EPA-460/3-73-002-b
June 1974

# IN-USE HEAVY DUTY GASOLINE TRUCK EMISSIONS PART II, SURVEILLANCE STUDY OF CONTROL EQUIPPED HEAVY-DUTY GASOLINE-POWERED VEHICLES

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air and Waste Management
Office of Mobile Source Air Pollution Control
Certification and Surveillance Division
Ann Arbor, Michigan 48105

EPA-460/3-73-002-b

# IN-USE HEAVY DUTY GASOLINE TRUCK EMISSIONS PART II, SURVEILLANCE STUDY OF CONTROL EQUIPPED HEAVY-DUTY GASOLINE-POWERED VEHICLES


Prepared by

M.N. Ingalls, K.J. Springer

Southwest Research Institute
8500 Culebra Road
San Antonio, Texas 78284



Contract No. EHS 70-113

EPA Project Officer:

Gordon J. Kennedy

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air and Waste Management
Office of Mobile Source Air Pollution Control
Certification and Surveillance Division
Ann Arbor, Michigan 48105

June 1974

This report is issued by the Environmental Protection Agency to report technical data of interest to a limited number of readers. Copies are available free of charge to Federal employees, current contractors and grantees, and nonprofit organizations - as supplies permit - from the Air Pollution Technical Information Center, Environmental Protection Agency, Research Triangle Park, North Carolina 27711; or, for a fee, from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22151.

This report was furnished to the Environmental Protection Agency by Southwest Research Institute, San Antonio, Texas, in fulfillment of Contract No. EHS 70-113. The contents of this report are reproduced herein as received from the Southwest Research Institute. The opinions, findings, and conclusions expressed are those of the author and not necessarily those of the Environmental Protection Agency. Mention of company or product names is not to be considered as an endorsement by the Environmental Protection Agency.

Publication No. EPA-460/3-73-002-b

# ABSTRACT

This report covers two and one half years of periodic exhaust emission tests on a fleet of 1970 and 1971 gasoline powered trucks, over 6,000 lb gross vehicle weight in use in the San Antonio, Texas area. The fleet originally numbered 152 trucks, all of which were part of regular fleets owned by a variety of truck operators. The fleet owners were instructed to operate and maintain the trucks furnished for testing in the same manner as the rest of their fleet. Each truck received up to seven periodic tests for hydrocarbons, carbon monoxide, and nitric oxide during the 30-month surveillance period. The exhaust emission test used was a chassis dynamometer version of the nine-mode Federal test procedure for heavy-duty gasoline engine emission certification. To correlate the chassis dynamometer version with the stationary engine dynamometer version, 10 engines were tested on a stationary dynamometer, installed in their original truck chassis and tested on a chassis dynamometer.

The objectives of the study, to determine the effectiveness of the 1970 heavy-duty exhaust controls and determine their performance with time and mileage, were met. The first test on each truck was performed when it was new or nearly new. The percentage of trucks below the 1970 Federal standards for hydrocarbons and carbon monoxide was calculated for this first test round. A statistical analysis of the periodic tests was performed to determine the effects of time and mileage accumulation. Effects of timing, idle speed, engine model, transmission type, number of cylinders, and several other variables on emissions were also briefly investigated.

## FOREWORD

This project was originally initiated in June 1970 by the Inspection and Surveillance Branch, formerly part of the Division of Motor Vehicle Pollution Control at The Willow Run Airport, Ypsilanti, Michigan. The engineering effort on which this report is based was accomplished by Southwest Research Institute, 8500 Culebra Road, San Antonio, Texas under Contract No. EHS 70-113.

Mr. Karl J. Springer, Manager of Emissions Research Laboratory, Southwest Research Institute, was the Project Manager for this work. The principle engineers associated with this project were Mr. Melvin N. Ingalls and Mr. Clifford D. Tyree.

The initial laboratory test phase began in June 1970 and was to have been completed in January 1972. Contract Modification No. 2, dated January 11, 1972, expanded and extended the testing to be done under the contract. Surveillance inspection tests specified under the modified contract were completed in January 1974.

The Project Officer cognizant of this project was originally Mr. Charles Domke, Chief, Inspection and Surveillance Branch, Division of Motor Vehicle Pollution Control, which is now the Surveillance Branch, Certification and Surveillance Division, Office of Mobile Source Air Pollution Control, Environmental Protection Agency, 2565 Plymouth Road, Ann Arbor, Michigan 48105. Mr. John White of that office assumed Project Officer responsibility about midway through the project. Mr. Gordon Kennedy is presently the Project Officer.

This report completes the second and final phase of a long term study of exhaust emission characteristics of gasoline powered trucks above 6,000 lb gross vehicle weight. The report of Part I of the study, entitled "Mass Emissions from Trucks Operated Over a Road Course", was issued in February 1973 under the identifier number EPA-460/3-73-002A. This project was identified within Southwest Research Institute as No. 11-2862-001.

TABLE OF CONTENTS

TABLE OF CONTENTS (Con't)

LIST OF FIGURES

LIST OF FIGURES (Con't)

## LIST OF TABLES

# I. INTRODUCTION

According to the latest statistical information [1]*, all trucks comprise about 18 percent (21,209,000) of the total vehicles registered and burn approximately 28 percent of the gasoline consumed in the United States. From sales data[1], approximately 38 percent of the gasoline-powered trucks and buses sold are above 6,000 lb gross vehicle weight (GVW). Although there is less known about heavy-duty vehicles (HDV) than light-duty vehicles (cars) in their role as contributors to the total air pollution problem, the Environmental Protection Agency (EPA) has sponsored a continuing long-range investigation of HDV emissions at Southwest Research Institute.

## A. Background

This report covers 30 months of surveillance inspections of exhaust emission control equipped 1970-1971 heavy-duty vehicles.

Federal heavy-duty emission standards first became effective with the 1970 model year. To meet these standards, some form of emission control device(s)[9] was required. The need of the EPA for information regarding the effectiveness of these control devices in actual operation led to the surveillance study covered in this report. As this project drew heavily on the knowledge and experience gained in previous heavy-duty projects, a brief review of these projects is presented here.

Southwest Research Institute's Emissions Research Laboratory has been privileged to have conducted a major portion of the research with HDVs beginning in June 1967. This first effort was the acquisition of baseline emissions data from 150 gasoline and LPG fueled spark-ignited engine-powered trucks and buses using three experimental road-like chassis dynamometer procedures. Exhaust emissions for this project were obtained using a special truck version of the constant volume sampler (CVS) which permitted expression of contaminants on a mass basis. The results of the survey are contained in the SwRI final report [2] which concluded that the three proposed experimental non-constant speed cycles were not recommended for use in testing emissions from heavy-duty vehicles powered by spark-ignited engines. The findings of this study were summarized in AIChE and SAE papers[3, 4] which described the preparations and baseline data results, respectively.

The second major work in this continuing program compared hydrocarbon (HC), carbon monoxide (CO), and nitric oxide (NO)

---

* Superscript numbers in parentheses refer to the List of References at the end of this report.

emissions obtained in actual road driving to chassis dynamometer emissions obtained using the Federal nine-mode constant speed cycle (FTP) for six trucks of various sizes and makes. Using a CVS, the current Federal cycle was subjected to a number of modifications to investigate what improvements might be made to make the Federal procedure agree more with road operation [5].

The third in this series of projects, sponsored by the Environmental Protection Agency, was completed in April 1972. The first phase of this three-phase project was a broad emission characterization study of four 1969 trucks under a wide variety of engine speeds, power levels, and both stationary and chassis-operated engines. Emission rates of hydrocarbons, carbon monoxide, and nitric oxide were expressed in mass units of grams per minute, per pound of fuel and per bhp-hr. In addition to the steady-state emission maps, a number of transient accelerations and decelerations were studied using a variety of simulated vehicle inertias. The second phase was a four-vehicle study of the effect of four different road routes on emission rates. The road routes were sufficiently different to be distinct, yet were considered representative of actual truck driving. The final phase was a nine-truck evaluation of an experimental 23-mode test procedure using both stationary-and chassis-operated engines. The three phases of this project generated a large body of data that is summarized in the report[6] and included in some detail in a number of appendices.

B. Scope

This report covers the 30 months (7 inspection rounds) of operation of the surveillance fleet. The results discussed in the report are for the surveillance tests and stationary-to-chassis dynamometer comparison tests only. The results of work done under parts K and L of the Modified Scope of Work (CVS tests and Road Route studies) were covered in a separate report titled "In Use Heavy Duty Gasoline Truck Emissions, Part I, Mass Emissions from Trucks Operated Over a Road Course", dated February, 1973, Report No. EPA-460/3-73-002A

C. Objective

The objective of this project was to determine the effectiveness of exhaust controls on 1970 and 1971 heavy-duty gasoline trucks in the southwestern portion of the U.S. and to establish their performance versus operation (time) and mileage accumulation.

D. Approach

To meet the objectives of the project, a group of at least 140 vehicles were to be inspected periodically measuring exhaust emissions of hydrocarbons, (HC), carbon monoxide (CO) and nitric oxide (NO) using a chassis dynamometer version of the nine-mode engine-dynamometer Federal Test Procedure (FTP) for gasoline fueled heavy-duty vehicles.

Vehicles in this program were chosen to represent, to the extent feasible, the total HDV population by make, displacement, and application. While every effort was made to use new vehicles, it was recognized that it would be necessary to include some vehicles that would have accumulated several thousand miles prior to the start of testing.

Since the official FTP is a stationary engine dynamometer procedure and the surveillance test used an unofficial chassis dynamometer version of this FTP, a check of the correlation of the results from the two methods was necessary. A group of 10 trucks were tested using the nine-mode FTP on both chassis and stationary dynamometers and the results of the two types of tests were compared. In this report, stationary dynamometer is used synonymously with engine dynamometer to indicate an engine test stand dynamometer.

E. Project Reviews

During the initial month of the project (July 1970), several conferences were held with the Project Officer regarding the extent of and date for instrumentation checkout, calibration, and validation. Such a correlation step was considered important to assure acceptable test results. The start of laboratory tests was delayed approximately five weeks by mutual agreement with the Project Officer to permit calibration and correlation with the EPA (then NAPCA) dynamic calibrator. On September 8 and 9, 1970, Mr. Matt Macocha, Mr. Jim Marzen, and Mr. Tom Lyttle visited the Emissions Research Laboratory for the purpose of checking the Laboratory exhaust gas analysis system against the NAPCA dynamic gas calibrator. The Laboratory instrument results varied from the dynamic gas calibrator by more than an acceptable amount. This lack of agreement was subsequently found to be attributed to the combination of gas chromatagraph procedures in defining standard calibration gases and the use of high order polynomial equations to define the calibration curves. To facilitate agreement, on September 24 and 25, 1970, approximately 50 calibration cylinders were transported to the NAPCA laboratories for definition of concentration. Upon return of the cylinders to SwRI, new calibrations of each instrument were performed using the dynamic gas calibrator on November 2, 1970. These calibrations gave satisfactory correlation. The difficulties in correlation of the SwRI gas analysis instruments and the EPA dynamic gas calibrator set back the start of surveillance tests an additional month.

The several months delay in starting tests under this program resulted in 1971 model trucks becoming available. To fulfill the intent of this project, namely evaluation of emissions with low mileage, preferably factory new, as-delivered vehicles, clarification of contract wording was requested of the Project Officer. On November 23, 1970, approval was given to utilize 1971 model vehicles for purposes of this project. On December 16, 1970, Mr. Karl Springer, Emissions Research Laboratory Manager, visited the Project Officer at the EPA's Ypsilanti Willow Run Laboratory for discussions of the project status and progress.

During the week of July 1971, Mr. M. Macocha of the EPA again visited the Emissions Research Laboratory to inspect and check the calibration of the Beckman NDIR instrumentation train. The only item found worthy of special mention was a small leak in the high level hydrocarbon system. The leak was located in a Swaglok tubing fitting near a solenoid valve and affected only the high hydrocarbon part of the system. The leak was assumed to have been the result of a solenoid inspection and cleaning several days before. No surveillance trucks had been tested in the intervening period, so that the leak had no effect on surveillance results. Some deficiencies in record keeping and data logging were noted and immediate changes were made by operating and supervisory personnel to meet the desires of the inspector.

A project review conference was held on February 14 and 15, 1972 at the Emissions Research Laboratory of SwRI. Personnel in attendance from the EPA were Messrs. Charles Domke and Jim Marzen of the Division of Certification and Surveillance and Messrs. Jim Hammerle and David Kircher of the Division of Applied Technology Mr. Karl Springer, Manager of the Emissions Research Laboratory, hosted the meeting assisted by members of the Emissions Research Laboratory professional staff, including Messrs. John Storment, Clifford Tyree and Melvin Ingalls. The project work and results to that date were reviewed and procedures for the work required in the recent contract revision were discussed. The specific item covered applicable to this part of the project was a decision to investigate the possibility of a detailed analysis of surveillance data on a percent change in emission level versus mileage basis and to ascertain cost and effectiveness of this type of analysis. The equipment and procedures used for the chassis version of the Federal nine-mode heavy-duty engine-dynamometer test procedure were observed during an actual surveillance test.

Mr. Tom Bejma of the Surveillance Branch, Division of Certification and Surveillance, Environmental Protection Agency, visited the Emissions Laboratory on June 13 and 14, 1972 to review the project, check test and calibration procedures, and discuss EPA recommendations and requirements for instrumentation calibrations.

The procedures for both truck testing instrumentation and calibration were found to be satisfactory. Several recommendations were made for improvements in instrumentation calibration procedures which were implemented.

Messrs. John White and Tom Bejma, of EPA, visited the Emission Research Laboratory at SwRI on August 8 and 9, 1972. The history and current status of the project was reviewed for Mr. White, who had been designated as Project Officer for Contract EHS 70-113, effective August 4, 1972. Messrs. White and Bejma witnessed the monthly calibration of the Beckman instrumentation system used for the nine-mode FTP. A vehicle test utilizing the chassis version of the nine-mode heavy-duty FTP was also witnessed.

On March 1, 1973, Messrs. Charles Domke and John White of the Environmental Protection Agency again visited the Emissions Research Laboratory for an inspection and project review. The current status of the project was discussed. It was decided to omit from fifth round tests four trucks (units 121 to 124), which had been unavailable for three months due to heavy usage by the fleet owner. Future truck surveillance activities were also discussed. The consensus of opinion was that little additional information could be gained from extending the testing of the current surveillance fleet. However, the Emissions Research Laboratory staff expressed the conviction that some truck surveillance activity should be planned for the 1974 model trucks, since new emission standards had been set for the 1974 model year.

The next project review occurred on July 31, 1973, when Mr. John White visited the Emissions Research Laboratory for inspection and progress review. Another project review occurred on December 15, 1973, when Mr. John White visited the Emissions Research Laboratory accompanied by Mr. John Shelton. The final project review was made on March 25 and 26, 1974 during a visit by Mr. Charles Domke and Mr. John White. The status of the final report and its content and completion of the project were the items of major importance discussed.

## II. THE TEST FLEET

The testing performed during this project was in two phases. One phase was the actual surveillance tests themselves, the other phase was a group of tests to correlate chassis dynamometer and stationary engine dynamometer results. This section discusses the reasons for the truck selections and briefly describes the characteristics of the group of trucks used in each test phase.

### A. Surveillance Fleet

This fleet of 1970 and 1971 trucks, originally numbering 152, was assembled with the aim of obtaining as many makes and models of trucks as possible, with 5 to 10 trucks per model if at all possible. While the truck population by make and model and the population by gross vehicle weight were the two primary factors considered, other factors such as type of operation and maintenance were also considered in the fleet selection. Availability of trucks in the local area also affected the fleet composition. The resulting fleet, shown by manufacturer and engine displacement in Table 1, was a compromise of all these considerations. Table 2 compares the surveillance fleet to a sales-weighted fleet. Figure 1 compares the test fleet by GVW with the 1970 factory sales by GVW.

Figures 2, 3, and 4 show examples of the varied kinds and sizes of trucks that made up the surveillance fleet.

Appendix Table A-2 lists the entire 152 trucks, with sources, engine model, GVW, etc., shown for each truck. For purposes of analysis, this fleet has been divided into 23 categories of engine make and displacement. These categories are listed in text Table 2 and described in more detail in Appendix Table A-3.

### B. Engine-to-Chassis Dynamometer Correlation Group

This group of 10 trucks/engines used to check the stationary-to-chassis dynamometer correlation were selected to represent as many different makes, displacements and gross vehicle weights as possible. Emission levels were not considered when choosing trucks for this investigation. All were either 1970 or 1971 trucks, except for correlation Truck 4, which was a 1969 Dodge. This truck, while a 1969 truck, was "emission control equipped" as Chrysler Corporation equipped all of its 1969 trucks to meet the 1969 California standards. The 1969 California standards were the same as the 1970 Federal standards. Because of the time required to remove the engine from a given vehicle for testing on the stationary dynamometer, mostly rental

## TABLE 1. BREAKDOWN OF SURVEILLANCE FLEET BY MAKE AND DISPLACEMENT

| | Chevrolet |
|---|---|
| 4 | 250 CID 6; all 1970 |
| 2 | 292 CID 6; all 1970 |
| 11 | 307 CID V-8; all 1970 |
| 7 | 350 CID V-8; all 1971 |
| 2 | 366 CID V-8; all 1970 |
| 2 | 427 CID V-8; one 1970; one 1971 |
| 28 | TOTAL |

| | Dodge |
|---|---|
| 8 | 225 CID 6; all 1970 |
| 15 | 318 CID V-8; all 1970 |
| 23 | TOTAL |

| | Ford |
|---|---|
| 3 | 240 CID 6; all 1970 |
| 17 | 300 CID 6; all 1970 |
| 1 | 302 CID V-8; all 1970 |
| 4 | 330 CID V-8; all 1970 |
| 5 | 360 CID V-8; all 1970 |
| 3 | 361 CID V-8; all 1970 |
| 4 | 391 CID V-8; all 1971 |
| 37 | TOTAL |

| | GMC |
|---|---|
| 5 | 292 CID 6; all 1970 |
| 2 | 350 CID V-8; all 1970 |
| 1 | 401 CID V-6; all 1970 |
| 8 | TOTAL |

| | IHC |
|---|---|
| 13 | 304 CID V-8; twelve 1970; one 1971 |
| 8 | 345 CID V-8; six 1970; two 1971 |
| 23 | 392 CID V-8; six 1970; seventeen 1971 |
| 7 | 478 CID V-8; four 1970; three 1971 |
| 51 | TOTAL |

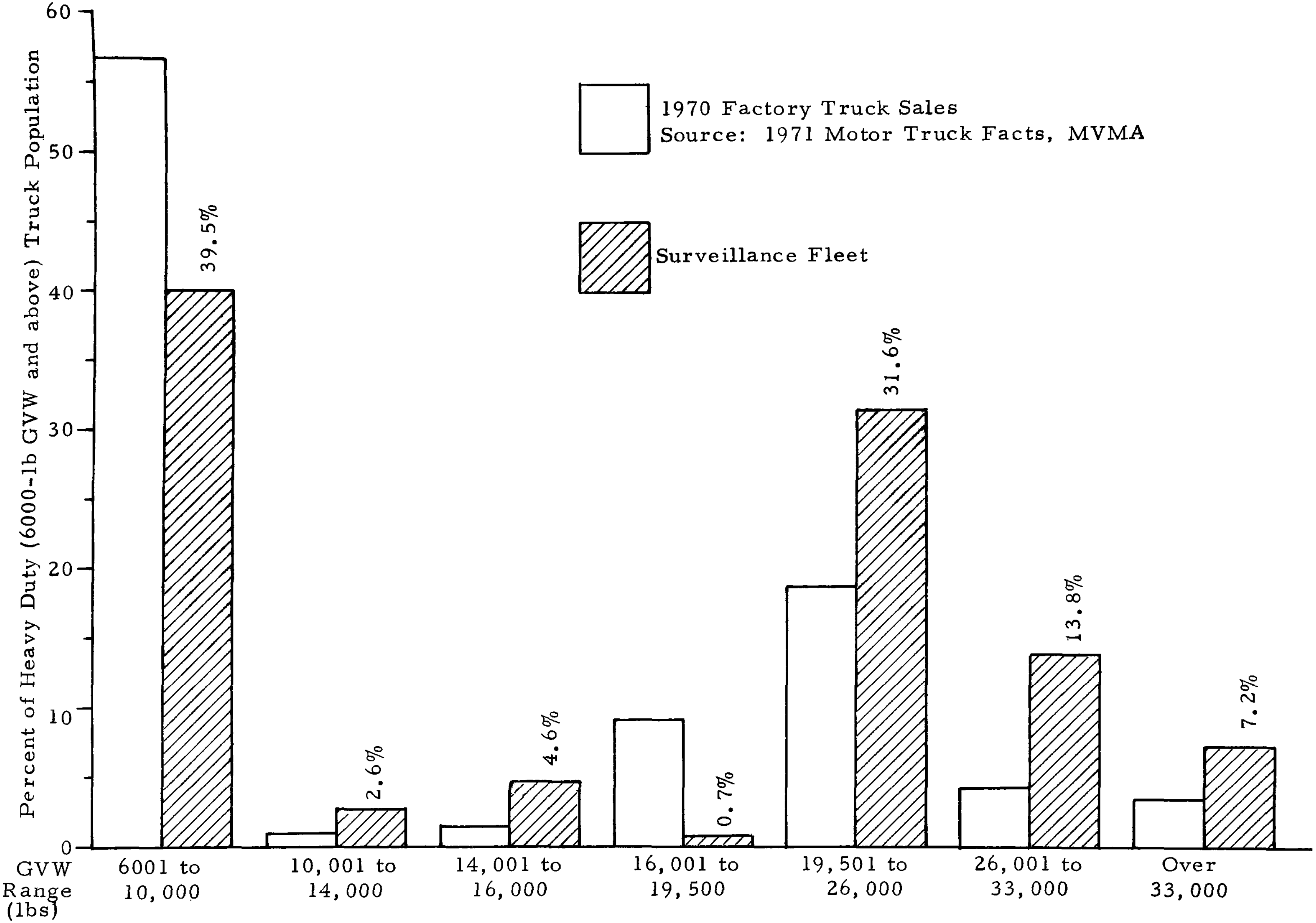
| | White |
|---|---|
| 5 | 400 CID 6; all 1970 |

| | |
|---|---|
| Grand Total | 152 |
| Number of Six Cylinder Engines | 45 |
| Number of V-8 Cylinder Engines | 107 |
| Number of 1970 Vehicles | 117 |
| Number of 1971 Vehicles | 35 |

TABLE 2. COMPARISON OF GASOLINE SURVEILLANCE FLEET COMPOSITION TO A FLEET WEIGHTED TO 1971 ESTIMATED SALES

| Category | Vehicle Make | Engine CID | Estimated 1971 National Sales (%) | Numbers in a Sales Weighted Fleet | Actual Number | Difference Actual - Sales Weighted |
|---|---|---|---|---|---|---|
| 1 | Chev. | 250 | 2 | 3 | 4 | +1 |
| 2 | Chev. | 292 | see GMC | see GMC | 2 | see GMC |
| 3 | Chev. | 307 | 4 | 6 | 11 | +5 |
| 4 | Chev. | 350 | see GMC | see GMC | 7 | see GMC |
| 5 | Chev. | 366 | 2 | 4 | 2 | -2 |
| 6 | Chev. | 427 | 1 | 2 | 2 | 0 |
| 7 | Dodge | 225 | 1 | 2 | 8 | +6 |
| 8 | Dodge | 318 | 8 | 12 | 15 | +3 |
| 9 | Ford | 240 | 2 | 3 | 3 | 0 |
| 10 | Ford | 300 | 3 | 4 | 17 | +13 |
| 11 | Ford | 302 | 3 | 4 | 1 | -3 |
| 12 | Ford | 330 | 7 | 11 | 4 | -7 |
| 13 | Ford | 360 | 19 | 29 | 5 | -24 |
| 14 | Ford | 361 | 2 | 3 | 3 | 0 |
| 15 | Ford | 391 | 1 | 2 | 4 | +2 |
| 16 | GMC | 292 | 2* | 4* | 5 | +3 |
| 17 | GMC | 350 | 19* | 28* | 2 | -19 |
| 18 | GMC | 401 | 1 | 1 | 1 | 0 |
| 19 | IHC | 304 | 3 | 5 | 13 | +8 |
| 20 | IHC | 345 | 5 | 7 | 8 | +1 |
| 21 | IHC | 392 | 2 | 3 | 23 | +20 |
| 22 | IHC | 478 | <1 | 1 | 7 | +6 |
| 23 | White | 400 | <1 | 1 | 5 | +4 |
| | Ford | 390 | 3 | 4 | 0 | -4 |
| | Chrysler | 413 | 2 | 3 | 0 | -3 |
| | Chev. | 402 | 2 | 2 | 0 | -2 |
| | GMC | 351 | 1 | 2 | 0 | -2 |
| | Chrysler | 361 | 1 | 1 | 0 | -1 |
| | IH | 232 | 1 | 1 | 0 | -1 |
| | Chrysler | 383 | 1 | 1 | 0 | -1 |
| | Ford | 477 | <1 | 1 | 0 | -1 |
| | Ford | 534 | <1 | 1 | 0 | -1 |
| | Chrysler | 360 | <1 | 1 | 0 | -1 |
| | IH | 450 | <1 | 0 | 0 | 0 |
| | Cadillac | 472 | <1 | 0 | 0 | 0 |
| | IH | 549 | <1 | 0 | 0 | 0 |

* GMC and Chevrolet were estimated together.


