Multi-Pt FI	3-Way	PCV	0-50K miles (0-79K km)	120	0.3303	0.6610	0.0064	0.0000
Auto/Sml Truck	Gasoline	Medium	Multi-Pt FI	3-Way	PCV	51K-100K miles (80K-161K km)	121	0.1736	0.6129	0.0192	0.0000
Auto/Sml Truck	Gasoline	Medium	Multi-Pt FI	3-Way	PCV	>100K miles (>162K km)	122	0.0196	0.2857	0.0352	0.0000
Auto/Sml Truck	Gasoline	Heavy	Multi-Pt FI	3-Way	PCV	0-50K miles (0-79K km)	123	0.0420	0.9333		
Auto/Sml Truck	Gasoline	Heavy	Multi-Pt FI	3-Way	PCV	51K-100K miles (80K-161K km)	124	0.0140	0.6000		
Auto/Sml Truck	Gasoline	Heavy	Multi-Pt FI	3-Way	PCV	>100K miles (>162K km)	125				
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	576				
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	577				
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	none	none	>100K miles (>162K km)	578				
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	579				

Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	580				
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	none	none	>100K miles (>162K km)	581	0.0028	0.0000		
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	582				
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	583				
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	none	none	>100K miles (>162K km)	584				
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	Improved	none	0-50K miles (0-79K km)	585				
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	Improved	none	51K-100K miles (80K-161K km)	586				
Auto/Sml Truck	Diesel	Light	Pre-Chamber FI	Improved	none	>100K miles (>162K km)	587				
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	Improved	none	0-50K miles (0-79K km)	588	0.0056	0.0000		
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	Improved	none	51K-100K miles (80K-161K km)	589	0.0028	0.0000		
Auto/Sml Truck	Diesel	Medium	Pre-Chamber FI	Improved	none	>100K miles (>162K km)	590				
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	Improved	none	0-50K miles (0-79K km)	591	0.0028	0.0000		
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	Improved	none	51K-100K miles (80K-161K km)	592				
Auto/Sml Truck	Diesel	Heavy	Pre-Chamber FI	Improved	none	>100K miles (>162K km)	593				
Truck/Bus	Diesel	Light	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	756	0.0015	0.0000	0.0023	0.0000
Truck/Bus	Diesel	Light	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	757	0.0015	0.0000	0.0023	0.0000
Truck/Bus	Diesel	Light	Pre-Chamber FI	none	none	>100K miles (>162K km)	758	0.0065	0.0000	0.0133	0.0000
Truck/Bus	Diesel	Medium	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	759	0.0015	0.0000	0.0001	0.0000
Truck/Bus	Diesel	Medium	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	760	0.0015	0.0000	0.0001	0.0000
Truck/Bus	Diesel	Medium	Pre-Chamber FI	none	none	>100K miles (>162K km)	761	0.0065	0.0000	0.0007	0.0000
Truck/Bus	Diesel	Heavy	Pre-Chamber FI	none	none	0-50K miles (0-79K km)	762	0.0001	0.0000	0.0038	0.0000
Truck/Bus	Diesel	Heavy	Pre-Chamber FI	none	none	51K-100K miles (80K-161K km)	763	0.0001	0.0000	0.0038	0.0000
Truck/Bus	Diesel	Heavy	Pre-Chamber FI	none	none	>100K miles (>162K km)	764	0.0007	0.0000	0.0215	0.0000
MotorCycle	Gasoline	N/A	2-Cycle	none	none	0-50K miles (0-79K km)	846				
MotorCycle	Gasoline	N/A	2-Cycle	none	none	51K-100K miles (80K-161K km)	847				
MotorCycle	Gasoline	N/A	2-Cycle	none	none	>100K miles (>162K km)	848				
MotorCycle	Gasoline	N/A	4-Cycle, Carb	none	none	0-50K miles (0-79K km)	849	0.0170	0.0000		
MotorCycle	Gasoline	N/A	4-Cycle, Carb	none	none	51K-100K miles (80K-161K km)	850				
MotorCycle	Gasoline	N/A	4-Cycle, Carb	none	none	>100K miles (>162K km)	851				

END

0.8880

0.1120

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06/12/02

Table C-5: Parked Car Vehicle Distribution Data for Overall Santiago Metropolitan Region

Fuel	Weight	Air/Fuel Control	Exhaust Control	Evap. Control	Accumulated Use	Index	Fraction of Driving Normal Vehicles	Fraction with AC	Fraction of Driving Multi-Stop Vehicles	Fraction with AC Multi-Stop Vehicles
Gasoline	Light	Carburetor	None	PCV	0-79K km	0	0.0012	0.0000		
Gasoline	Light	Carburetor	None	PCV	80K-161K km	1	0.0283	0.0435		
Gasoline	Light	Carburetor	None	PCV	>162K km	2	0.0529	0.0465		