Percent of Heavy Duty (6000-lb GVW and above) Truck Population
60
50
40
30
20
10
0
1970 Factory Truck Sales
Source: 1971 Motor Truck Facts, MVMA
Surveillance Fleet
39.5%
2.6%
4.6%
0.7%
31.6%
13.8%
7.2%
GVW Range (lbs)
6001 to 10,000
10,001 to 14,000
14,001 to 16,000
16,001 to 19,500
19,501 to 26,000
26,001 to 33,000
Over 33,000

Unit 55 - 1970 IHC 304 CID V-8

Unit 57 - 1970 IHC 304 CID V-8

Unit 60 - 1970 Chevrolet 307 CID V-8

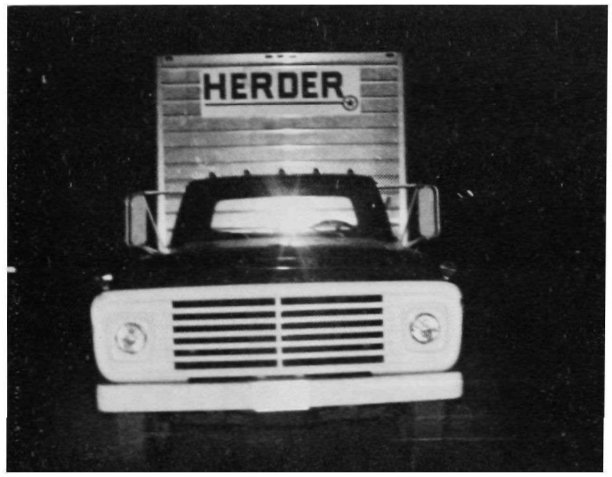

Unit 64 - 1970 Dodge 318 CID V-8

Unit 68 - 1970 Ford 361 CID V-8

Unit 72 - 1971 IHC 345 CID V-8

FIGURE 2. EXAMPLES OF SURVEILLANCE TRUCKS

Unit 77 - 1970 Dodge 225 CID I6




Unit 81 - 1970 Ford 300 CID I6

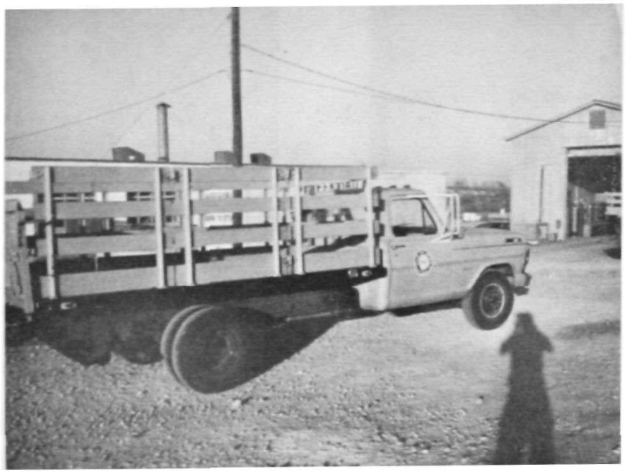
Unit 83 - 1970 Ford 361 CID V-8

Unit 91 - 1970 IHC 345 CID V-8

Unit 101 - 1970 Ford 330 CID V-8

Unit 105 - 1970 IHC 392 CID V-8

FIGURE 3. EXAMPLES OF SURVEILLANCE TRUCKS



**Unit 106 - 1970 Ford 360 CID V-8**

**Unit 110 - 1970 Chevrolet 307 CID V-8**

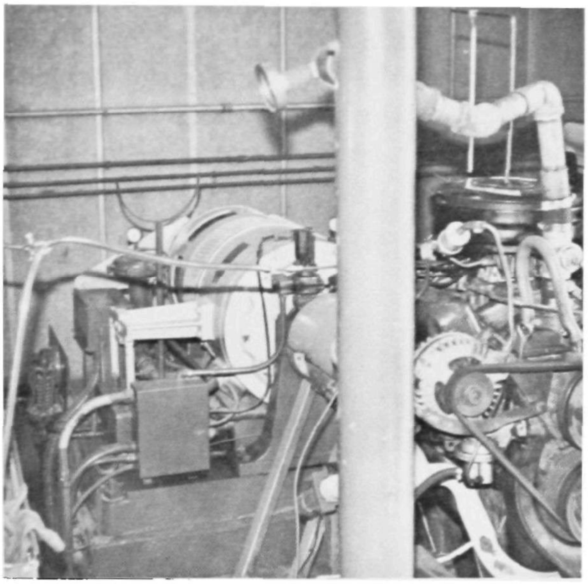
**Unit 112 - 1970 Chevrolet 307 CID V-8**

**Unit 117 - 1970 GMC 350 CID V-8**

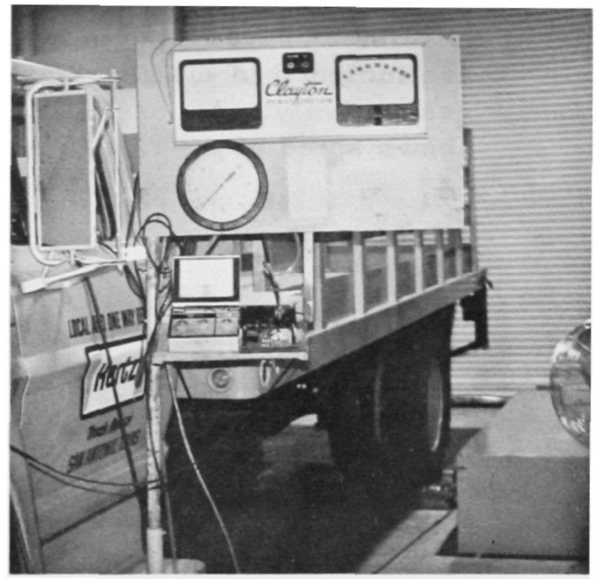

**Unit 123 - 1970 GMC 292 CID I6**

FIGURE 4. EXAMPLES OF SURVEILLANCE TRUCKS

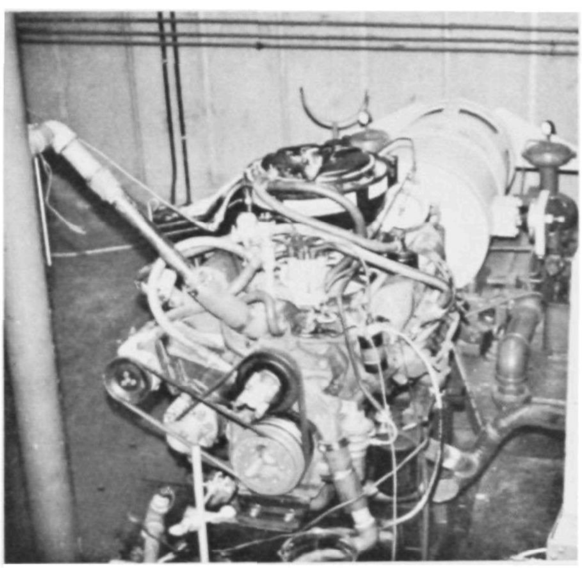
trucks were used for this part of the project. However, an attempt was made to include as many trucks from the surveillance fleet as possible. Five of the surveillance fleet, units 8, 20, 21, 94, and 144, are included in the correlation group as trucks 4, 1, 2, 9, and 8, respectively. Appendix Table A-1 describes the 10 trucks. Figure 5 shows some of the trucks and engines on their respective dynamometers.



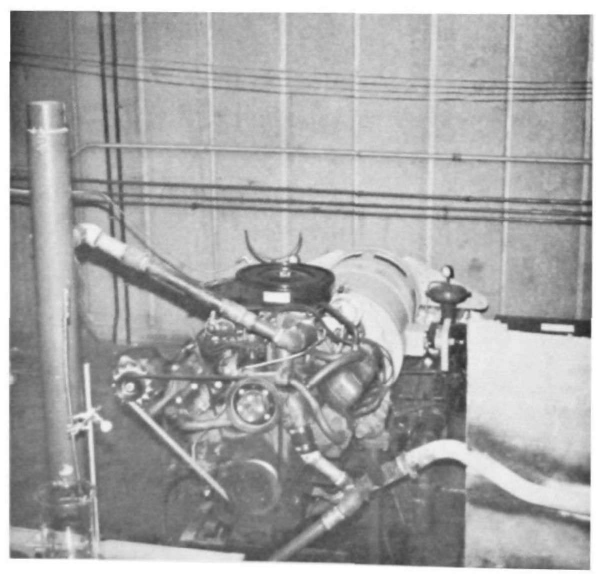
Truck No. 3 Engine, 1969 Dodge 318 CID V-8, on Stationary Dynamometer



Truck No. 5, 1971 Ford 330 CID V-8, on Chassis Dynamometer



Truck No. 5 Engine, 1971 Ford 330 CID V-8, on Stationary Dynamometer



Truck No. 7 Engine, 1970 IHC 345 CID V-8, on Stationary Dynamometer

FIGURE 5. CORRELATION GROUP ENGINES AND TRUCKS ON TEST DYNAMOMETER

## III. TEST PROCEDURES, INSTRUMENTATION, AND FUEL

The two phases of this study, the surveillance phase and the correlation phase, used essentially the same test procedures and similar, sometimes the same, equipment. This section explains the test procedures and instrumentation used for both phases of the investigation and presents an analysis of the test fuel used during the two phases of testing.

### A. Test Procedure

#### 1. Heavy-Duty Gasoline Nine-Mode Federal Test Procedure

The engine-operating schedule for both the surveillance tests and correlation tests was the 1970 nine-mode Federal Test Procedure(7). The correlation tests run on the stationary engine dynamometer adhered strictly to the FTP as published in the November 10, 1970 Federal Register. The chassis dynamometer tests were run using a chassis dynamometer version of the FTP contained in the proposed Federal Standard of January 4, 1968 as an alternate to the stationary method.(8) This chassis version was deleted when the regulations were adopted and published in the June 4, 1968 Federal Register(9).

Briefly, the nine-mode FTP consists of the schedule shown in Table 3, which is run four times for a total running time of 20 minutes. The weighting factors, listed in the last column of the table, are used to calculate the concentration results. The complete Federal Test Procedure as published in the November 10, 1970 Federal Register, is included in this report as Appendix C for convenient reference.

#### 2. Surveillance Trucks

No specific pre-test preparations were made to this group of 152 trucks for the surveillance tests. A tag was placed in the engine compartment of each truck stating the following:

> "Engine on 12 month fleet test for Southwest Research Institute. Engine to be maintained normally in accord with usual fleet practice. Please report any difficulties requiring adjustments to carburetion, ignition or internal engine maintenance to [here the name of supplier's maintenance supervisor was inserted]."

The fleet sources were also contacted personally to insure that they understood no changes in their current maintenance procedure were desired. At each test the exhaust system on each truck was inspected and repaired or tightened where required to provide a leak-tight exhaust system.

TABLE 3. 1970 FEDERAL NINE-MODE CONSTANT SPEED PROCEDURE FOR HEAVY-DUTY GASOLINE TRUCKS

| Sequence Number | Manifold Vacuum | Time in Mode, sec. | Cumulative Time, sec. | Weighting Factors |
|---|---|---|---|---|
| 1 | Idle | 70 | 70 (1:10) | 0.036 |
| 2 | 16 in. Hg | 23 | 93 (1:33) | 0.089 |
| 3 | 10 in. Hg | 44 | 137 (2:17) | 0.257 |
| 4 | 16 in. Hg | 23 | 160 (2:40) | 0.089 |
| 5 | 19 in. Hg | 17 | 177 (2:57) | 0.047 |
| 6 | 16 in. Hg | 23 | 200 (3:20) | 0.089 |
| 7 | 3 in. Hg | 34 | 234 (3:54) | 0.283 |
| 8 | 16 in. Hg | 23 | 257 (4:17) | 0.089 |
| 9 | Closed Throttle | 43 | 300 (5:00) | 0.021 |

Engine Speed 2000 ± 100 rpm.

An initial 5-min idle, two warmup cycles and two hot cycles constitute a complete dynamometer run.

When a truck was brought in for a surveillance test, it was placed on the chassis dynamometer and the engine checked to determine the timing, idle speed and dwell. An inlet manifold vacuum line was installed and connected to the driver's vacuum gage. At the first inspection the truck was then run at the various vacuum levels specified in the FTP and the engine speed checked using a stroboscopic tachometer to insure that the speed was within ± 100 rpm of the specified 2000 rpm with the motor pulleys used. (Dynamometer operation is explained in Section III-C-2.) The fuel line from the vehicle gas tank to the engine fuel pump was disconnected and a line installed from the test fuel tank. The engine was then allowed to soak for an hour prior to starting the test. The gas analyzers were checked using zero level gas and a known concentration gas. The exhaust gas sample probe was then placed in the tailpipe. Just prior to starting the test, the barometric pressure and wet and dry bulb temperatures were recorded. The radiator cooling fan was then started and the engine started and warmed up for five minutes as prescribed in the Federal Regulations. The nine-mode FTP was then begun. At the completion of the FTP, the sampling system was checked for hydrocarbon "hang up" and the instrument calibration rechecked.

If the engine was not within ± 3° spark timing or ± 100 rpm idle speed of the manufacturer's specifications, these items were adjusted to the specifications, the engine was allowed to cool for one hour and a second FTP run. The engine was adjusted back to its "as received" condition before returning the truck to service. The results from each nine-mode test were computed in accordance with paragraph 85.109 of the applicable Federal Regulations (see Appendix C). In addition, the composite value of NO was corrected for humidity using the correction factor developed by the Ethyl Corporation.[11]

### 3. Engine-to-Chassis Dynamometer Correlation Group

Each of the 10 engines tested during this part of the procedure was first checked in the vehicle to insure that it was within the manufacturers' specifications for idle speed, timing, dwell, carburetor adjustments, and compression. The spark plugs were also checked with an oscilloscope to insure that each one was firing properly. Other than to insure that the engines were tuned to factory specifications, no truck except the 1969 Dodge required any maintenance. The 1969 Dodge received new plugs, points, condenser, fuel filters, distributor and carburetor. The engine was then tuned to factory specifications. Each truck was then tested on the chassis dynamometer using the same procedure as the surveillance trucks. Several chassis FTP tests were run, with a one hour soak period between each test to verify the emission levels obtained.

The engine, without the radiator and transmission, was removed from the vehicle and installed on the stationary engine dynamometer. The same vacuum gage and exhaust gas analyzers that were used with the chassis tests were moved to the test cell for use during the stationary tests.

The engine was directly coupled to the dynamometer and used the test stand water-to-water heat exchanger in place of the vehicle radiator. The vehicle exhaust system was connected to the engine insofar as possible in the same configuration as on the truck. A mechanical-pneumatic throttle linkage was installed on the engine. The automatic data acquisition system was connected to the gas analyzers and several runs of the FTP were made to insure valid results.

The results of each of the nine-mode tests were calculated as specified in the Federal Regulations. The chassis and stationary runs were then averaged separately and the two averages compared.

B. Test Facility

With the exception of the first inspection round, all surveillance tests were conducted at the SwRI Emissions Research Laboratory. This laboratory, shown on the frontispiece, was placed in operation in April 1971 and is equipped for controlled-environment operations with the most modern means of emissions sampling and analysis.

The chassis dynamometer used for gasoline surveillance is housed in one of the laboratory high bay areas. There is ample room in this area to accommodate all instruments and the largest truck in the surveillance fleet. Figure 6 is a picture of the surveillance test area. The approximately 100 tons of air conditioning and heating are capable of maintaining the laboratory high bay area at 70° F to 75° F over the entire range of outside ambient temperature experienced in the area. Some summer humidity control is obtained with atmospheric water removal in the air conditioning system, but no other humidity control is attempted.

The stationary engine dynamometer used in the stationary-to-chassis dynamometer correlation tests is housed in test cell 3 of the U.S. Army Fuel and Lubricants Laboratory at SwRI. This laboratory is a completely-equipped engine test facility run by SwRI for the U.S. Army. Figure 7 shows pictures of the control stand and test cell area of test cell 3.

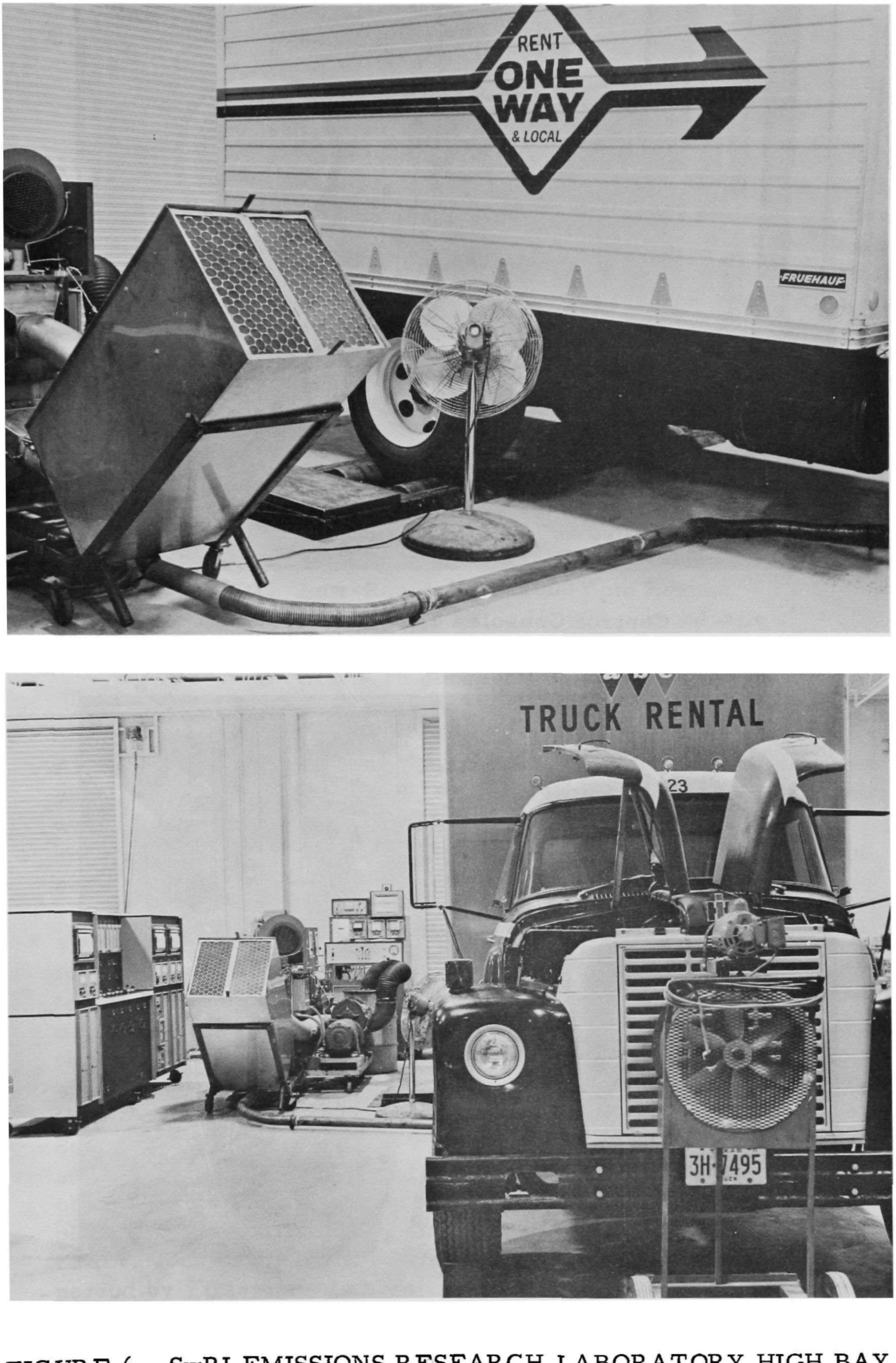
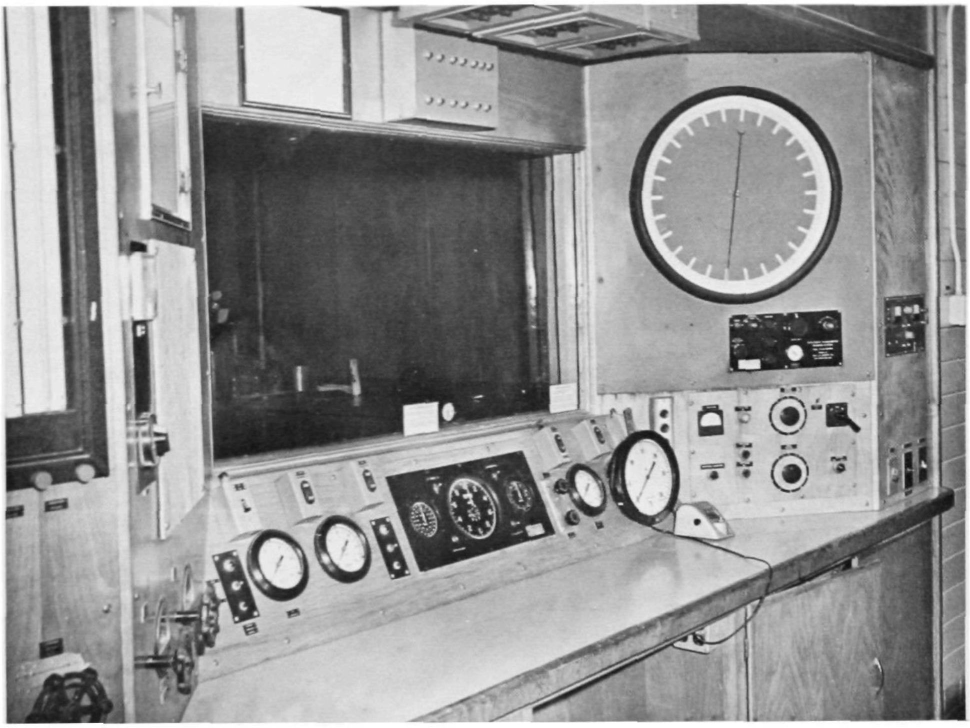
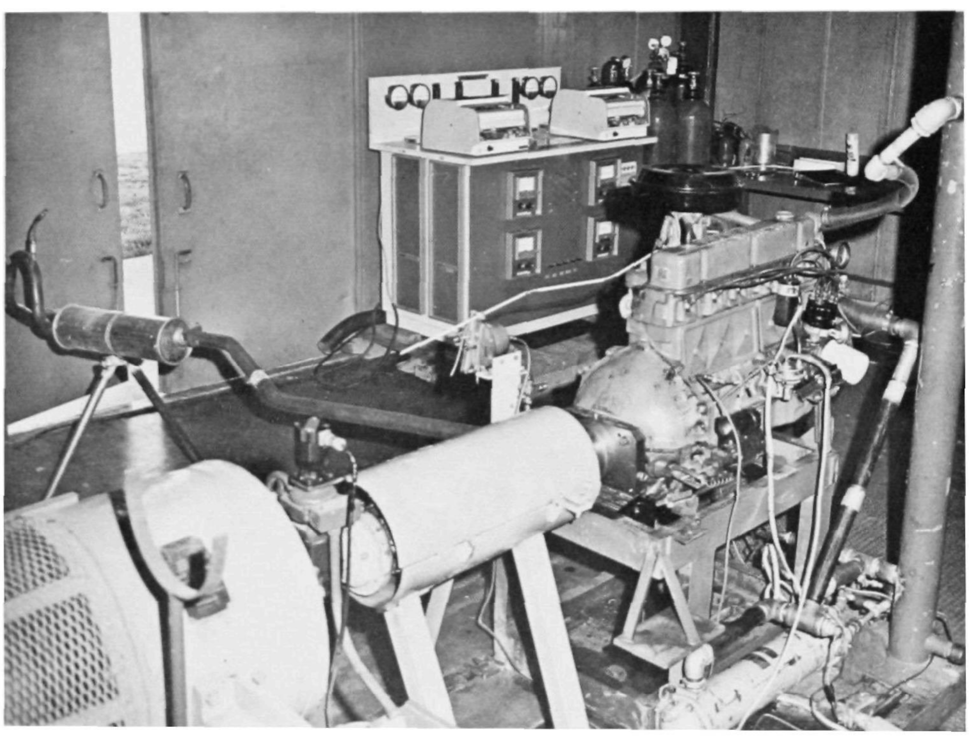



FIGURE 6. SwRI EMISSIONS RESEARCH LABORATORY HIGH BAY AREA FOR GASOLINE POWERED TRUCK TESTING



Control Console, Test Cell No. 3



Typical Engine Installation, Test Cell No. 3

FIGURE 7. TEST CELL NO. 3 U. S. ARMY FUELS AND LUBRICANTS LABORATORY, SwRI

## C. Test Equipment and Instrumentation

### 1. Exhaust Sampling and Analysis

For the surveillance tests, gas sampling and analysis for the nine-mode FTP were accomplished using the system shown in Figure 8. This system includes a gas sampling and analysis train using Beckman non-dispersive infrared (NDIR) gas analyzers in a Beckman-built sampling system and a Data General Super Nova Computer with the necessary peripheral equipment for automatic data acquisition and processing. The NDIR sampling train meets the requirements and specifications established in the Federal regulations[7] for heavy-duty vehicle exhaust sampling. For convenience, the portions of the Federal regulations applicable to exhaust emission testing of heavy-duty gasoline vehicles, as printed in the Federal Register, are reproduced in Appendix C. A flow diagram and component description of the system is contained in this Appendix. Nominal full-scale concentration levels for the five NDIR analyzers are as follows:

1. Low-Range HC - 1000 ppm hexane
2. High-Range HC - 10,000 ppm hexane
3. CO - 11 percent
4. $CO_2$ - 16 percent
5. NO - 4000 ppm

Although nitric oxide was not included in the Federal regulations for gasoline HDVs at the time the surveillance activity was started, it was anticipated that it would be included in future regulations and so provided valuable information on NO levels for trucks in service prior to standards being set.

The NDIR cart was subjected to a rigorous calibration according to exacting EPA requirements. Both static and dynamic gas simulator tests were run initially on this and the similar instrumentation system used in the correlation tests by Mr. Matt Macocha of EPA during the period of September-November 1971. One of the EPA checks was to name an unknown to ± 1 percent, a difficult requirement since the basic detector is only specified to ± 1 percent by the manufacturer. Suffice to say that no tests were made until initial calibrations were satisfactorily completed and an EPA acceptance of time response obtained. Recheck of calibrations and instrument response was accomplished periodically during the course of this project by EPA. Monthly calibrations of all NDIR instruments were made throughout the surveillance period by Emissions Laboratory personnel to assure optimum accuracy. Calibrations were performed using the Emission Laboratory "Golden Standard" gases. This set of 50 gas cylinders had been transported to

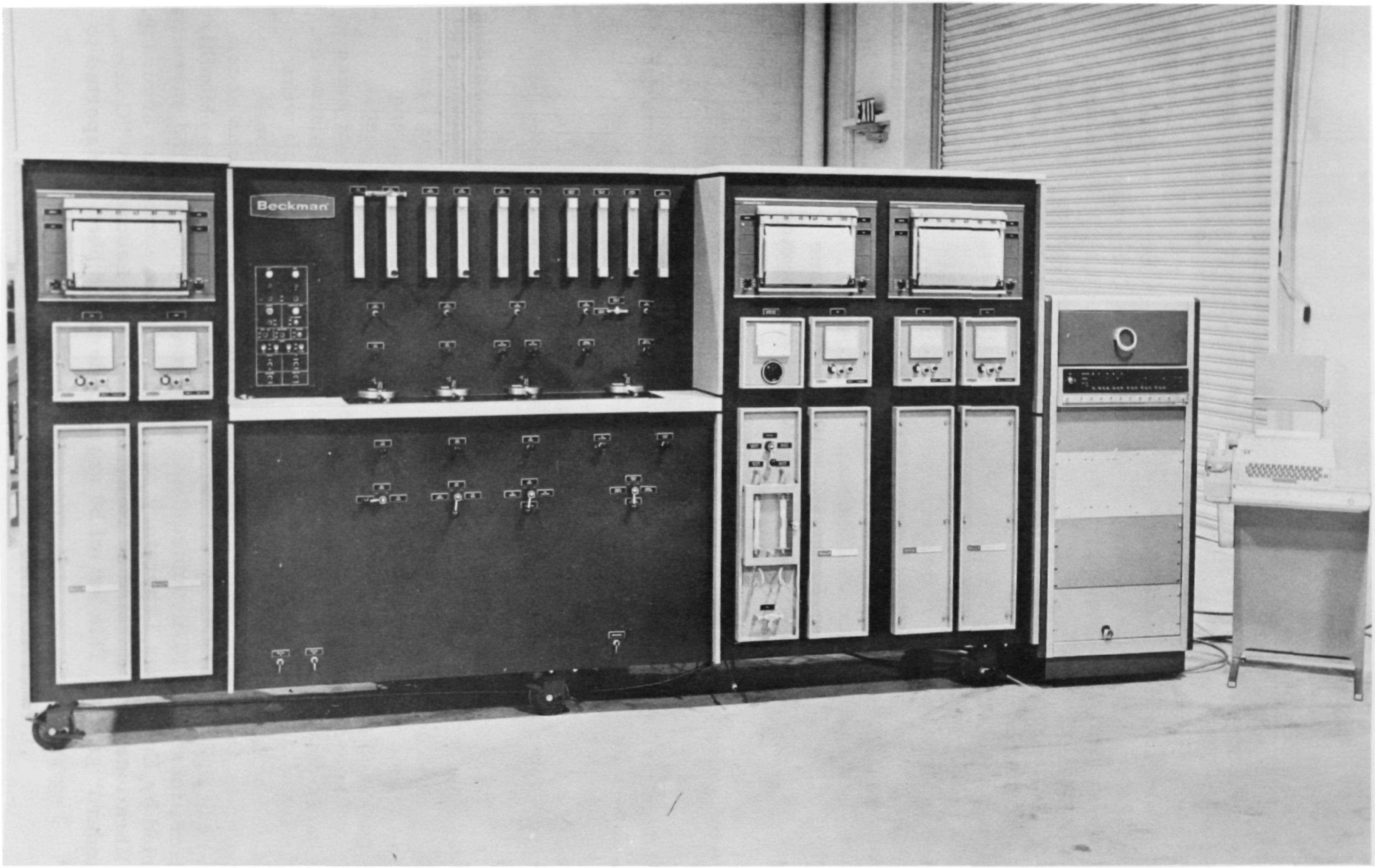



FIGURE 8. CONTINUOUS NDIR SAMPLING/ANALYSIS/ COMPUTER SYSTEM USED FOR NINE-MODE FTP TESTS

EPA laboratories and the concentrations defined to EPA standards at the beginning of the project.

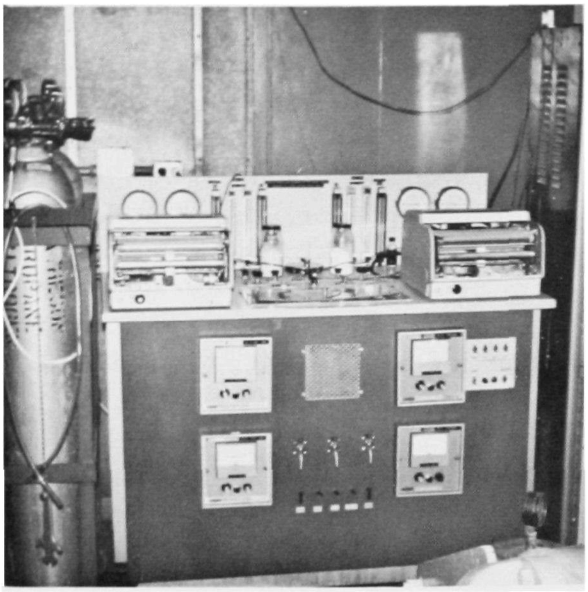
The automatic data acquisition system used in conjunction with the analytical instruments was designed and assembled by SwRI. The system's main components are a Data General Super Nova computer with an 8000 word central processor, a Computer Products Series RTP7410 analog to digital converter and multiplexer, and a model ASR33 teletype. The computer programming was also done by Institute personnel. The data acquisition system accepts analog (voltage) signals directly from the NDIR analyzers, digitizes these signals and converts them to the proper units of concentration for processing to obtain the composite values of HC, CO, and NO required by the FTP.

The output of each analyzer is also fed to strip-chart recorders. The concentrations of each contaminant can be obtained from the continuous traces by hand as specified in the nine-mode FTP. The average concentrations are then transferred to computer cards for further processing to obtain composite values for HC, CO, and NO. This method was used for part of the first inspection round and as a back-up to the real time data acquisition system normally used for subsequent inspection rounds. The accuracy and repeatability of the automatic data acquisition system has been shown to be equal or better than manual chart reading and computer reduction of data.

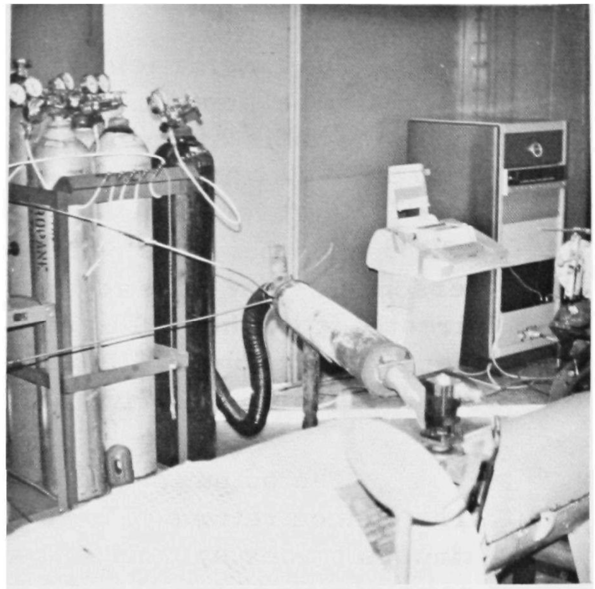
For the engine-to-chassis dynamometer correlation tests, a similar gas sampling and analysis train was used with the same automatic data acquisition system. This sampling and analysis system, which can be seen in Figure 9, used Beckman NDIR gas analyzers in a sampling system built by Scott Laboratories. This sampling train also meets the Federal requirements for heavy-duty exhaust sampling.

## 2. Chassis Dynamometer

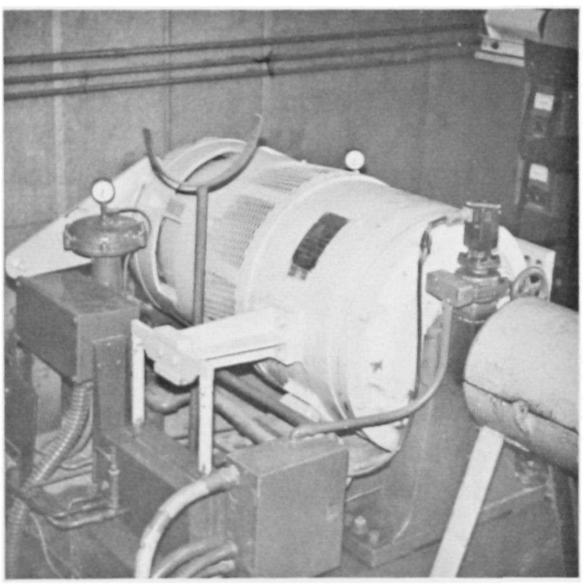
The SwRI chassis dynamometer system used in this and previous projects is a modified Clayton CT-200 series dynamometer. Up to 200 hp may be absorbed with this water brake-type absorber. This system incorporates a 50 hp, three phase, AC electric motor that, when engaged, will maintain a nearly constant rear wheel speed during power and closed throttle (CT) operation. The electric motor is coupled to the front roll of the chassis dynamometer with a positive drive belt. The vehicle engine speed can be changed by changing vehicle rear wheel speeds either by operating in a different transmission drive gear or changing motor drive pulleys. Figure 6 shows typical views of trucks being operated on this dynamometer. The top photograph is a side view of a truck mounted on the dynamometer rolls. For the nine-mode FTP, the water brake absorber is unloaded and the load and engine speed are controlled by the electric motor.



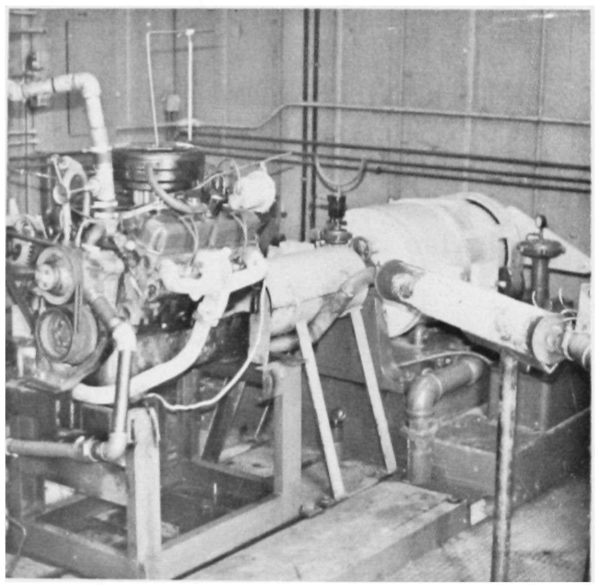
Beckman/Scott NDIR Sampling and Analysis System



Automatic Data Acquisition System



Electric Eaton Dynamometer



Typical Engine Installation

FIGURE 9. INSTRUMENTATION AND ENGINE INSTALLATION TEST CELL NO. 3, ARMY FUEL AND LUBRICANTS LABORATORY

### 3. Engine Dynamometer

The engine dynamometer used for engine tests in the U. S. Army Fuel and Lubricants Research Laboratory is an all electric-Eaton Dynamatic dynamometer. This dynamometer is capable of absorbing 300 hp at engine speeds from 2100 to 5000 rpm with 50 hp motoring capacity at speeds up to 3500 rpm. Figures 7 and 9 show the dynamometer and a typical engine installation

## D. Fuel

The fuel used during all emissions tests, both chassis and stationary, met the requirements of the Federal Regulations(9). A typical fuel analysis of the fuel used is given in Table 4. The fuel used during the in-service operation of the vehicle was the fleet owner's usual fuel. Normally this was a regular grade, name brand, leaded motor fuel.

TABLE 4. INSPECTION REPORT OF LEADED PREMIUM MOTOR GASOLINE USED FOR ALL TESTS

| | |
|---|---|
| Gravity, deg API (D287) | 59.3 |
| Distillation Range (D 86) | |
| Initial Boiling Point, °F | 88 |
| 5% Point, °F | 116 |
| 10% Point, °F | 127 |
| 20% Point, °F | 150 |
| 30% Point, °F | 175 |
| 40% Point, °F | 200 |
| 50% Point, °F | 220 |
| 60% Point, °F | 235 |
| 70% Point, °F | 254 |
| 80% Point, °F | 276 |
| 90% Point, °F | 305 |
| 95% Point, °F | 327 |
| End Point | 340 |
| % Recovery | 98.0 |
| % Residue | 1.0 |
| % Loss | 1.0 |
| Octane No., Research (D1656) | 103.4 |
| Total Sulfur, % wt (D1266) | 0.004 |
| Reid Vapor Pressure, psi (D323) | 9.1 |
| Hydrocarbon Composition (D1319) | |
| Olefins, % | 0.4 |
| Aromatics, % | 27.3 |
| Saturates, % | 72.3 |
| Lead (Organic) g/gal (D526) | 3.271 |
| Phosphorus, Theory | 0 0 |
| Oxidation Stability (D525) | 600+ |
| Existent Gum, mg (D381) | 0 6 |

## IV. CORRELATION ENGINE TEST RESULTS

The results of the correlation tests are presented first since an understanding of these tests and their results is necessary for proper interpretation of the emission levels obtained from the surveillance tests. Table 5 is a summary of the average FTP emission levels obtained from the 10 correlation trucks/engines tested showing both chassis and engine dynamometer results and the percentage difference between the two types of tests. As can be seen from the table, there is no one factor that will correlate the engine and chassis tests for any of the emissions. However, with exception of the CO results from three trucks and the HC results from one of these trucks, the chassis results fall within ±25 percent of the stationary engine dynamometer results. The worst agreement is shown by the CO emissions, with the largest difference for CO being 42 percent on Truck 4. More than half of the tests showed agreement within ±15 percent. A description of the trucks tested is given in Appendix Table A-1, and the individual test results for each truck are contained in Appendix B.

The exact reasons for the differences between chassis and engine dynamometer tests are not known. A mode-by-mode comparison of the tests for each truck shows that much of the difference can be attributed to the idle, 3-inch vacuum level, and closed throttle modes. Idle and closed throttle conditions are known to be the least repeatable from test to test and this undoubtedly plays some part in the differences seen between chassis and stationary dynamometer tests. The major difference between the two test methods was in the engine operating environment. For the engine dynamometer tests, the engine was in a large ventilated room with a much different radiant heat loss characteristic than when installed in the engine compartment of a vehicle. Convective heat losses were also different since in the vehicle the engine fan and floor fan in front of the radiator provide cooling air over the engine, while there was only natural circulation around the engine on the test stand. Even though the chassis engine mounts were used when the engine was on the engine dynamometer, the engine vibration characteristics probably were different from the engine mounted in the vehicle. These vibration differences could have caused differences in carburetor operation. These ideas are offered only as possible explanations. Further investigation of the correlation problem may be desirable if certification standards continue to be based on stationary engine dynamometer tests.

Since the stationary engine dynamometer tests were run in strict accordance with Federal Regulations, they can be directly compared to the Federal standards. Figure 10 is a histogram showing the levels of HC, CO, and corrected NO for these engines. Also shown are the Federal standards for each emission type. Since only one engine, selected by chance, of each engine model represented was tested, no conclusions can be drawn about a particular engine model from these tests.

TABLE 5. SUMMARY OF CORRELATION TRUCK RESULTS
9-MODE HEAVY DUTY GASOLINE FEDERAL CYCLE
STATIONARY-TO-CHASSIS DYNAMOMETER COMPARISON

| | HC - PPM - HEX. | | | CO, % | | | NO - PPM Observed | | | NO - PPM Corrected | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Truck | Average Station. | Average Chassis | % Diff. * | Average Station. | Average Chassis | % Diff. * | Average Station. | Average Chassis | % Diff. * | Average Station. | Average Chassis | % Diff. * |
| 1 | 161 | 182 | 13.0 | 1.40 | 1.07 | -23.6 | 2076 | 1747 | -15.9 | 2296 | 1735 | -24.5 |
| 2 | 143 | 172 | 20.3 | 0.48 | 0.65 | 36.0 | 1494 | 1703 | 14.0 | 1600 | 1705 | 6.6 |
| 3 | 297 | 293 | -1.3 | 4.43 | 3.31 | -25.3 | 1577 | 1648 | 4.5 | 1567 | 1579 | 0.8 |
| 4 | 163 | 207 | 27.0 | 1.70 | 2.41 | 41.8 | 1624 | 1705 | 5.0 | 1475 | 1611 | 9.2 |
| 5 | 188 | 218 | 15.0 | 1.18 | 1.04 | -11.8 | 1324 | 1436 | 8.4 | 1130 | 1318 | 16.6 |
| 6 | 129 | 130 | 0.8 | 1.78 | 1.99 | 12.2 | 926 | 869 | -6.1 | 811 | 754 | -7.0 |
| 7 | 257 | 208 | -19.1 | 1.61 | 2.08 | 28.6 | 2856 | 2341 | -21.9 | 2245 | 2207 | -1.7 |
| 8 | 214 | 227 | 6.1 | 1.57 | 1.40 | -11.1 | 1611 | 1679 | 4.2 | 1685 | 1395 | -17.2 |
| 9 | 186 | 162 | -12.9 | 1.01 | 0.90 | -9.9 | 3506 | 3494 | -0.6 | 2833 | 3099 | 9.4 |
| 10 | 204 | 245 | 20.1 | 1.34 | 1.44 | 7.3 | 1586 | 1479 | -6.7 | 1253 | 1252 | -0.1 |
| Avg. | 194 | 204 | 6.9 | 1.66 | 1.63 | 3.8 | 1858 | 1810 | -1.5 | 1690 | 1666 | 4.1 |

*Percent difference = $\frac{\text{(Chassis - Stationary)}}{\text{Stationary}} \times 100$

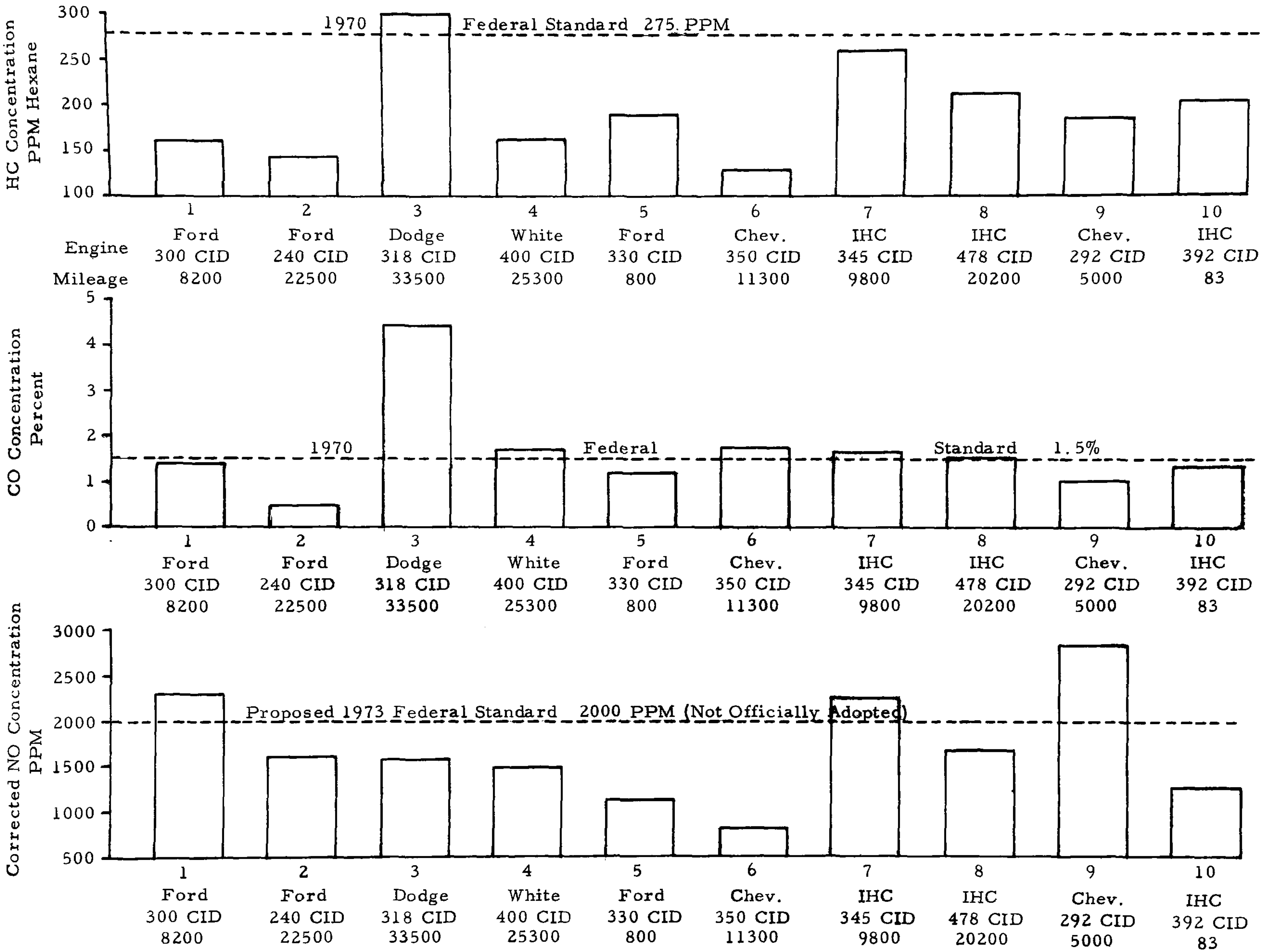



FIGURE 10. AVERAGE EXHAUST EMISSIONS FROM STATIONARY ENGINE DYNAMOMETER TESTS OF CORRELATION GROUP TRUCKS

# V. SURVEILLANCE FLEET TEST RESULTS

This section summarizes the results from the two and a half years of surveillance tests on 152 gasoline powered 1970 and 1971 model year trucks in use in the San Antonio, Texas area. The results are presented by inspection round (essentially this represents time in service) and as a function of vehicle miles traveled. Analysis of the test results is presented in the next section, Section VI.

## A. Results by Inspection Round

A total of seven inspections were performed on each truck. The first four inspections were at four-month intervals (0, 4, 8, and 12 months of service) and the last three inspections at six-month intervals (18, 24, and 30 months of service). In this report, the first inspection on all 152 trucks is referred to as the first inspection round or as round 1, the second inspection on all trucks as round 2, and so on.

Table 6 shows the average emission levels and the maximum and minimum levels for HC, CO, observed NO, and corrected NO for all seven inspection rounds. As can be seen from the table, the fleet average emissions for HC and CO increased over the surveillance period but observed and corrected NO remained essentially unchanged. Between the first and last inspections average HC increased 49 percent, CO increased 52 percent, while corrected NO increased 3 percent.

The arithmetical average of the HC level for the first four rounds was below the 1970 Federal Standard of 275 ppm. For the last three inspections, average HC level was above 275 ppm. For CO, the mean for each round was above the 1970 Federal Standard of 1.5% for all seven inspection rounds. There were no 1970 standards for NO. During the surveillance period a standard of 2000 ppm was proposed for 1973[10], but never adopted. Mean NO was below this value for all seven inspections. Subsequently the nine-mode procedure was changed to give results in grams per brake horsepower-hour, so that a standard for NO in terms of volumetric concentration never existed.

It should be noted that the Federal standards are used here as a convenient reference and no conclusion should be drawn from any comparisons with Federal standards without regard to the chassis-to-stationary engine test differences explained previously and to differences between the surveillance fleet and the total truck population.

The results of the surveillance inspection tests for each truck are tabulated by test round in Appendix D, Tables D-1 to D-7, for

## TABLE 6. AVERAGE FLEET EMISSION LEVELS

| Round | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Number of Trucks | 152 | 148 | 148 | 145 | 140 | 137 | 127 |
| Months from Beginning of Test | 0 | 4 | 8 | 12 | 18 | 24 | 30 |
| HC-PPM n hexane | | | | | | | |
| Average | 239 | 264 | 261 | 273 | 311 | 343 | 356 |
| Maximum value | 615 | 420 | 1838 | 2093 | 3906 | 2857 | 2151 |
| Minimum value | 63 | 139 | 95 | 120 | 117 | 104 | 134 |
| Standard Deviation | 66 | 52 | 149 | 219 | 386 | 371 | 381 |
| Coefficient of Variation (%) | 27.6 | 19.7 | 57.1 | 80.2 | 124.1 | 108.2 | 107.0 |
| CO - Percent | | | | | | | |
| Average | 1.61 | 1.73 | 1.89 | 1.79 | 1.95 | 2.16 | 2.44 |
| Maximum value | 5.52 | 6.56 | 11.92 | 4.90 | 7.07 | 8.23 | 8.36 |
| Minimum value | 0.26 | 0.31 | 0.19 | 0.15 | 0.22 | 0.35 | 0.41 |
| Standard Deviation | 0.81 | 0.88 | 1.19 | 0.85 | 1.03 | 1.21 | 1.51 |
| Coefficient of Variation (%) | 50.3 | 50.9 | 63.0 | 47.5 | 52.8 | 56.0 | 61.9 |
| NO observed - PPM | | | | | | | |
| Average | 1782 | 1880 | 1940 | 1866 | 1878 | 1892 | 1779 |
| Maximum value | 3985 | 3488 | 3811 | 4008 | 4047 | 3667 | 3576 |
| Minimum value | 423 | 434 | 272 | 439 | 428 | 317 | 294 |
| Standard Deviation | 646 | 584 | 588 | 677 | 650 | 687 | 717 |
| Coefficient of Variation (%) | 36.3 | 31.1 | 30.3 | 36.3 | 34.6 | 36.3 | 40.3 |
| NO corrected - PPM | | | | | | | |
| Average | 1701 | 1873 | 1911 | 1703 | 1808 | 1733 | 1749 |
| Maximum value | 3957 | 3314 | 3879 | 3696 | 3940 | 3311 | 3769 |
| Minimum value | 378 | 429 | 266 | 378 | 374 | 285 | 300 |
| Standard Deviation | 614 | 563 | 598 | 594 | 648 | 626 | 731 |
| Coefficient of Variation (%) | 36.1 | 30.1 | 31.3 | 34.9 | 35.8 | 36.1 | 41.8 |

rounds 1 to 7, respectively. To help grasp some of the diversity of these results, the trucks have been divided into groups by engine make and displacement and the average emission levels of each group for each inspection round have been calculated. Figures 11 to 13 are histograms of these averages for HC, CO and corrected NO, respectively. An examination of these figures shows that there is rarely a clear trend in the emission changes between rounds. These histograms do, however, show the tendency for those engine groups that are comparatively low emitters to remain low emitters and those that are high emitters to remain high emitters for any of the emissions measured.

B. Results by Odometer Miles

Since the individual vehicle mileage varied somewhat at the initial inspection and the rate of mileage accumulation varied widely, changes between inspections (which were done at regular time intervals) are not necessarily reflective of changes with mileage. To gain some understanding of the changes occurring with mileage, the inspection results for each truck were plotted as a function of odometer mileage. These plots are contained in Appendix E. While it would be desirable to have a summary of the results at regular mileage intervals, this would generally require interpolation between test points.

The curves in Appendix E use straight lines between points as strictly a visual aid. The graphs are not intended to indicate that the emissions necessarily follow a straight line between tests. In fact, it seems probable that where very large increases in emissions occur, that the change is due to some component failure, rapid deterioration, or adjustment change, and is therefore probably a step function. Maintenance, such as replacing bad points and spark plugs, is capable of producing large decreases in emissions, giving a step decrease at the mileage at which the maintenance was performed. Therefore, no attempt has been made to average emissions at mileage increments either for the fleet as a whole or for individual engine groups.

To help comprehend the emission changes with mileage, the test points for the seven inspections on each truck have been plotted in Figures 14, 15 and 16 for HC, CO and corrected NO, respectively. These scatter plots make no attempt to identify individual trucks or data trends for individual trucks. The plots show the large range of emission levels obtained at all mileages. The 1970 Federal emission standards are shown on the plots for reference purposes. From a visual inspection of these plots, it appears that the majority of the HC test levels were below the Federal standard of 275 ppm regardless of

Note: Federal standards refer to official engine-dynamometer FTP.
These vehicle tests run on unofficial chassis version of FTP.