Gasoline	Medium	Carburetor	None	PCV	0-79K km	3	0.0037	0.0000		
Gasoline	Medium	Carburetor	None	PCV	80K-161K km	4	0.0308	0.0800		
Gasoline	Medium	Carburetor	None	PCV	>162K km	5	0.0443	0.1667	0.0500	0.0000
Gasoline	Heavy	Carburetor	None	PCV	0-79K km	6	0.0012	0.0000		
Gasoline	Heavy	Carburetor	None	PCV	80K-161K km	7	0.0000	0.0000		
Gasoline	Heavy	Carburetor	None	PCV	>162K km	8	0.0098	0.0000		
Gasoline	Light	Throttle Body FI	2-Way	PCV	0-79K km	45	0.0012	0.0000		
Gasoline	Light	Throttle Body FI	2-Way	PCV	80K-161K km	46	0.0062	0.2000		
Gasoline	Light	Throttle Body FI	2-Way	PCV	>162K km	47				
Gasoline	Medium	Throttle Body FI	2-Way	PCV	0-79K km	48	0.0025	0.5000		
Gasoline	Medium	Throttle Body FI	2-Way	PCV	80K-161K km	49	0.0123	0.1000		
Gasoline	Medium	Throttle Body FI	2-Way	PCV	>162K km	50	0.0049	0.2500		
Gasoline	Heavy	Throttle Body FI	2-Way	PCV	0-79K km	51	0.0012	1.0000		
Gasoline	Heavy	Throttle Body FI	2-Way	PCV	80K-161K km	52	0.0012	1.0000		
Gasoline	Heavy	Throttle Body FI	2-Way	PCV	>162K km	53	0.0025	0.5000		
Gasoline	Light	Fuel Injection	3-Way	PCV	0-79K km	81	0.1476	0.1833		
Gasoline	Light	Fuel Injection	3-Way	PCV	80K-161K km	82	0.0886	0.0694		
Gasoline	Light	Fuel Injection	3-Way	PCV	>162K km	83	0.0098	0.0000		
Gasoline	Medium	Fuel Injection	3-Way	PCV	0-79K km	84	0.3137	0.5020	0.1000	0.0000
Gasoline	Medium	Fuel Injection	3-Way	PCV	80K-161K km	85	0.1538	0.4640	0.3000	0.0000
Gasoline	Medium	Fuel Injection	3-Way	PCV	>162K km	86	0.0172	0.3571	0.5500	0.0000
Gasoline	Heavy	Fuel Injection	3-Way	PCV	0-79K km	87	0.0246	0.9000		
Gasoline	Heavy	Fuel Injection	3-Way	PCV	80K-161K km	88	0.0086	0.5714		
Gasoline	Heavy	Fuel Injection	3-Way	PCV	>162K km	89	0.0012	0.0000		
Diesel	Medium	Pre-Chamber Inject.	None	None	0-79K km	543				
Diesel	Medium	Pre-Chamber Inject.	None	None	80K-161K km	544				
Diesel	Medium	Pre-Chamber Inject.	None	None	>162K km	545	0.0025	0.0000		
Diesel	Heavy	Pre-Chamber Inject.	None	None	0-79K km	546				
Diesel	Heavy	Pre-Chamber Inject.	None	None	80K-161K km	547				
Diesel	Heavy	Pre-Chamber Inject.	None	None	>162K km	548	0.0012	0.0000		
Diesel	Light	Pre-Chamber Inject.	Improved	None	0-79K km	549	0.0037	0.0000		
Diesel	Light	Pre-Chamber Inject.	Improved	None	80K-161K km	550				
Diesel	Light	Pre-Chamber Inject.	Improved	None	>162K km	551	0.0012	0.0000		
Diesel	Medium	Pre-Chamber Inject.	Improved	None	0-79K km	552	0.0135	0.0000		
Diesel	Medium	Pre-Chamber Inject.	Improved	None	80K-161K km	553	0.0062	0.0000		
Diesel	Medium	Pre-Chamber Inject.	Improved	None	>162K km	554				
Diesel	Heavy	Pre-Chamber Inject.	Improved	None	0-79K km	555	0.0012	0.0000		
Diesel	Heavy	Pre-Chamber Inject.	Improved	None	80K-161K km	556				
Diesel	Heavy	Pre-Chamber Inject.	Improved	None	>162K km	557	0.0012	0.0000		
						Totals:	1.0000		1.0000	