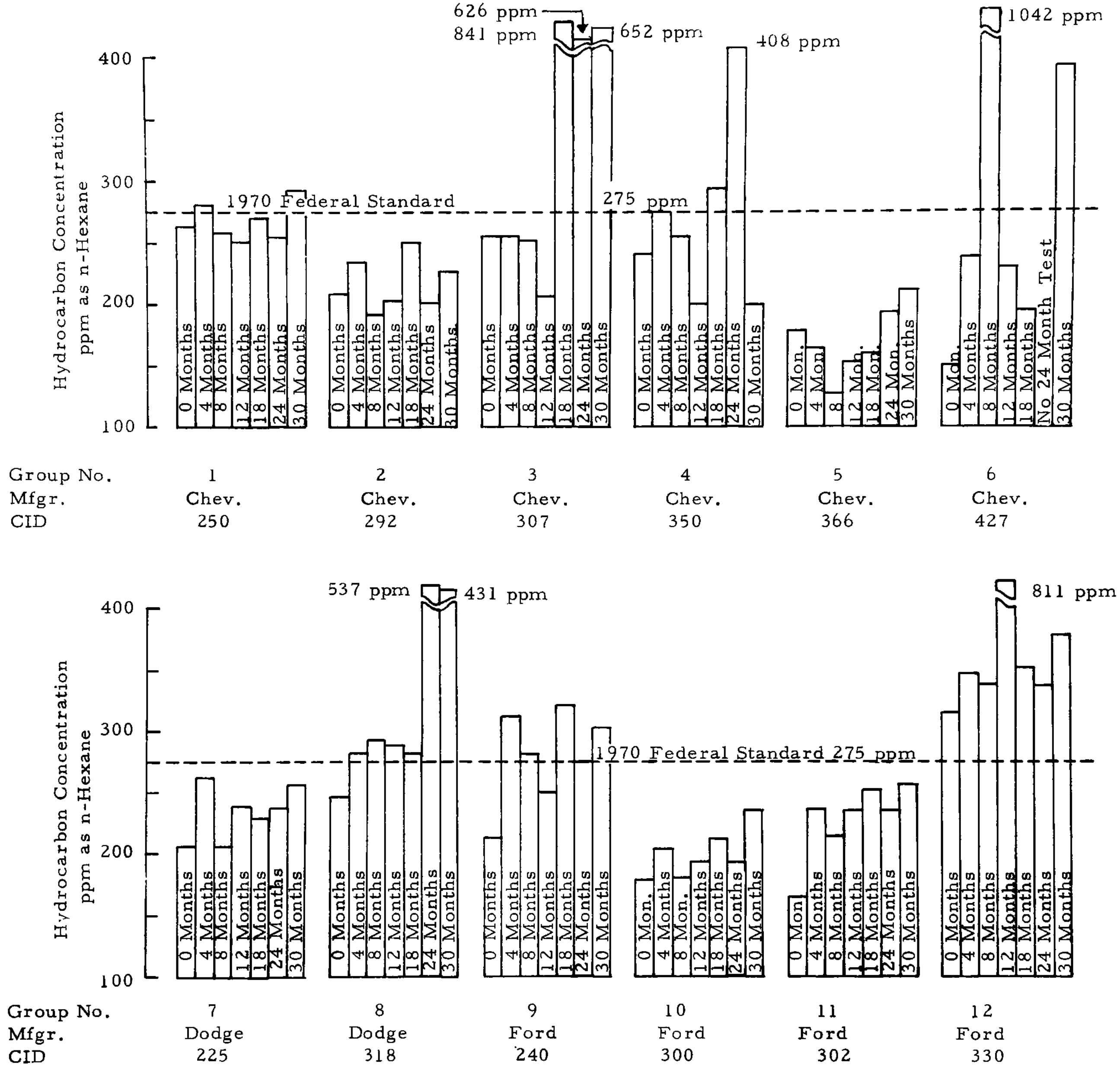



FIGURE 11. EXHAUST HYDROCARBON AVERAGE EMISSION LEVELS FOR THE 23 ENGINE MODEL GROUPS COMPRISING THE SURVEILLANCE FLEET "0" MONTHS THROUGH 30 MONTHS INSPECTIONS (Cont'd on next page)

Note: Federal standards refer to official engine-dynamometer FTP
These vehicle tests run on unofficial chassis version of FTP

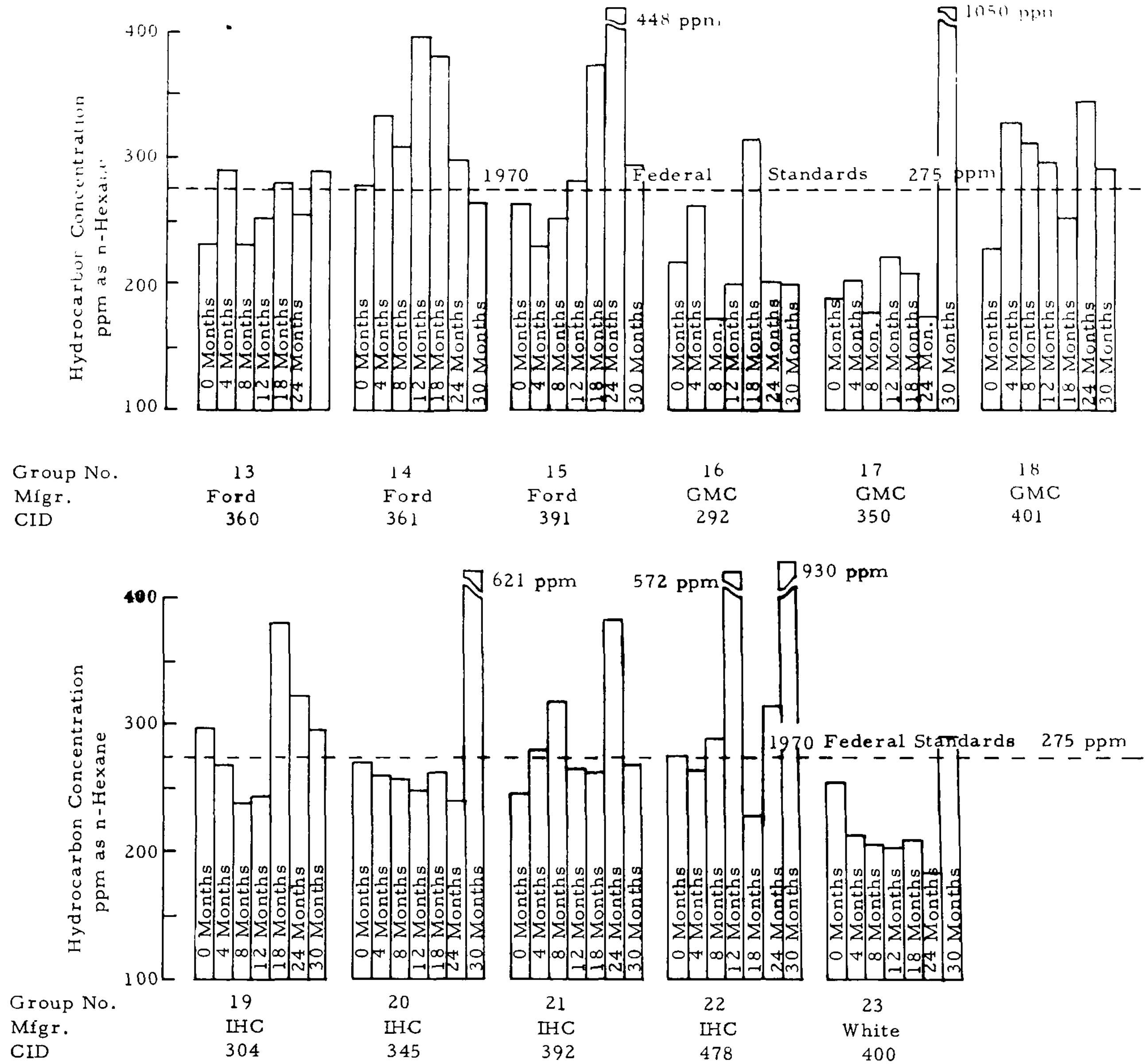
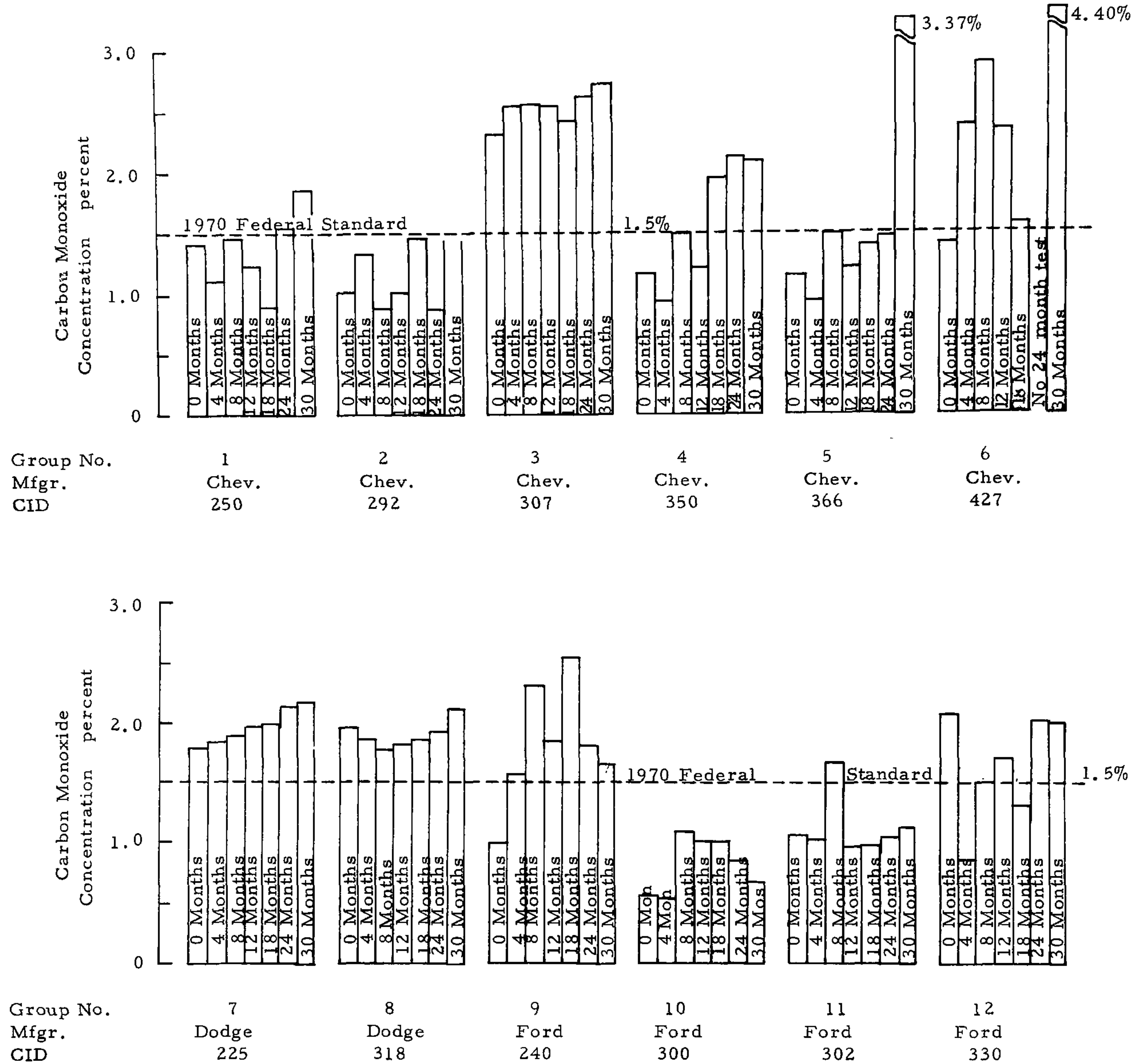



FIGURE 11 (Cont'd). EXHAUST HYDROCARBON AVERAGE EMISSION LEVELS FOR THE 23 ENGINE MODEL GROUPS COMPRISING THE SURVEILLANCE FLEET "0" MONTHS THROUGH 30 MONTHS INSPECTIONS




Note: Federal standards refer to official engine-dynamometer FTP.
These vehicle tests run on unofficial chassis version of FTP.

FIGURE 12. EXHAUST CARBON MONOXIDE AVERAGE EMISSION LEVELS FOR THE 23 ENGINE MODEL GROUPS COMPRISING THE SURVEILLANCE FLEET "0" MONTHS THROUGH 30 MONTHS INSPECTIONS (Cont'd on next page)

Note: Federal standards refer to official engine-dynamometer FTP. These vehicle tests run on unofficial chassis version of FTP.

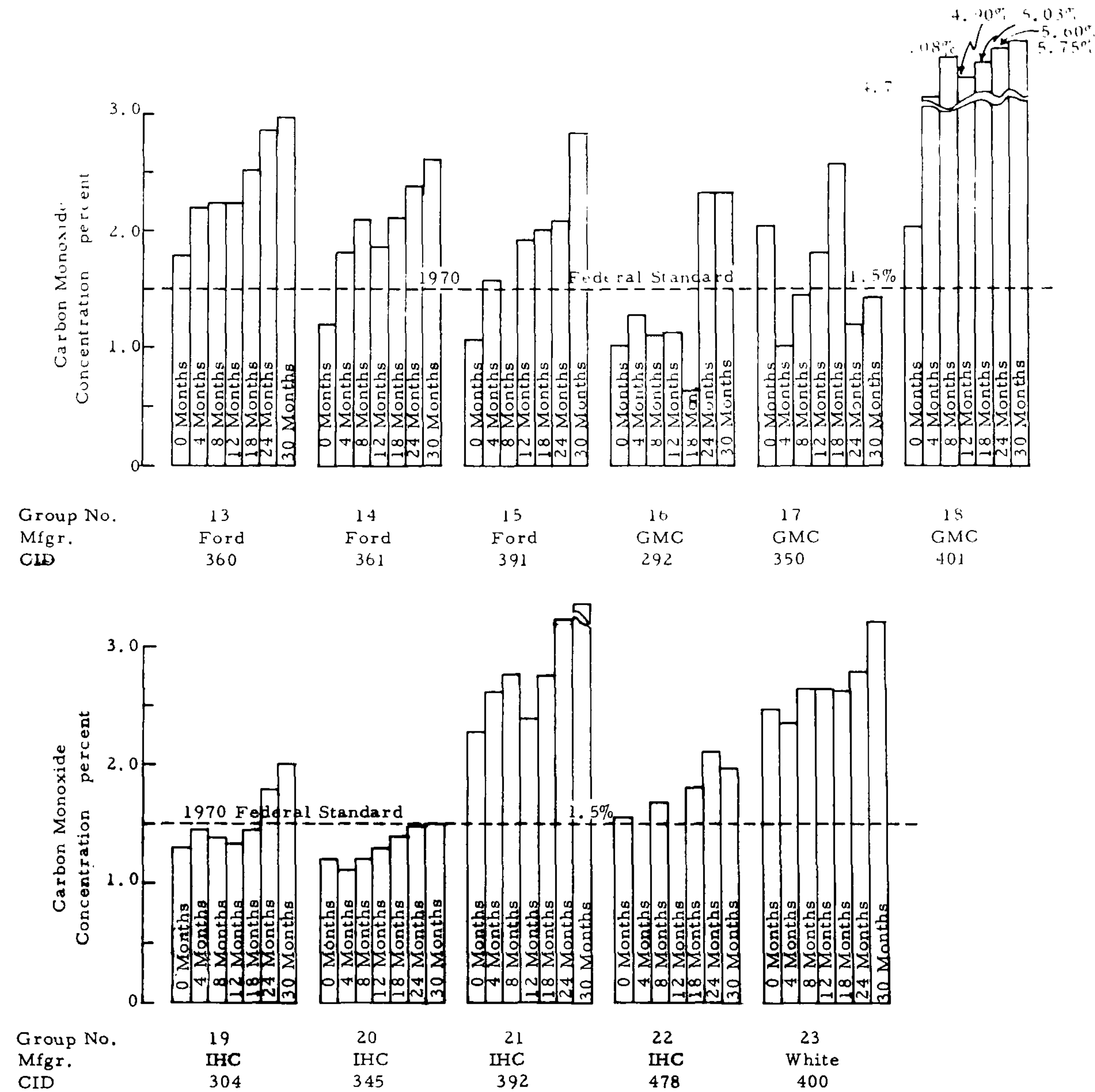
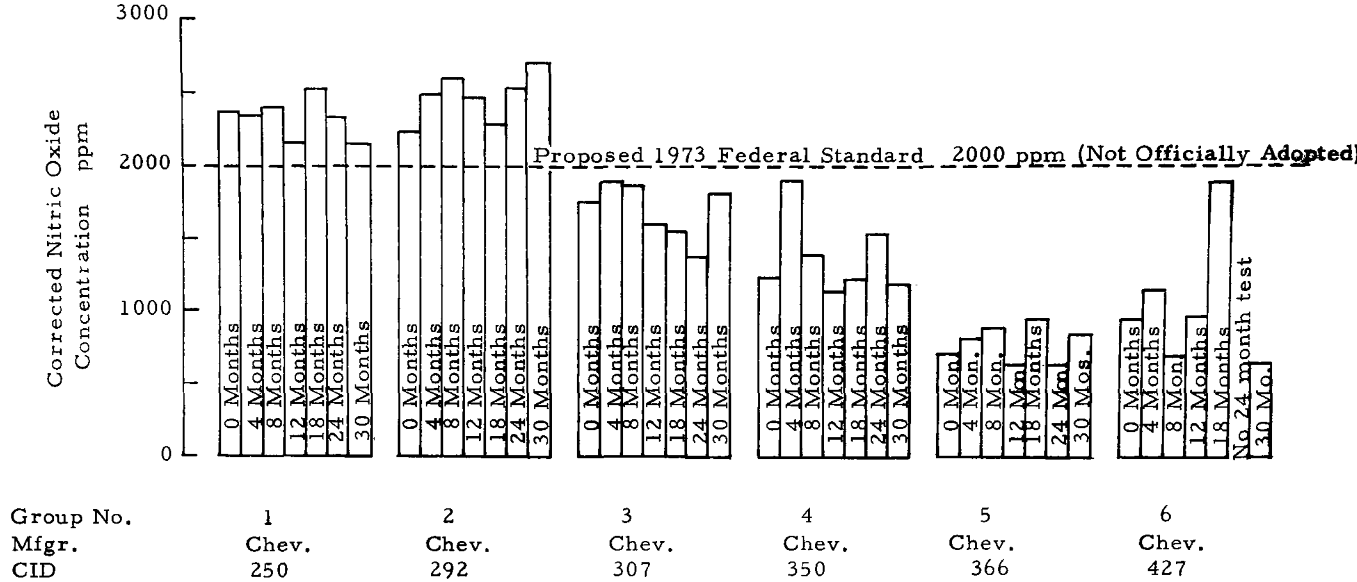



FIGURE 12 (Cont'd). EXHAUST CARBON MONOXIDE AVERAGE EMISSION LEVELS FOR THE 23 ENGINE MODEL GROUPS COMPRISING THE SURVEILLANCE FLEET "0" MONTHS THROUGH 30 MONTHS INSPECTIONS

Note: Federal standards refer to official engine-dynamometer FTP. These vehicle tests run on unofficial chassis version of FTP.



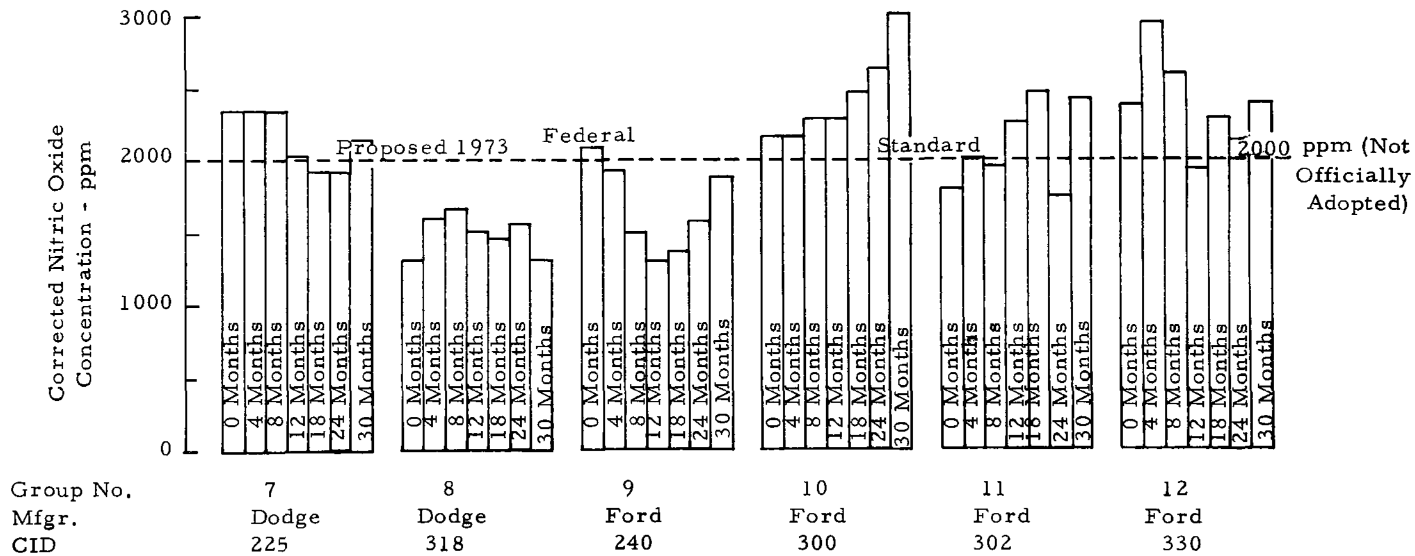
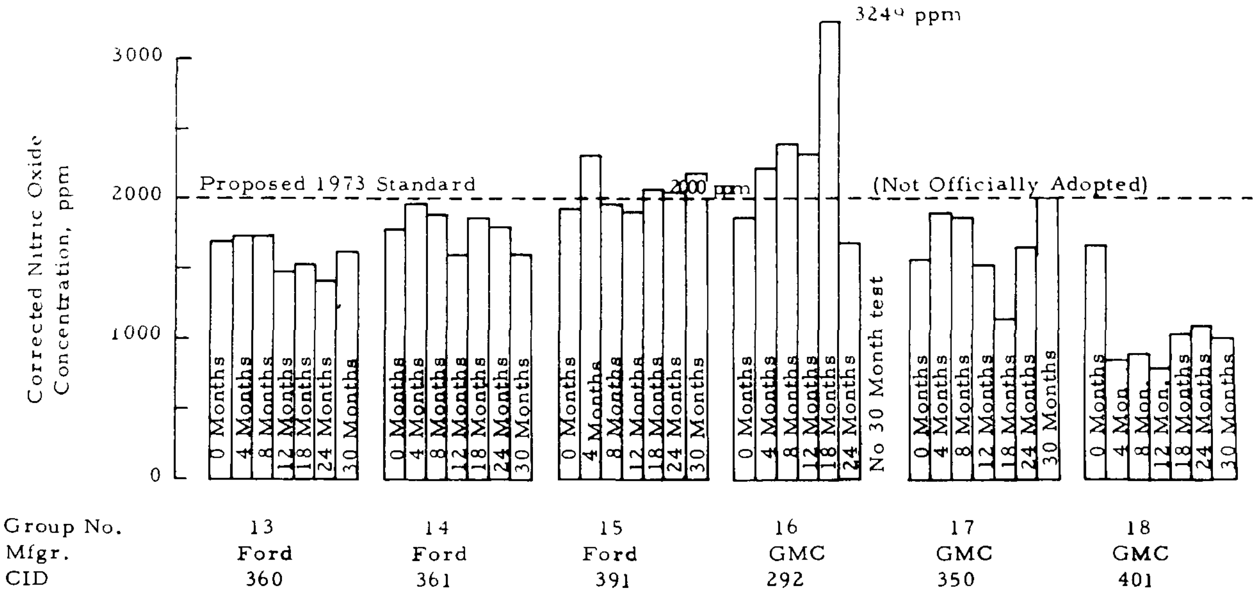




FIGURE 13. EXHAUST CORRECTED NITRIC OXIDE AVERAGE EMISSION LEVELS FOR THE 23 ENGINE MODEL GROUPS COMPRISING THE SURVEILLANCE FLEET "0" MONTHS THROUGH 30 MONTHS INSPECTIONS (Cont'd on next page)

Note: Federal standards refer to official engine-dynamometer FTP
These vehicle tests run on unofficial chassis version of FTP



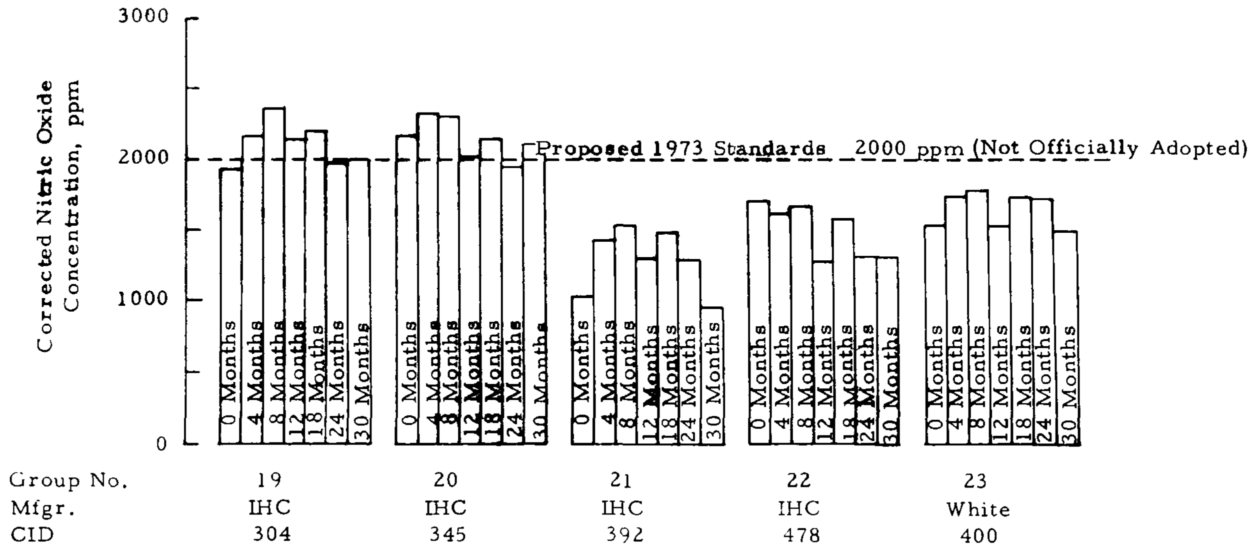




FIGURE 13 (Cont'd). EXHAUST CORRECTED NITRIC OXIDE AVERAGE EMISSION LEVELS FOR THE 23 ENGINE MODEL GROUPS COMPRISING THE SURVEILLANCE FLEET "0" MONTHS THROUGH 30 MONTHS INSPECTIONS

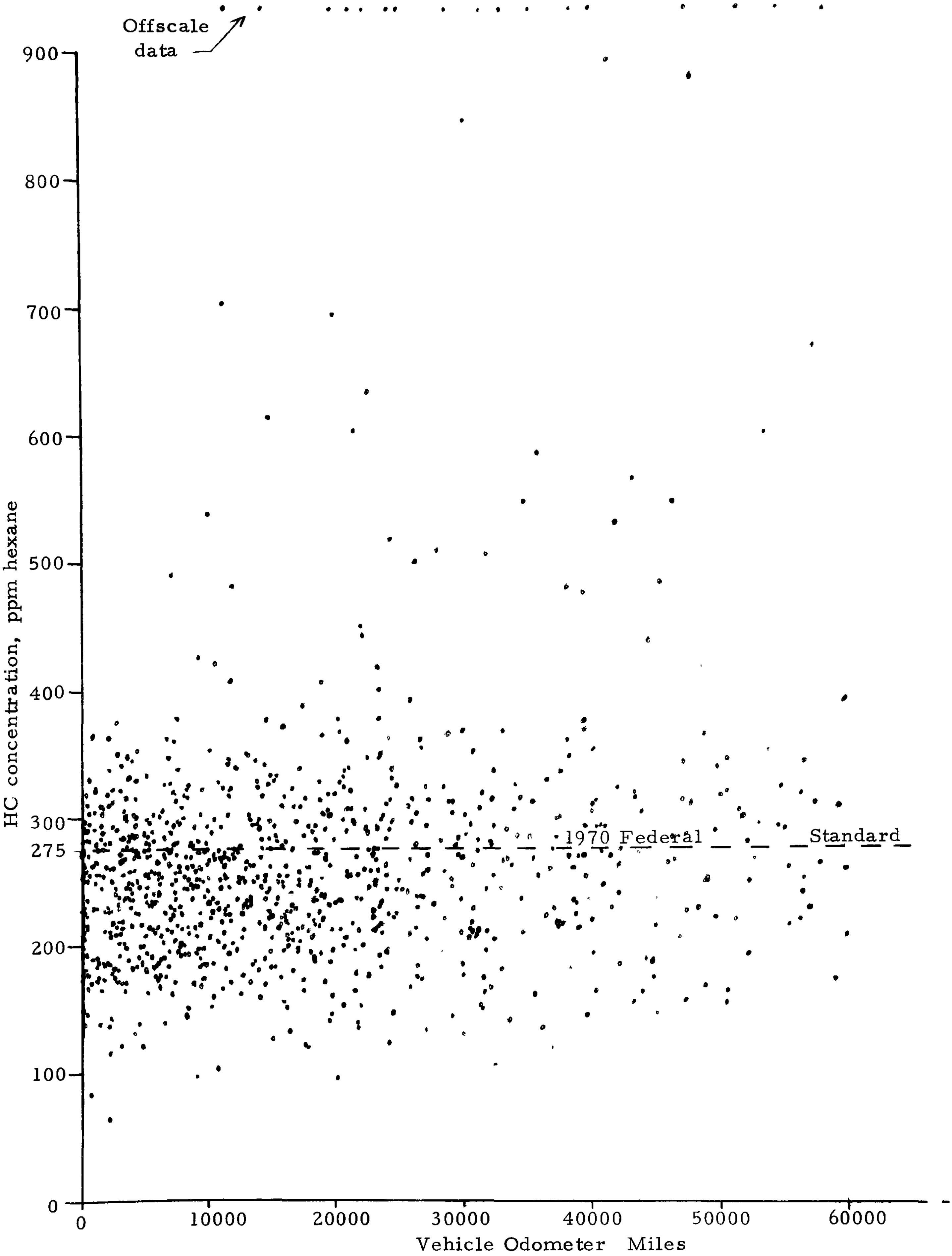



FIGURE 14. HYDROCARBON TEST LEVELS FOR ALL SURVEILLANCE TESTS AS A FUNCTION OF ODOMETER MILEAGE

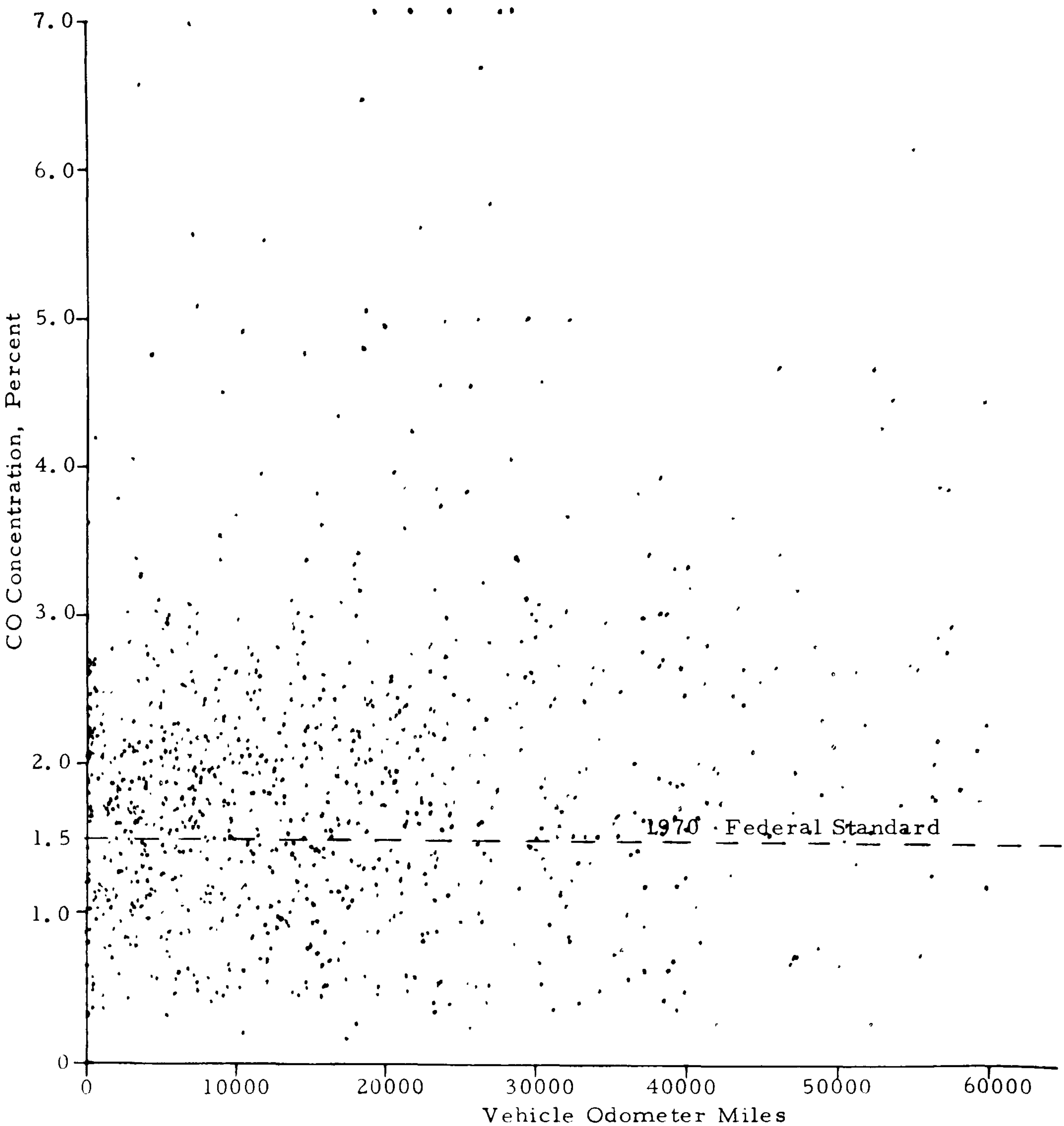



FIGURE 15. CARBON MONOXIDE TEST LEVELS FOR ALL SURVEILLANCE TESTS AS A FUNCTION OF ODOMETER MILEAGE

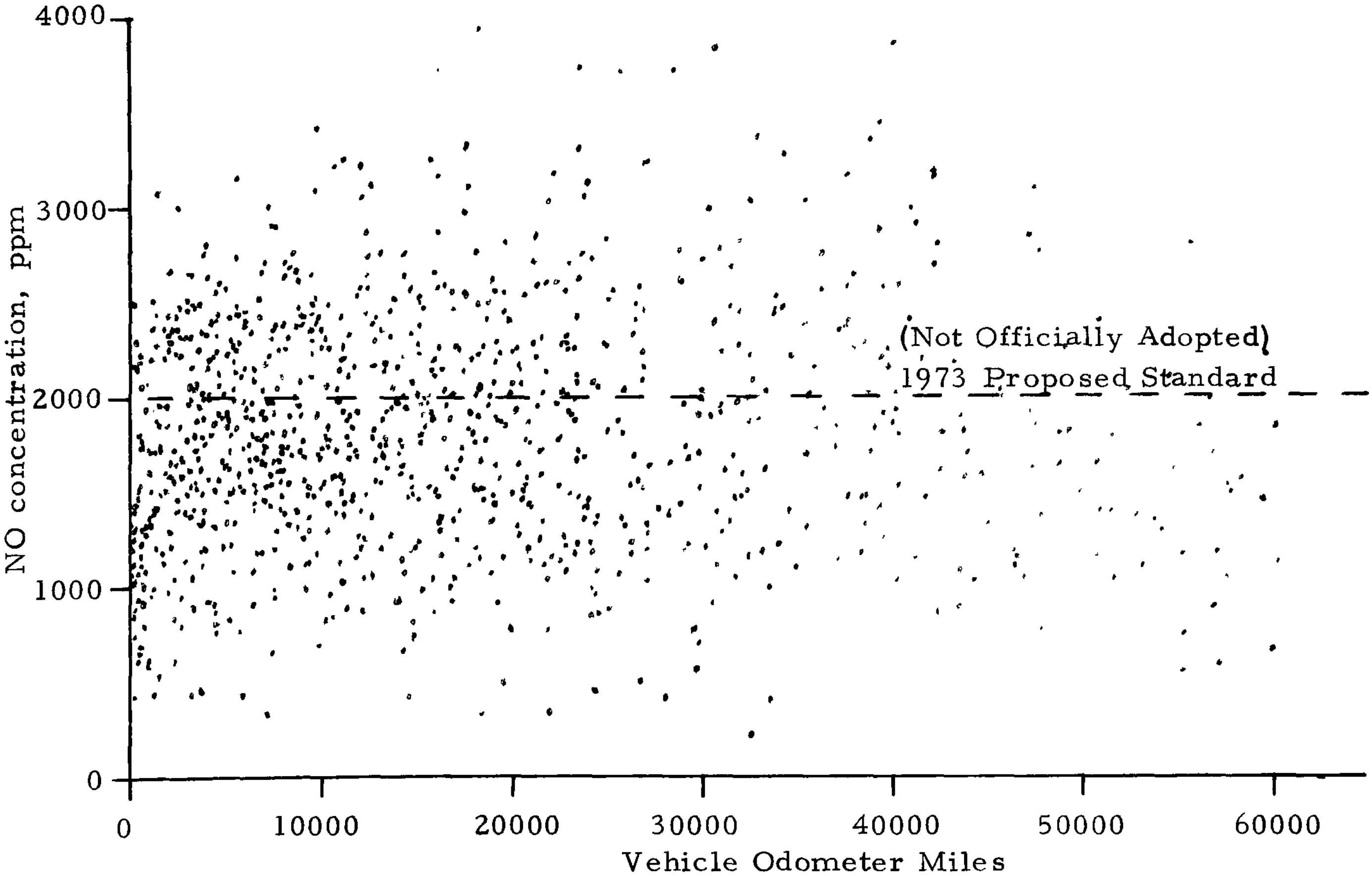



FIGURE 16. NITRIC OXIDE TEST LEVELS FOR ALL SURVEILLANCE TESTS AS A FUNCTION OF ODOMETER MILEAGE

mileage, the majority of the CO test levels appear to be above the Federal standard of 1.5 percent, and the majority of the NO test levels are below the proposed 1973 standard of 2000 ppm, regardless of mileage. The analysis of the effects of mileage on emissions is covered in Section VI-C, where these plots will again be referred to.

## VI. ANALYSIS OF SURVEILLANCE FLEET TEST RESULTS

The analysis presented in this section falls into two areas. The first area was the analysis done to meet the objectives of the project. This is covered in the first three subsections. The remainder of this section is a first attempt to analyze some of the reasons behind the behavior of the test results.

### A. Effectiveness of Exhaust Emission Controls

The first objective of this study was to determine the effectiveness of the exhaust emission controls on 1970 and 1971 heavy-duty gasoline trucks. To do this, the initial surveillance inspection was performed when the vehicles were new, or nearly new, and tuned to manufacturer's specifications for timing and idle speed. The fleet average results for this inspection were presented in Table 6. While this table shows the fleet average HC level was below the Federal standard of 275 ppm hexane and the fleet average CO level was above the Federal standard of 1.5 percent, this does not adequately define the effectiveness of the exhaust emission controls. To do this, the percent of trucks with emission levels below the Federal standards should be known. Figure 17 shows the cumulative frequency distribution of HC, CO, and NO for the first round inspections. Entering the graphs of HC and CO at the emission levels of the Federal standards, it can be seen that approximately 70 percent of the fleet had HC emission levels below the Federal standards; while slightly less than 50% of the fleet had CO emission levels below the Federal standard.

As explained previously, the surveillance test results cannot be compared to Federal standards on an engine by engine basis. However, it is felt that the correlation between chassis and stationary dynamometer tests is close enough that the Federal standards may be used as a frame of reference for the fleet as a whole. Thus, where the majority of the fleet falls substantially within the Federal standards it is probable that most of the engines in the fleet would meet the Federal standards if tested on a stationary engine dynamometer.

With the initial effectiveness of the emission controls determined, the next two subsections of the report deal with the second objective of the project: to establish the performance of the exhaust emission controls with time and mileage accumulation.

### B. Effects of Time in Service on Emissions

While each of the trucks started the surveillance program with a slightly different time in service, it is felt that changes between

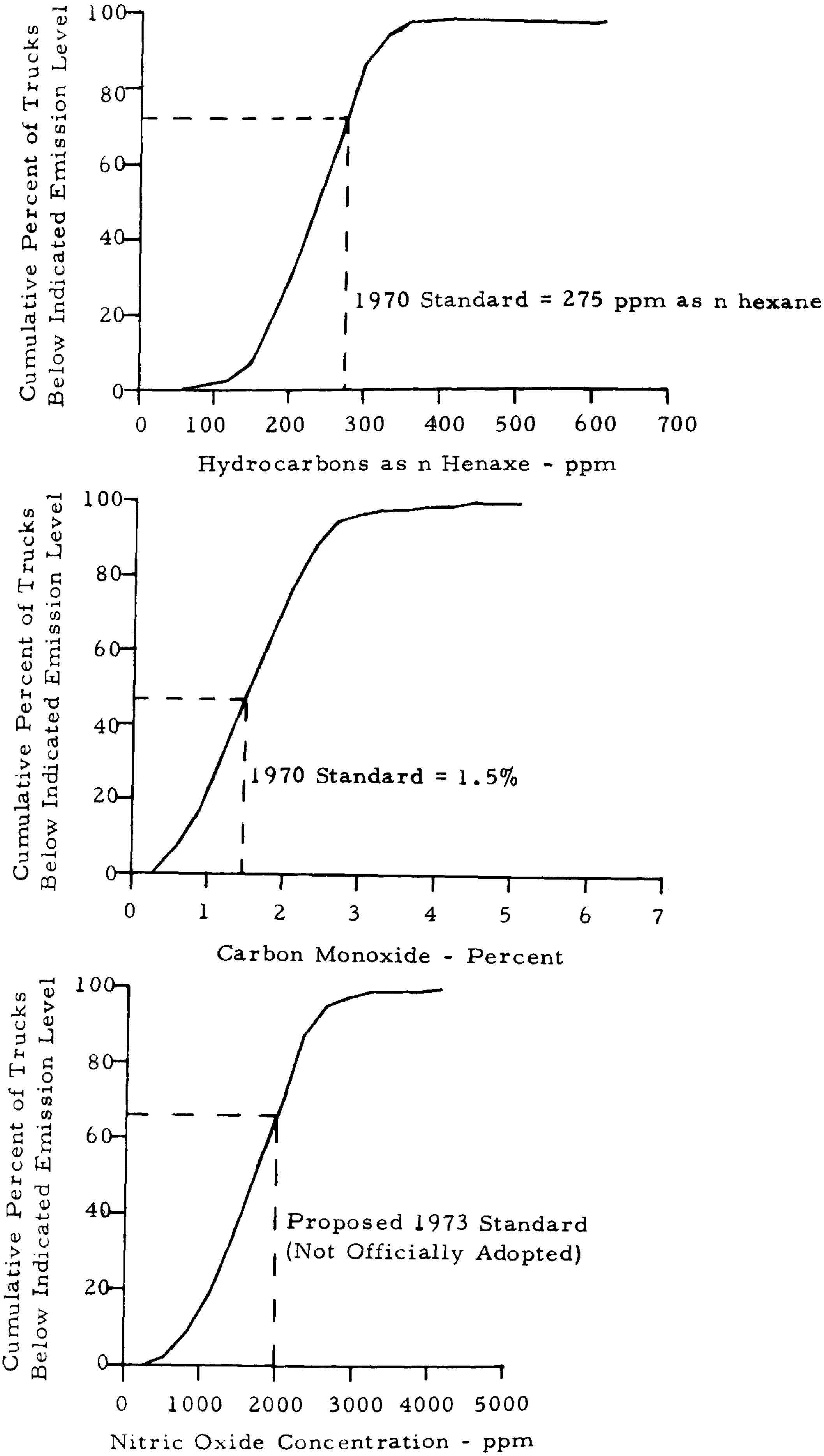



FIGURE 17. CUMULATIVE FREQUENCY DISTRIBUTION OF EXHAUST EMISSION LEVELS FOR FIRST ROUND INSPECTIONS (152 TRUCKS)

inspection rounds will give a satisfactory indication of the effects of time on emission levels. The trend for fleet average HC and CO emissions to increase with time has been mentioned in Section V and is easily seen in Table 6 in that section. The table also shows that there was little change in corrected NO with time.

Since the fleet average could be adversely affected by a few trucks with extremely high emission levels, perhaps a better way to understand the behavior of the surveillance fleet emissions with time would be to examine the changes in cumulative frequency distribution of emission levels from round to round, comparing the percentage of trucks below a given emission level (for instance, the Federal standards) for each inspection round. Figures 18, 19, and 20 present the cumulative frequency distribution curves for all seven inspection rounds for HC, CO, and corrected NO, respectively.

These plots show the differences in slopes and emission levels for given cumulative percentage from round to round and can be used to investigate the fleet behavior in a variety of ways. However, it is hard to compare the percentage below the Federal standard for each round using these plots. To better visualize the change with time, the percentage of trucks below the Federal standard has been plotted as a function of the nominal time in service for each test round in Figure 21 for HC, CO, and corrected NO.

There are two important conclusions that can be drawn from this graph. The first is that throughout the two and one half years of surveillance tests, the majority of the trucks continued to be within the 1970 Federal standards for HC and the 1973 proposed (but not adopted) standards for NO. However, during the surveillance period, the majority of the fleet continued to have CO levels above the 1970 Federal standards.

Secondly, it can be seen from Figure 21 that there is a definite trend in HC and CO emissions for a smaller percentage of vehicles to be below the Federal standard as time in service increases. For NO, the trend is a slight increase in the percentage of trucks with emission below 2000 ppm. Thus, part of the second objective of the study, to determine the performance of the vehicles exhaust emission controls with time in service, was accomplished. There was a slight deterioration in the ability to hold HC levels down for the fleet as time progresses and a somewhat larger effect on CO levels with time, with no such effect on the NO levels with time.

It is felt that any increase in HC and CO exhaust emission levels was the result of general engine deterioration and not the result of a

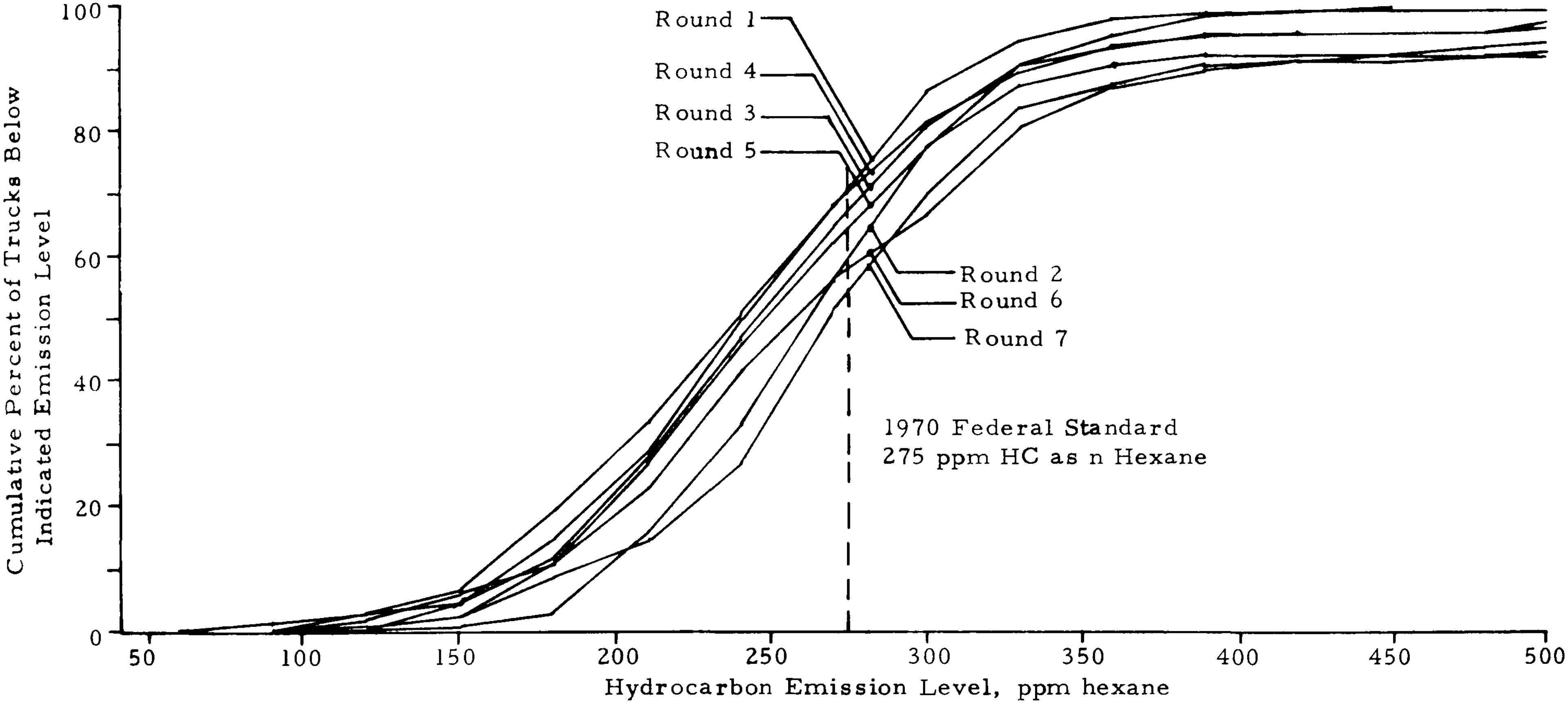



FIGURE 18. CUMULATIVE FREQUENCY DISTRIBUTION OF HYDROCARBON EXHAUST EMISSIONS FOR ALL INSPECTION ROUNDS

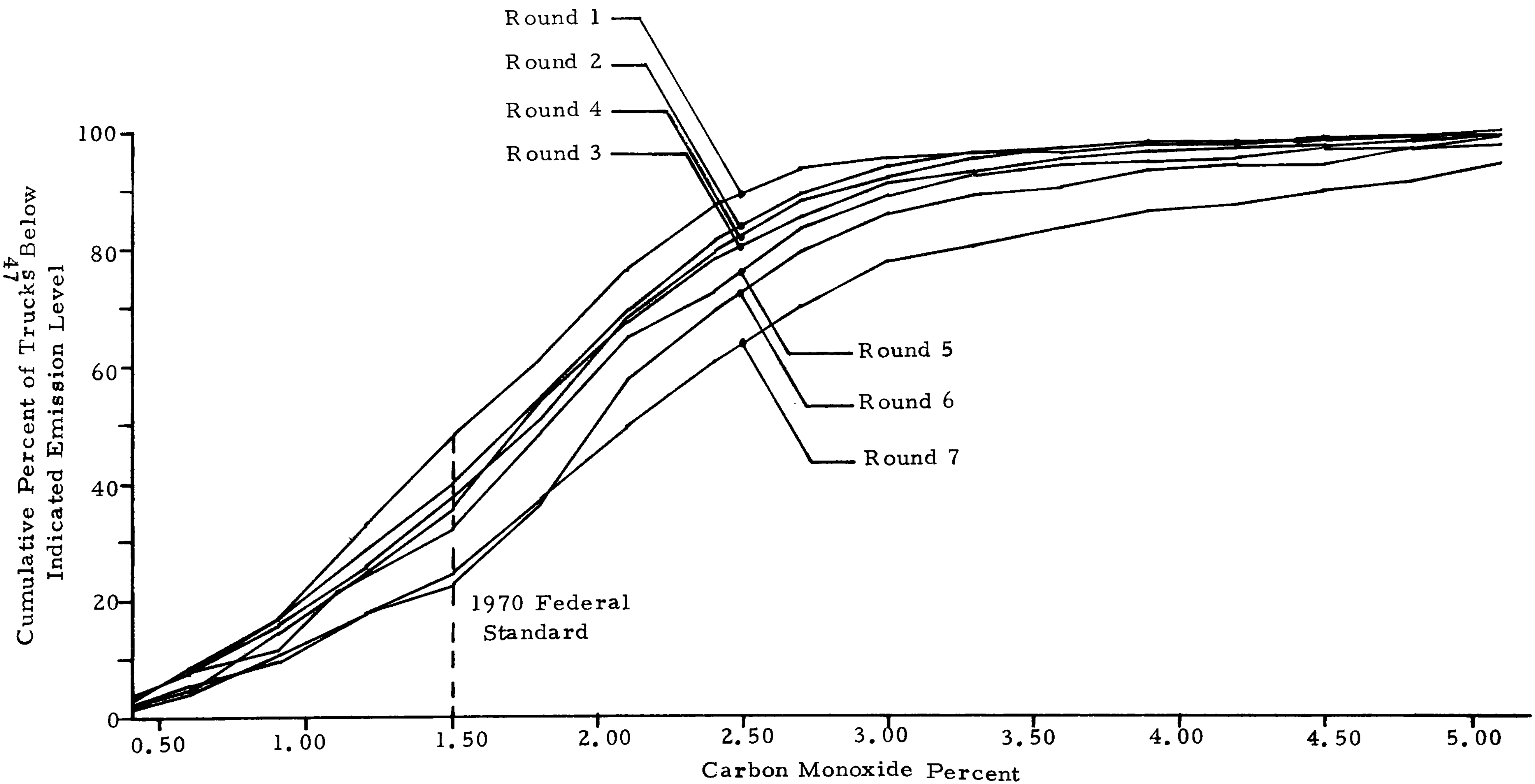



FIGURE 19. CUMULATIVE FREQUENCY DISTRIBUTION OF CARBON MONOXIDE EMISSIONS FOR ALL INSPECTION ROUNDS

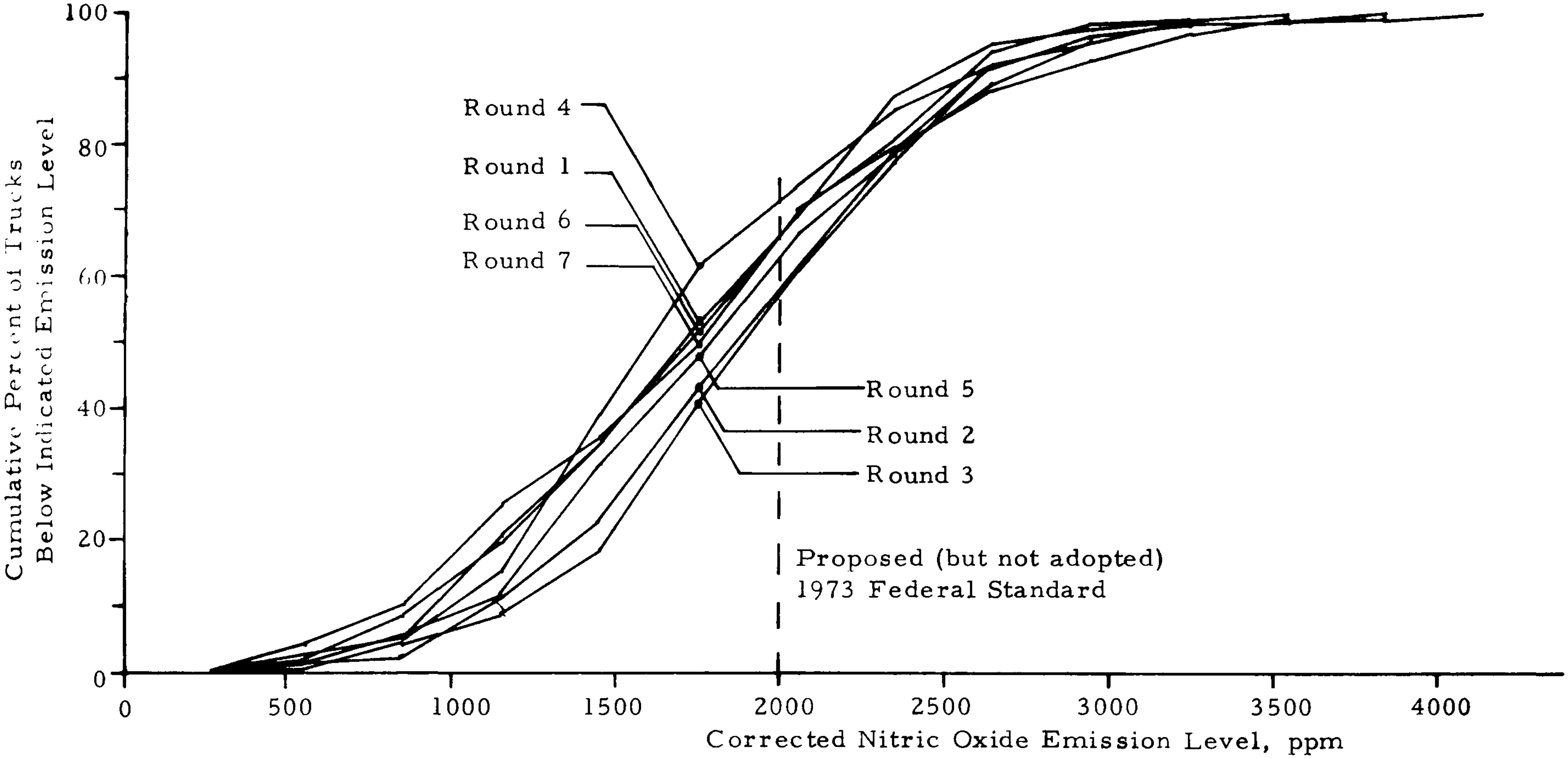



FIGURE 20. CUMULATIVE FREQUENCY DISTRIBUTION OF CORRECTED NITRIC OXIDE EMISSIONS FOR ALL INSPECTION ROUNDS

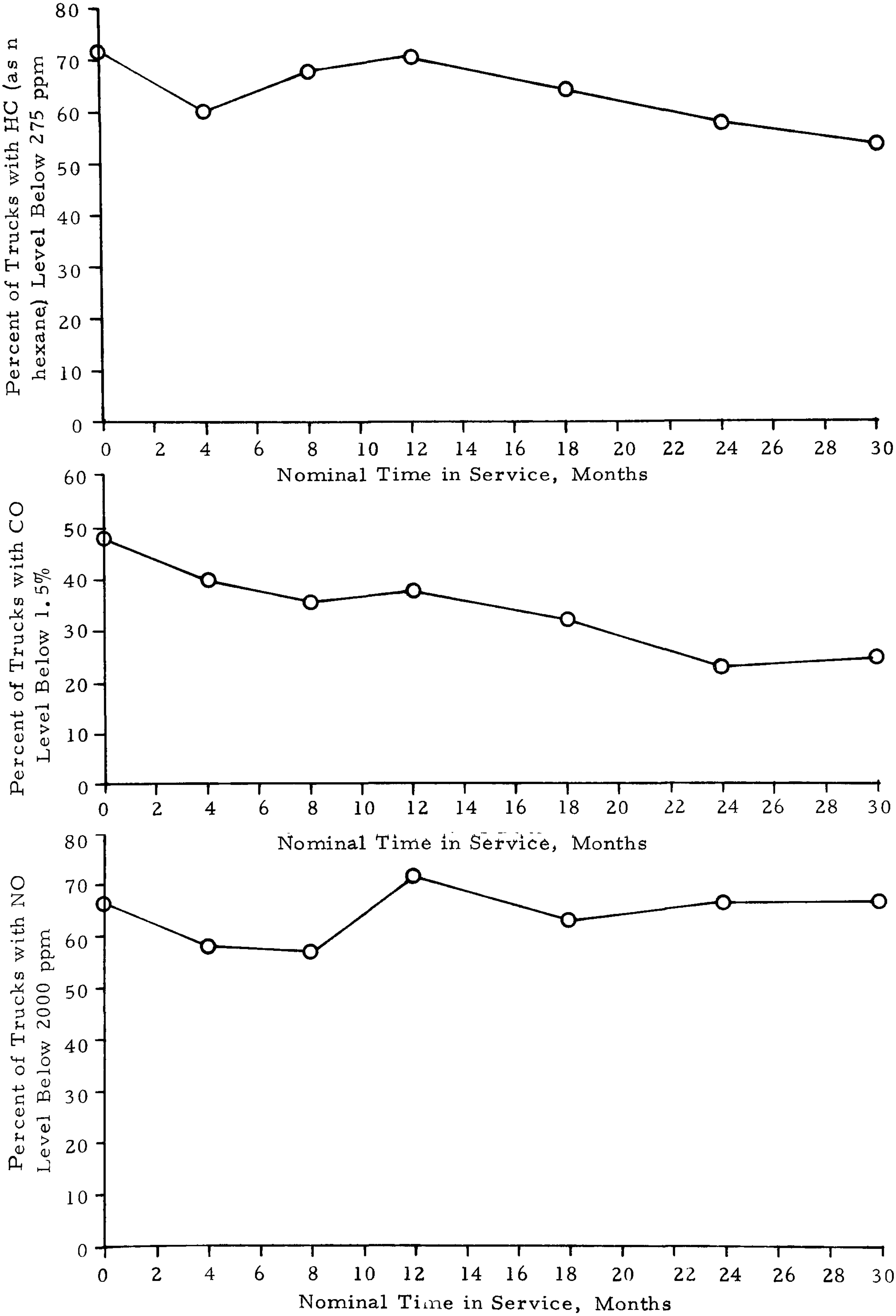



FIGURE 21. PERCENT OF TRUCKS WITH EMISSION LEVELS BELOW FEDERAL STANDARDS AS A FUNCTION OF TIME

particular exhaust emission control "device". The air injection system was the only external add-on exhaust emission control device used on trucks of the model years tested, and it was used on only a few models. Most trucks obtained the exhaust emission control required by ignition system and carburetion adjustments. This premise is reinforced by the fact that the percent of trucks with NO emission levels below 2000 ppm increases with time in service (i.e., NO levels are decreasing slightly). Thus, with deterioration of the engine and its subsystems as indicated by increased HC and CO, combustion efficiency decreased with the expected effect of lessening NO emissions.

C. Effects of Mileage on Emissions

The test results as a function of mileage were given in Section V-B. The scatter plots in that section, Figures 14 to 16, showed no obvious trends with mileage. A linear regression analysis was performed on HC, CO, NO and corrected NO results to determine the correlation between mileage and emission level. The correlation coefficients are shown below.

| | Emission | | | |
|---|---|---|---|---|
| | HC | CO | NO | Corrected NO |
| Correlation Coefficient with Mileage | .17 | .15 | .05 | .05 |

Recalling that a perfect correlation would give a correlation coefficient of 1.00, it appears that the correlation coefficients obtained are small enough to conclude that there is no relationship between emission level and mileage for the fleet as a whole. However, emission levels have been shown to vary widely between engine groups and the possibility exists that emission changes with mileage may vary from engine group to engine group. Thus the emission level and mileage plots for the whole fleet may mask changes occurring within engine groups.

An effort was made to define emission changes with mileage in a more exact manner for each engine group. To do this, a method of normalizing the emission test results was developed. This method allows the use of each individual truck's results with all other trucks in an engine group, despite large differences in absolute levels of emissions from truck to truck. A computer program was used to calculate the percentage change of each of the three pollutants versus total mileage for each vehicle within an engine model group. This percentage change was based on a common mileage for each engine group and was defined as the highest mileage for any vehicle in the group at the time of the initial test round. This definition was chosen to avoid having to extrapolate data trends, since all vehicles would eventually reach the base mileage. The computer program first finds the equations of the straight lines joining the emission results from the seven inspection tests for each truck within a given engine group. This is done for HC, CO, observed NO, and corrected NO. The resulting six equations for the six lines connecting the seven data points were used to calculate the emission values at the base mileage for each vehicle. The percentage differences between these base emission values and the emission results from each round of testing were then calculated. A sample calculation for one engine group is included in Appendix F.

This analysis was completed for all engine model groups, even if all trucks in the group did not reach the base mileage by the last inspection round. In the eventuality that any truck had not reached the base mileage by the last inspection round, either the truck that had not reached the base mileage was not included or the truck whose first test mileage was used as the base mileage was deleted to lower the base mileage, whichever resulted in the fewest trucks being dropped from the analysis. Where a truck was out of specification for timing and idle speed when tested and then tested "in spec", the "in spec" test results were used for this analysis to eliminate one of the variables that affect emission levels. Plots of these percentage differences in emissions versus odometer miles for all engine groups are presented in

These plots again emphasize the difficulty in arriving at specific conclusions about emission level changes with mileage. However, some generalizations can be made. First, the magnitude of changes is generally within -40 percent to +60 percent of the base value. Hydrocarbons exhibit the largest number of changes over 100 percent. Nitric oxide has the fewest changes over 100 percent. Secondly, some conclusion about the direction of change can be made. For HC, most of the engine groups have results either predominately higher or have an equal number of tests higher and lower than the HC level from the minimum mileage.

For CO, most of the engine groups have results that are predominately higher than the CO level at the minimum mileage for the engine group. This is the most evident conclusion from the analysis that as mileage increases, CO levels become generally higher than initial levels though the CO levels do not necessarily change in a predictable fashion. For NO, the engine groups showing an equal number of data points above and below the level at the minimum mileage point and those groups showing predominately decreasing levels are about equal in number.

Lastly, some of the engine groups do exhibit definite trends with mileage for some of the emissions considered. While these trends were not subjected to a rigorous analysis, a visual inspection was made and a judgment as to the magnitude and direction of the trend given. Table 7 presents the results of this visual inspection. As can be seen from the table, for the majority of the engine groups that showed some

TABLE 7. ENGINE MODEL GROUP EMISSION TRENDS WITH MILEAGE

| Engine Model Group Number | No. of Trucks in Group | Emission Trend With Mileage | | |
|---|---|---|---|---|
| | | Hydrocarbons | Carbon Monoxide | Corrected Nitric Oxide |
| 1 | 4 | No change | No trend | No change |
| 2 | 2 | No change | No trend | Increased slightly to 25,000 miles, then decreased to 50,000 miles |
| 3 | 11 | No trend | Increased greatly from 0 to 50,000 miles | No change |
| 4 | 7 | No trend | No trend | Increased slightly from 0 to 25,000 miles, then decreased to 50,000 miles |
| 5 | 2 | No trend | No trend | No trend |
| 6 | 2 | No trend | No trend | Increased moderately from 0 to 25,000 miles, then decreased moderately to 50,000 miles |
| 7 | 8 | No trend | Increased moderately from 0 to 25,000 miles | No trend |
| 8 | 15 | No trend | Increased slightly from 0 to 25,000 miles, then decreased slightly to 50,000 miles | No trend |

TABLE 7 (Cont'd). ENGINE MODEL GROUP EMISSION TRENDS WITH MILEAGE

| Engine Model Group Number | No. of Trucks in Group | Emission Trend With Mileage | | |
|---|---|---|---|---|
| | | Hydrocarbons | Carbon Monoxide | Corrected Nitric Oxide |
| 9 | 3 | Increased slightly from 10,000 to 30,000 miles, then decreased slightly to 50,000 miles | No trend | Decreased slightly from 10,000 to 30,000 miles, then increased slightly to 50,000 miles |
| 10 | 17 | No trend | No trend | No trend |
| 11 | 1 | Only one truck | | |
| 12 | 4 | Increased slightly from 10,000 to 50,000 miles | Increased slightly from 10,000 to 50,000 miles | Decreased slightly from 10,000 to 50,000 miles |
| 13 | 5 | Increased slightly from 0 to 50,000 miles | Increased greatly from 0 to 50,000 miles | Decreased moderately from 0 to 50,000 miles |
| 14 | 3 | No trend | Increased greatly from 10,000 to 50,000 miles | Decreased slightly from 10,000 to 50,000 miles |
| 15 | 4 | Increased slightly from 0 to 30,000 miles | No trend | No trend |
| 16 | 5 | Decreased moderately from 5,000 to 30,000 miles, then moderate increase to 50,000 | No trend | Increased slightly 5,000 to 50,000 miles |

TABLE 7 (Cont'd). ENGINE MODEL GROUP EMISSION TRENDS WITH MILEAGE

| Engine Model Group Number | No. of Trucks in Group | Emission Trend With Mileage | | |
|---|---|---|---|---|
| | | Hydrocarbons | Carbon Monoxide | Corrected Nitric Oxide |
| 17 | 2 | No trend | No trend | No trend |
| 18 | 1 | Only one truck | | |
| 19 | 13 | No change 0 to 50,000 miles | No trend | No trend |
| 20 | 8 | No trend | No trend | Decreased moderately from 5,000 to 50,000 miles |
| 21 | 23 | No trend | No trend | No trend |
| 22 | 7 | No trend | No trend | No trend |
| 23 | 5 | Increased slightly from 5,000 to 50,000 miles | Increased slightly from 5,000 to 50,000 miles | Decreased slightly from 5,000 to 50,000 miles |

trend, HC either had no change or increased slightly during the 50,000 miles. Carbon monoxide increased during the 50,000 miles for all engine groups that showed a trend. For the majority of the engine groups that showed a trend for NO, there was a decrease during the 50,000 miles.

To summarize the effects of mileage on emissions, it appears that there was no trend for the fleet as a whole. However, as mileage increases, CO levels were in general higher than the initial CO level, though there was no discernible relationship between mileage and CO level for the fleet as a whole. About 25 percent of the engine models did exhibit HC and CO emission level trends with mileage; for these engine models the only completely consistent trend was that CO increased with mileage. About 50 percent of the engine groups exhibited a trend for NO emission levels. Slightly more than half of these engine groups showed a decreasing NO level trend with mileage.

Thus the findings for the third objective of the project, to establish the performance of exhaust emission controls with mileage accumulation, are a good deal more nebulous than the findings for the first two objectives. As mentioned previously, when a truck was received for test "out of spec" for timing and idle speed, it was tested "as received" and then set to specifications and retested. These tests were compared to determine the effects of timing and idle speed on emissions. The results of that comparison are presented in the next section.

D. Effects of Timing and Idle Speed

As explained in Section III, the surveillance trucks were checked for timing and idle speed prior to each surveillance test. All vehicles tested in round 1 were intentionally run with timing and idle speed within manufacturers' specifications. The vehicles found to be out of timing and idle speed specifications during the other inspection rounds were tested as-received then adjusted to manufacturers' specifications for timing and idle speed and retested. The trucks were restored to the as-received condition prior to being returned to service.

Appendix Tables D-36 to D-41 show the as-received and "in spec" emission levels for those vehicles found to be out of specification for rounds 2 to 7, respectively. Of the 148 vehicles tested in round 2, 35 vehicles (about 20 percent) were out of specifications limits; for round 4, 24 vehicles of 145 (about 17 percent) were out of specification limits; for round 5, 18 vehicles of 140 (about 13 percent); for round 6, 5 vehicles of 137 (about 4 percent); and for round 7, 2 vehicles of 127 (about 2 percent) were out of specification limits.

The reasons for the drop in the number of out-of-spec vehicles in the last three rounds, and particularly the last two rounds, is not known. One reason is that several of the vehicles that were out-of-spec on previous rounds had reached the 50,000 mile testing limit and were not tested during the last two inspection rounds. Another reason is that the fuel shortage and increase in fuel prices in 1973 may have caused a general renewal of emphasis on maintainance and adjustments among some fleet owners.

Appendix Tables D-42 to D-47 show the percent change in emissions for each truck as the result of adjusting timing and idle speed for each of the inspection rounds. The most common reason for retest was excessively advanced timing. Timing was so advanced on 22 of the 35 vehicles requiring tests in round 2, 17 of 29 in round 3, 13 of 24 in round 4, 7 of 18 in round 5, 5 of 5 in round 6, and 2 of 2 in round 7. When the early timing was corrected, there was a substantial reduction in nitric oxide emission levels. A smaller, but fairly consistent reduction in hydrocarbons and carbon monoxide can also be seen. For those vehicles with late timing in almost every case emissions increased when adjusted to manufacturers' specifications.

## E. Effects of Vehicle Variables

The plots of the individual truck emission levels in Appendix E and Figure 14 to 16 in the preceding section emphasize the wide range in both the emission levels and changes in levels from test to test. Obviously a number of variables affect the test results. Although beyond the scope of this project, an attempt was made to define some of the major variables. It should not be surprising, however, that there will be many individual trucks whose test results run counter to these general conclusions because of the effect of some parameter not considered.

The results from each inspection round were analyzed independently to obtain average, maximum, and minimum values for each contaminant and to determine what factors contributed to the emission level differences within a given round. The average, maximum and minimum values were presented in Table 6 in the previous section along with the standard deviation and coefficient of variation. The standard deviation and coefficient of variation (standard deviation divided by the average) are indicators of the data spread about the average.

For each inspection round, the frequency distribution and cumulative frequency distribution for each emission has been calculated. Plots of these distributions are contained in Appendix D, Figures D-1 to D-14. These plots also show the wide range of values obtained for each emission during an inspection round. The question arises as to whether this data spread is just the result of chance variations between trucks, or whether emission level is a function of some specific factor.

To determine what factors were significant in explaining the variation of emission levels within each inspection round, analysis of variance techniques were used. A linear regression analysis was performed on the first round data when 81 of the 152 trucks had completed testing. The analysis was done on HC, CO, and observed NO with engine make, number of cylinders, and gross weight each as the independent variable. The results indicated that for each emission there was a significant difference due to make. For HC and CO it was the only significant factor. For observed NO, however, the number of cylinders seemed to be more significant than make. The V-8 engines in general seemed to have lower NO emissions than 6 cylinder engines.

When the first test round was completed, examination of the data indicated that engine manufacturer and number of cylinders alone would not explain the differences in emission levels. It was, therefore, decided to analyze the data by engine model (manufacturer, displacement, and number of cylinders) using a one way analysis of variance. This was done for each of the emissions using 17 of the 23 engine model groups in the fleet. Please refer to Appendix Table A-3 for a description of each engine model group. The other six engine model groups had too few engines in the group for statistical analysis. The results of this analysis indicated a statistically significant difference at the .01 significance level. In other words, there was a 1 percent or less change that the emission level differences seen between engine models were due to pure chance.

To ascertain if other variables were significant factors in the emission level differences within the test round, a stepwise multiple linear regression analysis was performed. The following factors were considered:

Engine model (make and displacement) (23)
Transmission (2)
Service Category (6)
Mileage group (4)
Gross weight group (3)
Mileage at start of test

The numbers in parentheses indicate how many categories were in each factor. Please refer to Appendix Table A-4 for a definition of each of these factors (other than engine group) and the trucks included in each group. Variables were defined as follows:

1-22 for engines
23 for transmission
24-28 for service group
29-31 for mileage group
32-33 for gross weight group
34 mileage at start of test
35 HC, CO, or observed NO

Variables 1 to 33 were assigned values of 0 or 1. For example, engine code 1 was represented by assigning zeroes to variables 1 to 22. Engine 2 was represented by assigning a value of 1 to variable 1 and zeroes to variables 2 to 22. A similar coding scheme was used for the other factors.

In general, results from the stepwise multiple linear regression again indicated that engine model (make and displacement) was the most significant factor in explaining variations in HC, CO, and NO. This was the only significant factor for HC. For CO, there appeared to be a slight difference due to type of transmission. It should be noted, however, that of the 44 automatic transmissions, 22 were for the same engine model. Since only 7 of the 23 engine groups had any vehicles with automatic transmissions and these engine groups tended to be substantially all automatic transmissions or have only one automatic in the group, it is very hard to separate transmission from engine group. It would not be expected that transmission type would affect emissions since the nine-mode cycle is an engine exercise based solely on engine vacuum and rpm. It is felt, therefore, that the difference attributed to transmission is really due to engine group.

Initial mileage at the start of the project seemed to be a significant factor in explaining the differences in observed NO. The correlation coefficient between initial mileage and observed NO is 0.401. However, initial mileage correlates well with many of the engine model groups so that it is hard to separate initial mileage and engine group. Again, the best that can be said is that initial mileage may be significant in explaining observed NO emission differences within the first inspection round.

The same multiple linear regression analysis was used on the second round results. The results for round 2 were the same as those for round 1, that is, the most significant factor in explaining emission level differences was engine model. As in round 1, CO differences showed some correlation with type of transmission and odometer mileage seemed to be a factor in observed NO differences.

Since the multiple linear regression analysis showed only those factors that had been previously used to be of significance, it was decided to use the one-way analysis of variance technique on the subsequent rounds since it is easier to use and interpret and will yield just as useful results.

A one-way analysis of variance was performed on the third round data using the factors that had been shown to be significant in the previous two inspection rounds. The analysis was done on each emission (HC, CO, observed NO and corrected NO) by engine model group (manufacturer, displacement and number of cylinders) again using 17 of the 23 engine model groups in the fleet. For all emissions, engine group was a statistically significant variable at the .01 significance level. This agrees with the results from rounds 1 and 2 which also showed engine group as a statistically significant variable.

The analysis of variance was also run on both observed and corrected NO using number of engine cylinders as the independent variable. This analysis, too, indicated a statistical significance at the .01 significance level. Since number of cylinders is often an indication of displacement (6 cylinder engines normally having displacements below 300 cubic inches), it may be that displacement would correlate with NO levels. To check this, a regression analysis was performed on corrected NO with engine displacement as the independent variable. Because timing effects NO emissions (see Section VI-D), it was decided to use the data taken with the engine at the specification values for timing and idle speed. The regression analysis failed to show a reasonable correlation between displacement and corrected NO levels for any of six different curve forms.

CO had previously appeared to be somewhat influenced by type of transmission. Although it was felt that this was due to the close correlation between engine model group and transmission type, the relationship was also checked for round 3 inspections using the one-way analysis of variance. There was no correlation at the .01 significance level.

Similar analyses of variance were performed on the fourth through seventh round data. For all of these inspection rounds engine model was a statistically significant variable for CO and observed and corrected NO at the .01 significance level.

Engine model was not a statistically-significant variable for HC emission from the fifth through the seventh inspection round. The reason is probably associated with the increased dispersion of the data. Referring back to Table 6, it can be seen that the coefficient of variation increased from about 80 percent for round 4 to over 100 percent for rounds 5 through 7.

Using transmission type as the independent variable, an analysis of variance was run on CO levels for each of these inspection rounds. There was no correlation at the .01 significance level, except for the seventh round. Thus for three of the seven inspection rounds, CO level appeared to be influenced by type of transmission despite the fact that the test procedure is an engine exercise only. The scope of this project does not allow for further investigation into the reasons for this correlation, but it is presented as a point of possible future interest. The analysis of variance performed on NO emissions with number of engine cylinders as the independent variable showed that number of cylinders was significant at the .01 level for all inspection rounds.

Table 8 summarizes the results of the Analyses of Variance performed on inspection data. The table shows that engine model is the most significant variable in explaining emission level variations for all emissions. This fact lends added importance to the plots of average emissions for each engine group by inspection round presented in Figures 11 to 13. This graphical presentation provides a good overview for comparison of engine groups with each other and with the 1970 Federal standards. Appendix Tables D-8 through D-35 list this information in tabular form together with the minimum value, maximum value and standard deviation for each group.

F. Effects of Maintenance on Emissions

In order to determine if the quality of maintenance had an effect on emission level changes, the surveillance fleet was divided into three maintenance categories. These groups were designated as above average, average, and below average maintenance. Assignment was made by truck source so that all trucks from one fleet source are in the same maintenance category. Appendix Table A-5 lists the trucks, by unit number, assigned to each maintenance category.

For each truck, the change in emissions between its first test and last test was calculated. The average change and standard deviation of each emission type for each maintenance category was also calculated. These results are presented below.

| | Average Emission Level Change in Maintenance Category | | |
|---|---|---|---|
| | Above Average | Average | Below Average |
| HC ppm | 74. | 120. | 205. |
| CO percent | 0.36 | 0.79 | 1.42 |
| Corrected NO ppm | 161. | 25. | -30. |

An analysis of variance was also performed to determine if the difference between groups was statistically significant. The results showed that for CO, maintenance category was a statistically significant variable at the .01 significance level in emission level change between the first and last emission test. Maintenance category was not a significant variable at the .01 level for HC and corrected NO.

TABLE 8. RESULTS OF ANALYSIS OF VARIANCE

| Inspection Round | Engine Group | Transmission Type | Number of Cylinders | Gross Vehicle Weight |
|---|---|---|---|---|
| | | HC | | |
| 1 | S[(1)] | NS[(2)] | NS | S |
| 2 | S | NS | NS | NS |
| 3 | S | | | |
| 4 | S | | | |
| 5 | NS | | | |
| 6 | NS | | | |
| 7 | NS | | | |
| | | CO | | |
| 1 | S | S | NS | NS |
| 2 | S | S | NS | NS |
| 3 | S | NS | | |
| 4 | S | NS | | |
| 5 | S | NS | | |
| 6 | S | NS | | |
| 7 | S | S | | |
| | | Corrected NO | | |
| 1 | S | NS | S | NS |
| 2 | S | NS | S | NS |
| 3 | S | | S | |
| 4 | S | | S | |
| 5 | S | | S | |
| 6 | S | | S | |
| 7 | S | | S | |

(1) S denotes that variable is significant at .01 significance level.
(2) NS denotes that variable is Not significant at .01 significance level.

## G. Discussion of Analysis

Since few unqualified conclusions resulted from the data analysis, the reader is cautioned against using the results out of context or without due regard for how the conclusions were developed. However, within the context of the assumptions and restraints used in this section it is felt that the objectives of the project were fulfilled.

The effectiveness of the 1970 heavy-duty gasoline exhaust emission controls was demonstrated with the first round of chassis nine-mode FTP tests performed on the surveillance fleet. Even though these were chassis tests, the chassis-to-stationary engine dynamometer comparison performed as part of this study indicates that for the fleet as a whole, chassis tests will provide a general guide as to whether the exhaust emission controls were effective. Using the percentage of trucks below the Federal standard as an indicator of the effectiveness of the controls, Figure 17 can be used to make that judgment.

The second objective of the study, to define the performance of exhaust controls with time and mileage accumulation, has also been fulfilled. However, as can be expected with a complex problem, there is no simple answer. From the analysis presented in this section, it appears that time in service may be a more important factor in deterioration of HC and CO exhaust emissions than mileage. As time in service increased there was a definite trend to have fewer trucks within the Federal standards for HC and CO. There was no apparent exhaust emission trend for the fleet as a whole with mileage. Some individual engine groups do exhibit definite trends with mileage, though the trends for a given emission type are not all in the same direction. In fact, sufficient trucks had HC and CO emission that either decreased or did not change during the 50,000 miles of testing to conclude that it is erroneous to assume that exhaust emissions from trucks must increase with increasing mileage. Many factors influence the exhaust emission levels and changes in levels with time and mileage; a few have been examined in this report, but much more needs to be done to understand the behavior of exhaust emission levels from trucks in service.

It could be inferred that 1970 and 1971 gasoline HD trucks required little in the way of specific control and that in effect this project merely demonstrated the quality and durability of the basic engine. It might also be inferred that it remains to be seen what effect more stringent emission levels might play in the in-use aspects of HD gasoline truck emissions with time and mileage. These inferences bring up points that, though beyond the scope of this project, are nonetheless thought provoking.

## VII. SUMMARY AND CONCLUSIONS

With the advent of exhaust emission standards for heavy-duty trucks in 1970, the need became apparent for information on the effectiveness of these controls on trucks in the field and on the emission behavior with time in service and mileage accumulation. The study covered in this report was undertaken to fulfill that need. To meet the objectives of the study, a fleet of 152 trucks in use by a variety of fleet owners in the San Antonio, Texas area was assembled for periodic testing of hydrocarbon, carbon monoxide, and nitric oxide exhaust emissions. The surveillance period was ultimately extended to 30 months or 50,000 miles, whichever came first, with up to seven periodic inspections performed on each truck.

The test used to obtain the exhaust emission levels was a chassis dynamometer version of the nine-mode Federal test procedure (FTP) used for gasoline powered truck certification. To ascertain the correlation between the chassis dynamometer and the stationary engine dynamometer versions of the nine-mode FTP, a group of 10 engines was run on both dynamometers using the nine-mode FTP to determine exhaust emissions. The results of the testing done under this project thus fall into two areas, the first being the results of the correlation tests and the second being the results of the surveillance tests themselves.

The conclusions from the correlation study of the 10 engines tested on both a stationary dynamometer and in a truck on a chassis dynamometer are summarized as follows:

1. There is no one value that will correlate the results of chassis and stationary engine dynamometer FTP tests. The agreement varied from engine to engine and for each emission. The difference between emission levels obtained from the two test methods normally ranged between ±25 percent. More than half of the test results agree within ±15 percent.

2. The generally-close agreement between chassis dynamometer and engine dynamometer test methods demonstrated by the correlation tests validated using the chassis dynamometer version of the Federal Test Procedure in surveillance testing and comparing the fleet averages to Federal standards. However, chassis test results from individual trucks should not be compared to Federal standards on a pass-or-fail basis. Although the stationary engine dynamometer test is the legal certification test method, the chassis dynamometer test is felt to be more realistic and indicative of how the engines perform in actual vehicle operation.

The two and one half years of surveillance testing met the major objectives of the study. The results are summarized below.

1. The 152 surveillance trucks were tested when new, or nearly new, and tuned to manufacturers' specifications for timing and idle speed using a chassis dynamometer version of the nine-mode FTP. Approximately 70 percent of the fleet, when new, had HC levels below the 1970 Federal standard of 275 ppm hexane. Approximately 50 percent of the fleet, when new, had CO levels below the Federal standard of 1.5 percent at that time.

2. The majority of the surveillance fleet had hydrocarbon emission levels less than the 1970 Federal standards of 275 ppm hexane for all inspections during the two and one half years of the program. Nitric oxide emission levels for the majority of the fleet were less than the proposed (but not adopted) 1973 limit of 2000 ppm for all inspections. The majority of the fleet had CO levels greater than the 1970 Federal standards of 1.5 percent for all inspections.

3. The fleet average emission level for HC and CO emissions increased during the surveillance period. The fleet average NO emission level remained essentially unchanged.

4. The percentage of trucks within a test round having HC levels below 275 ppm tended to decrease with increasing time. The percentage of trucks with CO levels less than 1.5 percent also tended to decrease with increasing time. The percentage of trucks with NO levels below 2000 ppm tended to increase with increasing time.

5. Approximately 25 percent of the individual engine groups showed an increase in CO levels with mileage, and about 50 percent exhibited a decrease in NO levels with mileage.

6. Engines with spark timing more advanced than the manufacturers' specifications showed higher levels of NO than was the case where they were adjusted to manufacturers' specifications.

7. The surveillance inspections showed a large range of exhaust emission levels for HC, CO, and NO within each inspection round. Engine model was the most significant factor in explaining this emission level range within any test round.

8. The number of cylinders in an engine correlated with NO level differences within each inspection round. In general, 6 cylinder engines had higher NO levels than 8 cylinder engines.

9. The quality of maintenance was a significant factor in explaining increases in CO levels during the surveillance period.

In conclusion, this study provided the necessary information to evaluate the effectiveness of the 1970 exhaust emission controls. The emission level changes with time and mileage accumulation appear to indicate that time in service is more important than mileage in defining deterioration. Some HC and CO deterioration is evident in the fleet with time. This does not mean, however, that all trucks have higher HC and CO levels at the end of the test than at the beginning. It is quite possible for a truck to have had the same or lower emissions at the end of the surveillance project than at the beginning. Since there were few emission control devices on the trucks, what deterioration that did occur is felt to be due to general engine deterioration. Whether the trends seen in this report are valid for trucks meeting the 1974 standards which require a more stringent level of control is not known. It is therefore recommended that a surveillance study of 1974 trucks be undertaken to ascertain if the emission trends seen in this study are valid for trucks meeting more stringent standards.

## LIST OF REFERENCES


1. 1973 Motor Truck Facts, Motor Vehicle Manufacturers Association of the U. S., Inc.

2. Springer, Karl J., "An Investigation of Emissions from Trucks Above 6000-lb GVW Powered by Spark-Ignited Engines," Final Report to the U. S. Public Health Service, under Contract No. PH 86-67-72, March 1969.

3. Springer, K. J., Williams, G. L., Olsen, R. W., and Mills, K. D., "Emissions from Gasoline-Powered Trucks Above 10,000-lb GVW Using PHS Proportional Sampling Techniques," AIChE Paper No. 53C presented at the Sixty-First Annual Meeting, Los Angeles, California, December 1968.

4. Olsen, R. W. and Springer, K. J., "Exhaust Emissions from Heavy-Duty Vehicles," SAE Paper No. 690764 presented at the National Combined Fuels and Lubricants and Transportation Meetings, Houston, Texas, November 4-7, 1969.

5. Tyree, C. D. and Springer, K. J., "Studies of Emissions from Gasoline-Powered Vehicles Above 6,000-lb Gross Vehicle Weight," Final Report to the National Air Pollution Control Administration under Contract No. PH 86-67-72, July 1970.

6. Springer, K. J. and Tyree, C. D., "Exhaust Emissions from Gasoline-Powered Vehicles Above 6,000-lb Gross Vehicle Weight," Final Report to the Environmental Protection Agency under Contract No. EHS 70-110, April 1972.

7. Federal Register, Vol. 36, No. 219, Department of Health, Education and Welfare, November 10, 1970.

8. Federal Register, Vol. 33, No. 2, Part II, Department of Health, Education and Welfare, January 4, 1968.

9. Federal Register, Vol. 33, No. 108, Part II, Department of Health, Education and Welfare, June 4, 1968.

10. Federal Register, Vol. 36, No. 193, Department of Health, Education and Welfare, October 5, 1971, p. 19400.

11. Krause, S. R., "Effect of Engine Intake-Air Moisture, Temperature, and Pressure on Exhaust Emissions", Ethyl Corporation Research Laboratories, December 1970.

# APPENDIX A

# DESCRIPTIONS OF VEHICLES TESTED

TABLE A-1. DESCRIPTION OF STATIONARY ENGINE-TO-CHASSIS DYNAMOMETER CORRELATION TEST TRUCKS

| No. | Year | Make | GVW | CID | Cyl. | Body | Date | Mileage | Source |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1970 | Ford | 10,000 | 300 | 6 | Stake | 8-71 | 8,200 | Hertz |
| 2 | 1970 | Ford | 7,500 | 240 | 6 | Pickup | 8-71 | 22,500 | Hertz |
| 3 | 1969 | Dodge | 23,000 | 318 | V8 | Stake | 9-71 | 33,500 | O. R. Mitchell |
| 4 | 1970 | White | 30,000 | 400 | 6 | Tractor | 11-71 | 25,300 | ABC |
| 5 | 1971 | Ford | 23,000 | 330 | V8 | Van | 11-71 | 800 | Hertz |
| 6 | 1970 | Chev | 18,000 | 350 | V8 | Van | 11-71 | 11,300 | E Z Haul |
| 7 | 1970 | IHC | 16,000 | 345 | V8 | Van | 12-71 | 9,800 | ABC |
| 8 | 1971 | IHC | 32,000 | 478 | V8 | Tractor | 1-72 | 20,200 | ABC |
| 9 | 1970 | Chev | 14,000 | 292 | 6 | Van | 1-72 | 5,000 | City Parks & Rec. Dept. |
| 10 | 1971 | IHC | 26,000 | 392 | V8 | Maint. | 2-72 | 83 | CPSB |

# TABLE A-2. DESCRIPTION OF SURVEILLANCE FLEET

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans Speeds* | GVW lbs. | Vehicle Type | Initial Mileage |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10-22-70 | P041001 | P. O. D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 8 |
| 2 | 10-22-70 | P040999 | P. O. D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 19 |
| 3 | 10-23-70 | P040997 | P. O. D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 21 |
| 4 | 10-23-70 | P041000 | P. O. D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 38 |
| 5 | 10-23-70 | P041002 | P. O. D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 22 |
| 6 | 11-18-70 | 353 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 9245 |
| 7 | 11-19-70 | 349 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 9109 |
| 8 | 11-20-70 | 351 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 9178 |
| 9 | 11-23-70 | 350 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 9010 |
| 10 | 11-24-70 | 352 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 9552 |
| 11 | 11-25-70 | 24340 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 163 |
| 12 | 11-27-70 | 24341K | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 56 |
| 13 | 11-27-70 | 24343 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 2730 |
| 14 | 11-27-70 | 24342 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 1259 |
| 15 | 11-30-70 | 56 | N. S. S. D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 4196 |
| 16 | 12-1-70 | 53 | N. S. S. D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 4037 |
| 17 | 12-2-70 | 55 | N. S. S. D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 3620 |
| 18 | 12-3-70 | 6 | N. S. S. D. | 1970 | IHC | 345 | V8 | 5 | 22,000 | School Bus | 4197 |
| 19 | 12-4-70 | 54 | N. S. S. D. | 1970 | IHC | 345 | V8 | 5 | 22,000 | School Bus | 3961 |
| 20 | 12-3-70 | 72341 | Hertz | 1970 | Ford | 300 | 6 | 3 auto | 10,000 | Stake | 7361 |
| 21 | 12-4-70 | 72218 | Hertz | 1970 | Ford | 240 | 6 | 3 auto | 7,500 | Pickup | 9108 |
| 22 | 12-4-70 | 5131 | C. P. S. B. | 1971 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 44 |
| 23 | 12-4-70 | 5132 | C. P. S. B. | 1970 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 43 |
| 24 | 12-7-70 | 5136 | C. P. S. B. | 1971 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 37 |
| 25 | 12-7-70 | 5141 | C. P. S. B. | 1971 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 29 |
| 26 | 12-4-70 | 4952 | C. P. S. B. | 1971 | IHC | 304 | V8 | 4 | 14,000 | Van | 34 |
| 27 | 12-7-70 | 6615 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 365 |
| 28 | 12-7-70 | 6616 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 415 |
| 29 | 12-8-70 | 4824 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 2103 |
| 30 | 12-8-70 | 4726 | C. P. S. B. | 1970 | Chevrolet | 292 | 6 | 4 | 9,000 | Service | 4356 |
| 31 | 12-10-70 | 4728 | C. P. S. B. | 1970 | Chevrolet | 250 | 6 | 4 | 7,500 | Service | 3000 |
| 32 | 12-10-70 | 4729 | C. P. S. B. | 1970 | Chevrolet | 250 | 6 | 4 | 7,500 | Service | 1274 |
| 33 | 12-10-70 | 671 | Brown Exp. | 1971 | Ford | 300 | 6 | 5 | 24,000 | Freight Van | 20 |
| 34 | 12-10-70 | 672 | Brown Exp. | 1971 | Ford | 300 | 6 | 5 | 24,000 | Freight Van | 27 |
| 35 | 12-10-70 | 673 | Brown Exp. | 1971 | Ford | 300 | 6 | 5 | 24,000 | Freight Van | 12 |
| 36 | 12-10-70 | 4727 | C. P. S. B. | 1970 | Chevrolet | 250 | 6 | 4 | 7,500 | Service | 2228 |
| 37 | 12-10-70 | 4730 | C. P. S. B. | 1970 | Chevrolet | 250 | 6 | 4 | 7,500 | Service | 841 |
| 38 | 12-11-70 | 4951 | C. P. S. B. | 1970 | IHC | 304 | V8 | 4 | 14,000 | Service | 1549 |
| 39 | 12-11-70 | 8810 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 1677 |
| 40 | 12-14-70 | 8811 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 1227 |
| 41 | 12-14-70 | 6855 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 343 |
| 42 | 12-15-70 | 6617 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Wrecker | 414 |
| 43 | 12-15-70 | 6856 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 2770 |
| 44 | 12-16-70 | 4671 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Stake | 1142 |
| 45 | 12-16-70 | 6857 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 3357 |
| 46 | 12-17-70 | 4950 | C. P. S. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Bucket Truck | 561 |
| 47 | 12-28-70 | 312 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 6816 |
| 48 | 12-28-70 | 314 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 3521 |
| 49 | 12-29-70 | 301 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 10,000 | Crew Truck | 3099 |
| 50 | 12-29-70 | 302 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 10,000 | Crew Truck | 4264 |

*Hi-Lo means two-speed rear axle.

## TABLE A-2 (Cont'd). DESCRIPTION OF SURVEILLANCE FLEET

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans Speeds* | GVW lbs. | Vehicle Type | Initial Mileage |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 | 12-30-70 | 93 | Pearl | 1970 | IHC | 304 | V8 | 3 | 7,500 | Delivery | 11,034 |
| 52 | 12-31-70 | 105 | Pearl | 1970 | GMC | 292 | 6 | 3 | 7,500 | Delivery | 15,944 |
| 53 | 12-31-70 | 106 | Pearl | 1970 | Dodge | 318 | V8 | 3 | 7,500 | Delivery | 8,504 |
| 54 | 12-31-70 | 122 | Pearl | 1970 | Ford | 300 | 6 | 3 | 7,500 | Delivery | 18,143 |
| 55 | 1-2-71 | 311 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 3,729 |
| 56 | 1-2-71 | 313 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 4,938 |
| 57 | 1-2-71 | 315 | C.W.B | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 2,812 |
| 58 | 1-2-71 | 316 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 1,522 |
| 59 | 1-2-71 | 317 | C.W.B | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 3,320 |
| 60 | 1-3-71 | 253 | C.W.B. | 1970 | Chevrolet | 307 | V8 | 4 | 7,500 | Service | 2,056 |
| 61 | 1-3-71 | 254 | C.W.B. | 1970 | Chevrolet | 307 | V8 | 4 | 7,500 | Service | 5,031 |
| 62 | 1-3-71 | 391 | C.W.B | 1970 | Chevrolet | 366 | V8 | 5 | 32,000 | Crane | 687 |
| 63 | 1-3-71 | 392 | C.W.B. | 1970 | Chevrolet | 366 | V8 | 5 | 32,000 | Crane | 990 |
| 64 | 1-6-71 | 582 | Red Arrow | 1970 | Dodge | 318 | V8 | 4 | 24,000 | Freight | 14,520 |
| 65 | 1-7-71 | 581 | Red Arrow | 1970 | Dodge | 318 | V8 | 4 | 24,000 | Freight | 10,656 |
| 66 | 1-9-71 | 251 | C.W.B. | 1970 | Dodge | 318 | V8 | 3 auto | 7,500 | Meter | 6,025 |
| 67 | 1-9-71 | 252 | C.W.B. | 1970 | Dodge | 318 | V8 | 3 auto | 7,500 | Service | 4,981 |
| 68 | 1-9-71 | 360 | C.W.B. | 1970 | Ford | 361 | V8 | 5 | 25,500 | Dump | 8,094 |
| 69 | 1-12-71 | 5133 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 32 |
| 70 | 1-12-71 | 5140 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 30 |
| 71 | 1-12-71 | 5097 | C.P.S.B. | 1971 | IHC | 345 | V8 | 5 | 25,000 | Digger | 456 |
| 72 | 1-12-71 | 5106 | C.P.S.B. | 1971 | IHC | 345 | V8 | 5 | 25,000 | Digger | 464 |
| 73 | 1-13-71 | 5130 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 45 |
| 74 | 1-13-71 | 5135 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 287 |
| 75 | 1-16-71 | M-78 | State Hosp | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 5,963 |
| 76 | 1-16-71 | M-80 | State Hosp | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 1,791 |
| 77 | 1-16-71 | M-98 | State Hosp | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 2,019 |
| 78 | 1-16-71 | SH-680 | State Hosp | 1970 | Ford | 302 | V8 | 3 auto | 6,800 | Van | 1,442 |
| 79 | 1-16-71 | SH-699 | State Hosp | 1970 | GMC | 401 | V6 | 5 | 27,000 | Bus | 838 |
| 80 | 1-18-71 | 1029 | Lone Star | 1970 | Chevrolet | 307 | V8 | 4 | 6,600 | Delivery | 26,622 |
| 81 | 1-20-71 | 134 | Herder | 1970 | Ford | 300 | 6 | 5 | 21,000 | Freight | 16,201 |
| 82 | 1-21-71 | 135 | Herder | 1970 | Ford | 300 | 6 | 5 | 21,000 | Freight | 11,190 |
| 83 | 1-21-71 | 239 | Herder | 1970 | Ford | 361 | V8 | 5 | 22,000 | Freight | 10,511 |
| 84 | 1-21-71 | 240 | Herder | 1970 | Ford | 361 | V8 | 5 | 22,000 | Freight | 13,920 |
| 85 | 1-21-71 | 250 | C.W.B. | 1970 | Chevrolet | 307 | V8 | 2 auto | 7,500 | Service | 18.225 |
| 86 | 1-23-71 | L-41 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 10,000 | Laundry | 2,568 |
| 87 | 1-23-71 | M-77 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 10,000 | Grounds | 1,985 |
| 88 | 1-23-71 | M-87 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 7,500 | Service | 4,875 |
| 89 | 1-23-71 | M-90 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 10,000 | Maintenance | 3,274 |
| 90 | 1-23-71 | M-95 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 10,000 | Grounds | 201 |
| 91 | 1-26-71 | 2179 | City P&R | 1970 | IHC | 345 | V8 | 4 | 19,000 | Water Truck | 219 |
| 92 | 1-27-71 | 2120 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maintenance | 2,948 |
| 93 | 1-27-71 | 27 | B.M.W. | 1970 | Ford | 360 | V8 | 4 | 7,500 | Repair | 7,563 |
| 94 | 1-28-71 | 2073 | City P&R | 1970 | Chevrolet | 292 | 6 | 3 auto | 14,000 | Maintenance | 1,770 |
| 95 | 1-28-71 | 2121 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maintenance | 2,262 |
| 96 | 1-29-71 | 4T1 | B.C.R.D. | 1970 | Ford | 240 | 6 | 3 | 7,500 | Maintenance | 13,174 |
| 97 | 1-29-71 | 4T16 | B.C.R.D. | 1970 | Ford | 240 | 6 | 3 | 7,500 | Welder | 9,762 |
| 98 | 1-30-71 | 1T22 | B.C.R.D. | 1970 | Ford | 330 | V8 | 5 | 21,000 | Water Truck | 15,424 |
| 99 | 1-30-71 | 2T9 | B.C.R.D. | 1970 | Ford | 330 | V8 | 4 | 21,000 | Water Truck | 12,301 |
| 100 | 1-30-71 | 2T12 | B.C.R.D. | 1970 | Ford | 330 | V8 | 4 | 21,000 | Water Truck | 9,339 |

*Hi-Lo means two-speed rear axle.

# TABLE A-2 (Cont'd). DESCRIPTION OF SURVEILLANCE FLEET

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans Speeds* | GVW lbs. | Vehicle Type | Initial Mileage |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 101 | 1-30-71 | 4T23 | B.C.R.D. | 1970 | Ford | 330 | V8 | 5 | 21,000 | Water Truck | 11,705 |
| 102 | 2-3-71 | 7 | B.M.W. | 1970 | Ford | 360 | V8 | 4 | 6,100 | Maintenance | 12,879 |
| 103 | 2-3-71 | 34 | Southern | 1970 | GMC | 427 | V8 | 5* | 32,500 | Moving | 2,123 |
| 104 | 2-4-71 | 2085 | City P&R | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 10,178 |
| 105 | 2-4-71 | 2122 | City P&R | 1970 | IHC | 392 | V8 | 5 | 25,500 | Maintenance | 1,911 |
| 106 | 2-5-71 | 2119 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maintenance | 2,166 |
| 107 | 2-5-71 | 2123 | City P&R | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 2,829 |
| 108 | 2-8-71 | 2168 | City P&R | 1970 | Chevrolet | 307 | V8 | 4 | 10,000 | Maintenance | 2,612 |
| 109 | 2-8-71 | 2169 | City P&R | 1970 | Chevrolet | 307 | V8 | 4 | 10,000 | Maintenance | 641 |
| 110 | 2-9-71 | 2081 | City P&R | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 5,057 |
| 111 | 2-9-71 | 2082 | City P&R | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 6,748 |
| 112 | 2-10-71 | 2170 | City P&R | 1970 | Chevrolet | 307 | V8 | 4 | 10,000 | Maintenance | 14,584 |
| 113 | 2-11-71 | 51346 | C.P.S.B. | 1971 | IHC | 392 | V8 | 6 auto | 24,000 | Construction | 51 |
| 114 | 2-12-71 | 51375 | C.P.S.B. | 1971 | IHC | 392 | V8 | 6 auto | 25,500 | Construction | 52 |
| 115 | 2-12-71 | 51383 | C.P.S.B. | 1971 | IHC | 392 | V8 | 6 auto | 25,500 | Construction | 37 |
| 116 | 2-16-71 | 4364 | Elmore | 1970 | GMC | 350 | V8 | 4 | 14,000 | Moving | 15,682 |
| 117 | 2-18-71 | 16 | Elmore | 1970 | GMC | 350 | V8 | 4 | 10,000 | Moving | 15,764 |
| 118 | 2-18-71 | 043247 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Mail | 14 |
| 119 | 2-19-71 | 043144 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Mail | 15 |
| 120 | 2-19-71 | 043327 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Mail | 11 |
| 121 | 2-20-71 | 98 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 5,091 |
| 122 | 2-20-71 | 101 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 6,001 |
| 123 | 2-20-71 | 102 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 6,488 |
| 124 | 2-21-71 | 105 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 2,938 |
| 125 | 3-9-71 | 043221 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 7,000 | Delivery | 333 |
| 126 | 3-11-71 | 042519 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 7,000 | Delivery | 1,692 |
| 127 | 4-24-71 | 1085 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 737 |
| 128 | 4-6-71 | 1086 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 52 |
| 129 | 4-7-71 | 1088 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 227 |
| 130 | 4-12-71 | 1353 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 322 |
| 131 | 4-22-71 | 1347 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 340 |
| 132 | 4-23-71 | 1355 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 321 |
| 133 | 4-23-71 | 1340 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 320 |
| 134 | 4-27-71 | 1348 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 312 |
| 135 | 4-27-71 | 1345 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 14 |
| 136 | 4-27-71 | 1349 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 306 |
| 137 | 4-28-71 | 1365 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 305 |
| 138 | 4-28-71 | 1346 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 299 |
| 139 | 4-28-71 | 1364 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 310 |
| 140 | 4-29-71 | 1363 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 314 |
| 141 | 4-24-71 | 1087 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 1,053 |
| 142 | 5-18-71 | 496 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Rental | 7,725 |
| 143 | 5-18-71 | 497 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Rental | 1,432 |
| 144 | 5-19-71 | 503 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Rental | 3,273 |
| 145 | 5-21-71 | 3 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 23 |
| 146 | 5-24-71 | 1 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 759 |
| 147 | 5-24-71 | 5 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 172 |
| 148 | 5-24-71 | 2 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 119 |
| 149 | 6-11-71 | 7 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 1,441 |
| 150 | 6-11-71 | 4 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 1,504 |
| 151 | 6-14-71 | 276-15T | Southern | 1971 | Chevrolet | 427 | V8 | 5 | 32,500 | Moving Co. | 3,554 |
| 152 | 6-18-71 | 6 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 2,121 |

*Hi-Lo means two-speed rear axle.

## TABLE A-3. GASOLINE SURVEILLANCE FLEET MAKE AND CID CATEGORIES (ENGINE MODEL GROUPINGS)

| Category | No. of Vehicles | Make | CID | Cyl. | Source | GVW | Unit Numbers |
|---|---|---|---|---|---|---|---|
| 1 | 4 | 1970 Chevrolet | 250 | 6 | C.P.S.B. | 7,500 | 31, 32, 36, 37 |
| 2 | 2 | 1970 Chevrolet | 292 | 6 | C.P.S.B. | 9,000 | 30 |
| | | | | 6 | City P & R | 14,000 | 94 |
| 3 | 11 | 1970 Chevrolet | 307 | V8 | C.W.B. | 7,500 | 60, 61, 85 |
| | | | | V8 | Lone Star | 6,600 | 80 |
| | | | | V8 | City P & R | 7,500 | 104, 107, 110, 111 |
| | | | | V8 | City P & R | 10,000 | 108, 109, 112 |
| 4 | 7 | 1971 Chevrolet | 350 | V8 | JFC | 24,000 | 145, 146, 147, 148, 149, 150, 152 |
| 5 | 2 | 1970 Chevrolet | 366 | V8 | C.W.B. | 32,000 | 62, 63 |
| 6 | 2 | 1970 GMC | 427 | V8 | Southern | 32,500 | 103 |
| | | 1971 Chevrolet | 427 | V8 | Southern | 32,500 | 151 |
| 7 | 8 | 1970 Dodge | 225 | 6 | State Hospital | 7,500 | 75, 76, 77 88 |
| | | | | 6 | State Hospital | 10,000 | 86, 87, 89, 90 |
| 8 | 15 | 1970 Dodge | 318 | V8 | P.O.D. | 7,000 | 118, 119, 120. 125, 126 |
| | | | | V8 | Pearl | 7,500 | 53 |
| | | | | V8 | C.W.B. | 7,500 | 66, 67 |
| | | | | V8 | P.O.D. | 10,000 | 1, 2, 3, 4, 5, |
| | | | | V8 | Red Arrow | 24,000 | 64, 65 |
| 9 | 3 | 1970 Ford | 240 | 6 | Hertz | 7,500 | 21 |
| | | | | 6 | B.C.R.D. | 7,500 | 96, 97 |

TABLE A-3 (Cont'd). GASOLINE SURVEILLANCE FLEET MAKE AND CID CATEGORIES (ENGINE MODEL GROUPINGS)

| Category | No. of Vehicles | Make | CID | Cyl. | Source | GVW | Unit Numbers |
|---|---|---|---|---|---|---|---|
| 10 | 17 | 1970 Ford | 300 | 6 | Pearl | 7,500 | 54 |
| | | | | 6 | Hertz | 10,000 | 20 |
| | | | | 6 | C.P.S.B. | 10,000 | 27, 28, 42, 44 |
| | | | | 6 | C.P.S.B. | 16,000 | 29, 39, 40, 41, 43, 45 |
| | | | | 6 | Herder | 21,000 | 81, 82 |
| | | 1971 Ford | 300 | 6 | Brown Exp. | 24,000 | 33, 34, 35 |
| 11 | 1 | 1970 Ford | 302 | V8 | State Hospital | 6,800 | 78 |
| 12 | 4 | 1970 Ford | 330 | V8 | B.C.R.D. | 21,000 | 98, 99, 100, 101 |
| 13 | 5 | 1970 Ford | 360 | V8 | B.M.W. | 6,100 | 102 |
| | | | | V8 | B.M.W. | 7,500 | 93 |
| | | | | V8 | City P & R | 8,300 | 92, 95, 106 |
| 14 | 3 | 1970 Ford | 361 | V8 | Herder | 22,000 | 83, 84 |
| | | | | V8 | C.W.B. | 25,500 | 68 |
| 15 | 4 | 1971 Ford | 391 | V8 | Lone Star | 27,500 | 127, 128, 129, 141 |
| 16 | 5 | 1970 GMC | 292 | 6 | Pearl | 7,500 | 52 |
| | | | | 6 | Facs | 10,000 | 121, 122, 123, 124 |
| 17 | 2 | 1970 GMC | 350 | V8 | Elmore | 10,000 | 117 |
| | | | | V8 | Elmore | 14,000 | 116 |
| 18 | 1 | 1970 GMC | 401 | V6 | State Hospital | 27,000 | 79 |

TABLE A-3 (Cont'd). GASOLINE SURVEILLANCE FLEET MAKE AND CID CATEGORIES (ENGINE MODEL GROUPINGS)

| Category | No. of Vehicles | Make | CID | Cyl. | Source | GVW | Unit Numbers |
|---|---|---|---|---|---|---|---|
| 19 | 13 | 1970 IHC | 304 | V8 | Pearl | 7,500 | 51 |
| | | | | V8 | C.W.B. | 10,000 | 49, 50 |
| | | | | V8 | C.P.S.B. | 14,000 | 38 |
| | | | | V8 | C.P.S.B. | 19,700 | 46 |
| | | | | V8 | C.W.B. | 19,700 | 47, 48, 55, 56, 57, 58, 59 |
| | | 1971 IHC | 304 | V8 | C.P.S.B. | 14,000 | 26 |
| 20 | 8 | 1970 IHC | 345 | V8 | City P & R | 19,000 | 91 |
| | | | | V8 | N.S.S.D. | 22,000 | 18, 19 |
| | | | | V8 | N.S.S.D. | 25,500 | 15, 16, 17 |
| | | 1971 IHC | 345 | V8 | C.P.S.B. | 25,000 | 71, 72 |
| 21 | 23 | 1970 IHC | 392 | V8 | C.P.S.B. | 25,500 | 23, 69, 70, 73, 74 |
| | | | | V8 | City P & R | 25,500 | 105 |
| | | 1971 IHC | 392 | V8 | C.P.S.B. | 24,000 | 113 |
| | | | | V8 | C.P.S.B. | 25,500 | 22, 24, 25, 114, 115 |
| | | | | V8 | S.A.P.W. | 34,000 | 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140 |
| 22 | 7 | 1970 IHC | 478 | V8 | Ryder | 32,000 | 11, 12, 13, 14 |
| | | 1971 IHC | 478 | V8 | ABC | 32,000 | 142, 143, 144 |
| 23 | 5 | 1970 White | 400 | 6 | ABC | 30,000 | 6, 7, 8, 9, 10 |
| | 152 Total | | | | | | |

TABLE A-4. DEFINITIONS AND UNIT NUMBERS FOR VARIABLES USED IN SURVEILLANCE FLEET STATISTICAL ANALYSIS

A. Automatic Transmission versus Conventional

44 Automatic Units: Nos. 1, 2, 3, 4, 5, 20, 21, 22, 23, 24, 25, 66, 67, 69, 70, 73, 74, 78, 85, 86, 87, 88, 89, 90, 94, 113, 114, 115, 118, 119, 120, 125, 126, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, and 140.
Remaining units are conventional shift transmissions.

B. Type of Application

26 Stop and Go Units: Nos. 1, 2, 3, 4, 5, 15, 16, 17, 18, 19, 118, 119, 120, 125, 126, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140.

22 Line-Haul Tractors: Nos. 6, 7, 8, 9, 10, 11, 12, 13, 14, 79, 103, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152

26 Freight and Related Delivery: Nos. 20, 21, 33, 34, 35, 51, 52, 53, 54, 64, 65, 80, 81, 82, 83, 84, 116, 117, 121, 122, 123, 124, 127, 128, 129, 141

25 Large Service Trucks (24,000-lb GVW and Above): Nos. 22, 23, 24, 25, 42, 44, 49, 50, 62, 63, 68, 69, 70, 71, 72, 73 74, 98, 99, 100, 101, 105, 113, 114, 115.

20 Medium Service Trucks (Greater than 10,000 but less than 24,000 GVW): Nos. 26, 27, 28, 29, 38, 39, 40, 41, 43, 45, 46, 47, 48, 55, 56, 57, 58, 59, 91, 94.

33 Small Service Trucks (10,000-lb and less): Nos. 30, 31, 32, 36, 37, 60, 61, 66, 67, 75, 76, 77, 78, 85, 86, 87, 88, 89, 90, 92, 93, 95, 96, 97, 102, 104, 106, 107, 108, 109, 110, 111, 112.

ABLE A-4 (Cont'd). DEFINITIONS AND UNIT NUMBERS FOR VARIABLES USED IN SURVEILLANCE FLEET STATISTICAL ANALYSIS

C Gross Vehicle Weight

62 Large Trucks (24,000-lb and above): Nos. 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 22, 23, 24, 25, 33, 34, 35, 62, 63, 64, 65, 68, 69, 70, 71, 72, 73, 74, 79, 103, 105, 113, 114, 115, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152.

58 Medium Trucks (Greater than 10,000 but less than 24,000-lb): Nos. 1, 2, 3, 4, 5, 18, 19, 20, 26, 27, 28, 29, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 55, 56, 57, 58, 59, 81, 82, 83, 84, 86, 87, 89, 90, 91, 94, 98, 99, 100, 101, 108, 109, 112, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126.

32 Small Trucks (Less than 10,000 but greater than 6,000-lb): Nos, 21, 30, 31, 32, 36, 37, 51, 52, 53, 54, 60, 61, 66, 67, 75, 76, 77, 78, 80, 85, 88, 92, 93, 95, 96, 97, 102, 104, 106, 107, 110, 111.

D. Vehicle Mileage at Start of Test (Zero Month)

50 Units with 0-499 miles: Nos. 1, 2, 3, 4, 5, 11, 12, 22, 23, 24, 25, 26, 27, 28, 33, 34, 35, 41, 42, 69, 70, 71, 72, 73, 74, 90, 91, 113, 114, 115, 118, 119, 120, 125, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 145, 147, 148.

47 Units with 500-3499 miles: Nos. 13, 14, 29, 31, 32, 36, 37, 38, 39, 40, 43, 44, 45, 46, 49, 57, 58, 59, 60, 62, 63, 76, 77, 78, 79, 86, 87, 89, 92, 94, 95, 103, 105, 106, 107, 108, 109, 124, 126, 127, 141, 143, 144, 146, 149, 150, 152.

35 Units with 3500-9,999 miles: Nos. 6, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 30, 47, 48, 50, 53, 55, 56, 61, 66, 67, 68, 75, 88, 93, 97, 100, 110, 111, 121, 122, 123, 142, 151.

20 Units with 10,000 miles and above: Nos. 51, 52, 54, 64, 65, 80, 81, 82, 83, 84, 85, 96, 98, 99, 101, 102, 104, 112, 116, 117.

TABLE A-5. MAINTENANCE CATEGORIES

| Category | Number of Trucks in Category | Unit Numbers |
|---|---|---|
| Above Average Maintenance | 58 | 1-10, 15-19, 22-32, 36-46, 51-54, 69-74, 113-115, 118-120, 125, 126, 142-144 |
| Average Maintenance | 51 | 11-14, 20, 21, 47-49, 50, 55-63, 66-68, 75-79, 86-95, 102, 104-112, 121-124 |
| Below Average Maintenance | 39 | 64, 65, 80-84, 96-101, 103, 116, 117, 127-141, 145-152 |

# APPENDIX B

## CORRELATION GROUP
## DATA SUMMARY FOR INDIVIDUAL TRUCKS

9 MODE FEDERAL CYCLE

TABLE B-1. STATIONARY-CHASSIS DYNAMOMETER EMISSION TEST RESULTS
Correlation Truck No. 1

Engine: Ford 300 CID, 6 Cyl. Vehicle: 1970 Ford, 10,000-lb GVW Stake

| Date | Test | Dynamometer | HC ppm n Hex | CO % | NO, ppm Obs. | NO, ppm Corr |
|---|---|---|---|---|---|---|
| 8-5-71 | 1 | | 156 | 1.41 | 2078 | 2319 |
| 8-6-71 | 1 | | 165 | 1.36 | 2067 | 2276 |
| 8-6-71 | 2 | | 161 | 1.43 | 2084 | 2294 |
| | Average | | 161 | 1.40 | 2076 | 2296 |
| | Spread: ( $\frac{\text{Max-Min}}{\text{Avg}}$ ) X 100 | | 5.6% | 5.0% | 0.8% | 1.9% |
| 8-11-71 | 1 | Chassis | 182 | 1.04 | 1716 | 1704 |
| 8-11 71 | 2 | " | 179 | 1.07 | 1807 | 1794 |
| 8-11-71 | 3 | " | 184 | 1.09 | 1719 | 1707 |
| | Average | | 182 | 1.07 | 1747 | 1735 |
| | Spread: ( $\frac{\text{Max-Min}}{\text{Avg}}$ ) X 100 | | 2.8% | 4.7% | 5.2% | 5.2% |
| | Average | | 161 | 1.40 | 2076 | 2296 |
| | Average Chassis | | 182 | 1.07 | 1747 | 1735 |
| | Difference* | | 21 | -0.33 | -329 | -561 |
| | Percent Difference** | | 13 | -23.6 | -15.9 | -24.5 |

*(Chassis Stationary)
**(Chassis Stationary) ÷ Stationary X 100

TABLE B-2. STATIONARY-CHASSIS DYNAMOMETER EMISSION TEST RESULTS
Correlation Truck No. 2

Engine: Ford 240 CID, 6 cyl. Vehicle: 1970 Ford, 7,500-lb GVW Pickup

| Date | Test | Dynamometer | HC ppm n. Hex. | CO % | NO, ppm Obs. | NO, ppm Corr. |
|---|---|---|---|---|---|---|
| 8-24-71 | 2 | Chassis | 182 | .626 | 1966 | 1952 |
| 8-25-71 | 3 | " | 175 | .707 | 1797 | 1763 |
| 8-26-71 | 1 | " | 174 | .662 | 1979 | 1987 |
| 8-26-71 | 2 | " | 177 | .631 | 1958 | 1966 |
| Average | | | 177 | .657 | 1925 | 1917 |
| Spread: $\left(\frac{\text{Max-Min}}{\text{Avg}}\right)$ X 100 | | | 4.5% | 12.3% | 9.4% | 11.7% |
| 9-2-71 | 1 | Stationary | 157 | .560 | 1227 | 1384 |
| 9-2-71 | 2 | " | 152 | .464 | 1394 | 1572 |
| 9-2-71 | 3 | " | 140 | .423 | 1373 | 1549 |
| Average | | | 150 | .482 | 1331 | 1502 |
| Spread: $\left(\frac{\text{Max-Min}}{\text{Avg}}\right)$ X 100 | | | 11.3% | 28.4% | 12.5% | 12.5% |
| 9-21-71 | 1 | Stationary | 139 | .456 | 1653 | 1685 |
| 9-21-71 | 2 | " | 139 | .454 | 1648 | 1694 |
| 9-21-71 | 3 | " | 143 | .510 | 1669 | 1715 |
| Average | | | 140 | .473 | 1657 | 1698 |
| Spread: $\left(\frac{\text{Max-Min}}{\text{Avg}}\right)$ X 100 | | | 2.9% | 11.8% | 1.3% | 1.8% |
| 9-27-71 | 2 | Chassis | 169 | .629 | 1464 | 1480 |
| 9-27-71 | 3 | " | 165 | .663 | 1366 | 1381 |
| 9-27-71 | 4 | " | 168 | .635 | 1394 | 1409 |
| Average | | | 167 | .642 | 1408 | 1423 |
| Spread: $\left(\frac{\text{Max-Min}}{\text{Avg}}\right)$ X 100 | | | 2.3% | 5.3% | 7.0% | 7.0% |
| | | Average Stationary | 143 | .478 | 1494 | 1600 |
| | | Average Chassis | 172 | .650 | 1703 | 1705 |
| | | Difference * | 29 | .172 | 209 | 105 |
| | | Percent Difference ** | 20.3 | 36.0 | 14.0 | 6.6 |

*(Chassis - Stationary
**(Chassis - Stationary) ÷ Stationary X 100

TABLE B-3. STATIONARY-CHASSIS DYNAMOMETER EMISSION TEST RESULTS
Correlation Truck No. 3

Engine: Dodge 318 CID V8

Vehicle: 1969 Dodge, 23,000 lb GVW Stake

| Date | Test | Dynamometer | HC ppm n. Hex. | CO % | NO, ppm Obs. | NO, ppm Corr. |
|---|---|---|---|---|---|---|
| 10-12-71 | 1 | Chassis | 310 | 3.319 | 1624 | 1556 |
| 10-12-71 | 2 | " | 279 | 3.243 | 1625 | 1557 |
| 10-12-71 | 4 | " | 290 | 3.335 | 1696 | 1625 |
| | Average | | 293 | 3.306 | 1648 | 1579 |
| | Spread | $(\frac{\text{Max-Min}}{\text{Avg}})$ X 100 | 10.6% | 3.4% | 4.4% | 4.4% |
| 10-19-71 | 2 | Stationary | 308 | 4.741 | 1338 | 1513 |
| 10-20-71 | 1 | " | 294 | 4.437 | 1525 | 1429 |
| 10-20-71 | 2 | " | 296 | 4.353 | 1728 | 1662 |
| 10-20-71 | 3 | " | 288 | 4.183 | 1716 | 1665 |
| | Average | | 297 | 4.429 | 1577 | 1567 |
| | Spread | $(\frac{\text{Max-Min}}{\text{Avg}})$ X 100 | 6.7% | 12.6% | 24.7% | 15.1% |

| | HC | CO | NO Obs. | NO Corr. |
|---|---|---|---|---|
| Average Stationary | 297 | 4.429 | 1577 | 1567 |
| Average Chassis | 293 | 3.306 | 1648 | 1579 |
| Difference* | 4 | 1.123 | 71 | 12 |
| Percent Difference** | -1.3 | 25.3 | 4.5 | 0.8 |

*( Chassis - Stationary)
**(Chassis - Stationary) ÷ Stationary X 100

TABLE B-4. STATIONARY-CHASSIS DYNAMOMETER EMISSION TEST RESULTS
Correlation Truck No. 4

Engine: White 400 CID, 6 Cyl.

Vehicle: 1970 White, 30,000-lb GVW Tractor

| Date | Test | Dynamometer | HC ppm n. Hex. | CO % | NO, ppm Obs. | NO, ppm Corr. |
|---|---|---|---|---|---|---|
| 11-23-71 | 1 | Stationary | 157 | 1.74 | 1614 | 1456 |
| 11-23-71 | 2 | Stationary | 163 | 1.73 | 1647 | 1486 |
| 11-23-71 | 3 | Stationary | 169 | 1.66 | 1583 | 1450 |
| 11-23-71 | 4 | Stationary | 161 | 1.66 | 1651 | 1506 |
| | Average | | 163 | 1.70 | 1624 | 1475 |
| | Spread $\left(\frac{\text{Max-Min}}{\text{Avg}}\right) \times 100$ | | 7.4% | 4.7% | 4.2% | 3.8% |
| 11-8-71 | 2 | Chassis | 206 | 2.38 | 1792 | 1641 |
| 11-9-71 | 1 | Chassis | 204 | 2.39 | 1577 | 1511 |
| 11-9-71 | 2 | Chassis | 211 | 2.48 | 1747 | 1680 |
| | Average | | 207 | 2.41 | 1705 | 1611 |
| | Spread $\left(\frac{\text{Max-Min}}{\text{Avg}}\right) \times 100$ | | 3.4% | 4.0% | 12.6% | 10.4% |
| | Average Stationary | | 163 | 1.70 | 1624 | 1475 |
| | Average Chassis | | 207 | 2.41 | 1705 | 1611 |
| | Difference* | | +44 | +0.71 | +81 | +136 |
| | Percent Difference** | | +27.0 | +41.8 | +5.0 | +9.2 |

*(Chassis Stationary)
**(Chassis - Stationary) ÷ Stationary X 100

TABLE B-5. STATIONARY-CHASSIS DYNAMOMETER EMISSION TEST RESULTS
Correlation Truck No. 5

Engine: Ford 330 CID V8

Vehicle: 1971 Ford 23,000 lb. GVW Van

| Date | Test | Dynamometer | HC ppm n. Hex. | CO % | NO, ppm Obs. | NO, ppm Corr. |
|---|---|---|---|---|---|---|
| 12/6/71 | 1 | Stationary | 188 | 1.121 | 1306 | 1117 |
| 12/6/71 | 2 | Stationary | 191 | 1.293 | 1273 | 1088 |
| 12/6/71 | 3 | Stationary | 186 | 1.114 | 1393 | 1185 |
| | Average | | 188 | 1.176 | 1324 | 1130 |
| | Spread $\left(\frac{\text{Max-Min}}{\text{Avg}}\right)$ X 100 | | 2.6% | 14.6% | 9.1% | 8.6% |
| 11/11/71 | 1 | Chassis | 225 | 1.061 | 1414 | 1290 |
| 11/11/71 | 2 | Chassis | 213 | 1.006 | 1441 | 1326 |
| 11/11/71 | 3 | Chassis | 216 | 1.045 | 1454 | 1338 |
| | Average | | 218 | 1.037 | 1436 | 1318 |
| | Spread $\left(\frac{\text{Max-Min}}{\text{Avg}}\right)$ X 100 | | 5.5% | 5.3% | 2.7% | 3.6% |
| | Average Stationary | | 188 | 1.176 | 1324 | 1130 |
| | Average Chassis | | 216 | 1.037 | 1436 | 1318 |
| | Difference* | | +28 | -.139 | +112 | 188 |
| | Percent Difference** | | +15.0 | -11.8 | +8.4 | 16.6 |

* (Chassis-Stationary)
** (Chassis-Stationary) ÷ Stationary X 100

TABLE B-6. STATIONARY-CHASSIS DYNAMOMETER EMISSION TEST RESULTS
Correlation Truck No. 6

Engine: Chevrolet 350 CID V8 — Vehicle: 1970 Chevrolet 18,000 lb. GVW Van

| Date | Test | Dynamometer | ppm n. Hex | CO % | NO, ppm Obs. | NO, ppm Corr. |
|---|---|---|---|---|---|---|
| 12/10/71 | 1 | Stationary | 125 | 1.782 | 926 | 806 |
| 12/10/71 | 2 | Stationary | 131 | 1.788 | 912 | 847 |
| 12/10/71 | 3 | Stationary | 130 | 1.753 | 940 | 781 |
| | Average | | 129 | 1.774 | 926 | 811 |
| | Spread $\left(\frac{\text{Max-Min}}{\text{Avg}}\right) \times 100$ | | 4.7% | 2.0% | 3.0% | 8.1% |
| 11/23/71 | 1 | Chassis | 130 | 2.020 | 872 | 759 |
| 11/24/71 | 1 | Chassis | 129 | 1.940 | 880 | 770 |
| 11/24/71 | 2 | Chassis | 130 | 2.009 | 856 | 732 |
| | Average | | 130 | 1.990 | 869 | 754 |
| | Spread $\left(\frac{\text{Max-Min}}{\text{Avg}}\right) \times 100$ | | 0.8% | 4.0% | 2.8% | 5.0% |
| | Average Stationary | | 129 | 1.774 | 926 | 811 |
| | Average Chassis | | 130 | 1.990 | 869 | 754 |
| | Difference* | | 1 | .216 | 57 | -57 |
| | Percent Difference** | | .8% | 12.2% | -6.1% | -7.0% |

* (Chassis-Stationary)
** (Chassis-Stationary) ÷ Stationary X 100

TABLE B-7 STATIONARY-CHASSIS DYNAMOMETER EMISSION TEST RESULTS
Correlation Truck No. 7

Engine: IHC 345 CID

Vehicle: 1970, 16,000-lb GVW Van

| Date | Test | Dynamometer | HC ppm n. Hex. | CO % | NO, ppm Obs. | NO, ppm Corr. |
|---|---|---|---|---|---|---|
| 1/4/72 | 1 | Stationary | 273 | 1.714 | 2900 | 2276 |
| 1/4/72 | 2 | Stationary | 253 | 1.545 | 2849 | 2295 |
| 1/4/72 | 3 | Stationary | 244 | 1.585 | 2819 | 2165 |
| | Average | | 257 | 1.614 | 2856 | 2245 |
| | Spread $(\frac{Max-Min}{Avg})$ X 100 | | 11.3% | 10.5% | 2.8% | 5.8% |
| 12/16/71 | 1 | Chassis | 209 | 2.075 | 2359 | 2140 |
| 12/16/71 | 2 | Chassis | 205 | 2.016 | 2369 | 2229 |
| 12/16/71 | 3 | Chassis | 209 | 2.134 | 2296 | 2252 |
| | Average | | 208 | 2.075 | 2341 | 2207 |
| | Spread $(\frac{Max-Min}{Avg})$ X 100 | | 1.9% | 3.5% | 3.1% | 5.1% |
| | Average Stationary | | 257 | 1.614 | 2856 | 2245 |
| | Average Chassis | | 208 | 2.075 | 2341 | 2207 |
| | Difference* | | -49 | 0.461 | -515 | -38 |
| | Percent Difference** | | -19.1 | 28.6 | -21.9 | -1.7 |

*(Chassis-Stationary)
**(Chassis-Stationary) ÷ Stationary X 100

TABLE B-8. STATIONARY-CHASSIS DYNAMOMETER EMISSION TEST RESULTS
Correlation Truck No. 8

Engine: IHC 478 CID, V-8

Vehicle: 1971 IHC 32,000-lb GVW Tractor

| Date | Test | Dynamometer | HC ppm n. Hex. | CO % | NO, ppm Obs. | NO, ppm Corr. |
|---|---|---|---|---|---|---|
| 1/19/72 | 1 | Stationary | 218 | 1.576 | 1629 | 1691 |
| 1/19/72 | 2 | Stationary | 209 | 1.571 | 1593 | 1679 |
| | Average | | 214 | 1.574 | 1611 | 1685 |
| | Spread $\left(\frac{\text{Max-Min}}{\text{Avg}}\right)$ X 100 | | 4.2% | 0.3% | 2.2% | 0.7% |
| 12/30/71 | 3 | Chassis | 231 | 1.394 | 1731 | 1438 |
| 12/30/71 | 4 | Chassis | 223 | 1.404 | 1627 | 1352 |
| | Average | | 227 | 1.399 | 1679 | 1395 |
| | Spread $\left(\frac{\text{Max-Min}}{\text{Avg}}\right)$ X 100 | | 3.5% | 0.7% | 6.2% | 6.2% |
| | Average Stationary | | 214 | 1.574 | 1611 | 1685 |
| | Average Chassis | | 227 | 1.399 | 1679 | 1395 |
| | Difference* | | 13 | -.175 | 68 | -290 |
| | Percent Difference** | | 6.1 | -11.1 | 4.22 | -17.2 |

*(Chassis-Stationary)
**(Chassis-Stationary) ÷ Stationary X 100

TABLE B-9. STATIONARY-CHASSIS DYNAMOMETER EMISSION TEST RESULTS
Correlation Truck No. 9

Engine: Chevy 292 CID, 6 cyl.

Vehicle: 1970 14,000-lb GVW Step-in Van

| Date | Test | Dynamometer | HC ppm n. Hex. | CO % | NO, ppm Obs. | NO, ppm Corr. |
|---|---|---|---|---|---|---|
| 1/25/72 | 1 | Stationary | 182 | .979 | 3486 | 2879 |
| 1/25/72 | 2 | Stationary | 190 | 1.040 | 3527 | 2786 |
| | Average | | 186 | 1.010 | 3506 | 2833 |
| | Spread $(\frac{\text{Max-Min}}{\text{Avg}})$ X 100 | | 4.3% | 6.0% | 1.16% | 3.28% |
| 1/21/72 | 1 | Chassis | 162 | .913 | 3518 | 3148 |
| 1/21/72 | 2 | Chassis | 161 | .810 | 3469 | 3049 |
| | Average | | 161.5 | .901 | 3494 | 3099 |
| | Spread $(\frac{\text{Max-Min}}{\text{Avg}})$ X 100 | | 0.6% | 11.4% | 1.4% | 3.19% |
| | Average Stationary | | 186 | 1.010 | 3506 | 2833 |
| | Average Chassis | | 162 | .910 | 3494 | 3099 |
| | Difference* | | -24 | -.100 | -22 | 266 |
| | Percent Difference** | | -12.9 | -9.9 | -0.6 | 9.38 |

*(Chassis-Stationary)

**(Chassis-Stationary) ÷ Stationary X 100

## TABLE B-10. STATIONARY-CHASSIS DYNAMOMETER EMISSION TEST RESULTS
Correlation Truck No. 10

Engine: IHC 392 CID V8

Vehicle: 1971 IHC 26,000-lb GVW Power Line Maintenance Truck

| Date | Test | Dynamometer | HC ppm n. Hex. | CO % | NO, ppm Obs. | NO, ppm Corr. |
|---|---|---|---|---|---|---|
| 2/7/72 | 1 | Stationary | 192 | 1.24 | 1527 | 1206 |
| 2/7/72 | 2 | Stationary | 206 | 1.41 | 1673 | 1322 |
| 2/7/72 | 4 | Stationary | 213 | 1.37 | 1558 | 1231 |
| | | Average | 204 | 1.34 | 1586 | 1253 |
| Spread | $\frac{\text{Max-Min}}{\text{Avg}}$ | x 100 | 10.3% | 12.9% | 9.2% | 9.3% |
| 2/1/72 | 1 | Chassis | 259 | 1.43 | (1) | |
| 2/1/72 | 2 | Chassis | 244 | 1.40 | 1487 | 1258 |
| 2/1/72 | 3 | Chassis | 233 | 1.48 | 1472 | 1245 |
| | | Average | 245 | 1.44 | 1479 | 1252 |
| Spread | $\frac{\text{Max-Min}}{\text{Avg}}$ | x 100 | 10.6% | 5.7% | 1.0% | 1.0% |
| Average Stationary | | | 204 | 1.34 | 1586 | 1253 |
| Average Chassis | | | 245 | 1.44 | 1479 | 1252 |
| Difference* | | | 41 | 0.10 | -107 | -1 |
| Percent Difference** | | | 20.1 | 7.3 | -6.7 | -0.1 |

*Chassis-Stationary

**(Chassis-Stationary) ÷ Stationary X 100

(1)Instrumentation Malfunction.

# APPENDIX C

## FEDERAL TEST PROCEDURE FOR EXHAUST EMISSION TESTS OF HEAVY DUTY GASOLINE POWERED TRUCKS

(Excerpted from November 10, 1970, Federal Register)

# FEDERAL REGISTER

VOLUME 35 • NUMBER 219

Tuesday, November 10, 1970 • Washington, D.C.

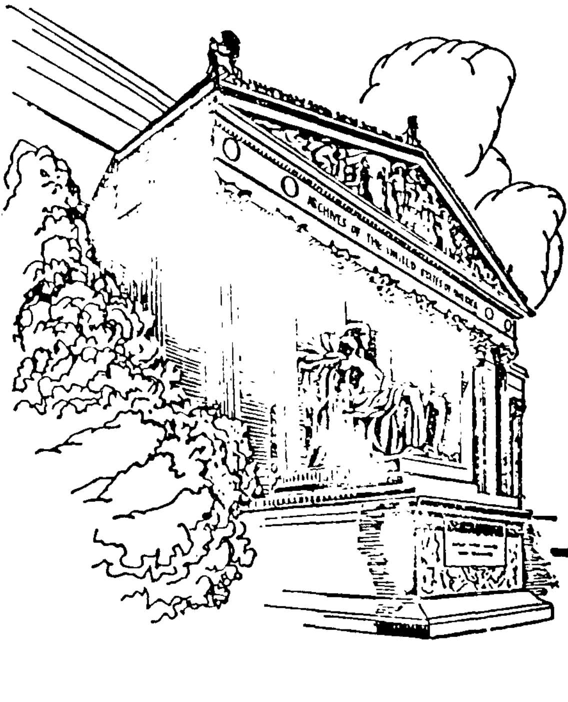

PART II

## Department of Health, Education, and Welfare

### Office of the Secretary

•

## Control of Air Pollution From New Motor Vehicles and New Motor Vehicle Engines



(4) "Gross vehicle weight" means the manufacturer's gross weight rating.

(5) "Light duty vehicle" means any motor vehicle either designed primarily for transportation of property and rated at 6,000 pounds GVW or less or designed primarily for transportation of persons and having a capacity of 12 persons or less.

(6) "Heavy duty vehicle" means any motor vehicle either designed primarily for transportation of property and rated at more than 6,000 pounds GVW or designed primarily for transportation of persons and having a capacity of more than 12 persons.

(7) "Heavy duty engine" means any engine which the engine manufacturer could reasonably expect to be used for motive power in a heavy duty vehicle.

(8) "Off-road utility vehicle" means a light duty vehicle which incorporates special features for off-road operation such as four-wheel drive.

(9) "Motorcycle" means any light duty vehicle having a seat or saddle for the use of the rider and designed to travel on not more than three wheels (including any tricycle arrangement) in contact with the ground and weighing less than 1,500 pounds.

(10) "Vehicle curb weight" means the actual or the manufacturer's estimated weight of the vehicle in operational status with all standard equipment, and weight of fuel at nominal tank capacity, and the weight of optional equipment computed in accordance with § 85.89(g).

(11) "Loaded vehicle weight" means the vehicle curb weight of a light duty vehicle plus 300 pounds.

(12) "System" includes any motor vehicle engine modification which controls or causes the reduction of substances emitted from motor vehicles or motor vehicle engines.

(13) "Engine family" means the basic classification unit of a manufacturer's product line used for the purpose of test fleet selection and determined in accordance with § 85.89(a).

(14) "Engine-system combination" means an engine family-exhaust emission control system-fuel evaporative emission control system (where applicable) combination.

(15) "Fuel system" means the combination of fuel tank, fuel pump, fuel lines, and carburetor, or fuel injection components, and includes all fuel system vents and fuel evaporative emission control systems.

(16) "Crankcase emissions" means airborne substances emitted to the atmosphere from any portion of the crankcase ventilation or lubrication systems.

(17) "Exhaust emissions" means substances emitted to the atmosphere from any opening downstream from the exhaust port of a motor vehicle engine.

(18) "Fuel evaporative emissions" means vaporized fuel emitted into the atmosphere from the fuel system of a motor vehicle.

(19) "Smoke" means the matter in exhaust emissions which obscures the transmission of light.

(20) "Hot soak loss" means fuel evaporative emissions during the 1-hour hot soak period which begins immediately after the engine is turned off.

(21) "Diurnal breathing loss" means fuel evaporative emissions as a result of the daily range in temperature to which the fuel system is exposed.

(22) "Running loss" means fuel evaporative emissions resulting from an average trip in an urban area or the simulation of such a trip.

(23) "Tank fuel volume" means the volume of fuel in the fuel tank, prescribed to be 40 percent of nominal tank capacity rounded to the nearest whole U.S. gallon.

(24) "Maximum rated horsepower" means the maximum brake horsepower output of an engine as stated by the manufacturer in his sales and service literature and his application for certification under § 85.51.

(25) "Rated speed" means the speed at which the manufacturer specifies the maximum rated horsepower of an engine.

(26) "Maximum rated torque" means the maximum torque produced by an engine as stated by the manufacturer in his sales and service literature and his application for certification under §85.51.

(27) "Opacity" means the fraction of a beam of light, expressed in percent, which fails to penetrate a plume of smoke.

(28) Zero (0) miles means that point after initial engine starting (not to exceed 10 miles of vehicle operation) at which adjustments are completed.

(29) Zero (0) hours means that point after initial engine starting (not to exceed 1 hour of engine operation) at which adjustments are completed.

(30) "Calibrating gas" means a gas of known concentration which is used to establish the response curve of an analyzer.

(31) "Span gas" means a gas of known concentration which is used routinely to set the output of an analyzer.

### § 85.2 Abbreviations.

The abbreviations used in this part have the following meanings in both capital and lower case:

Accel.—Acceleration.
ASTM—American Society for Testing and Materials.
BHP—Brake Horsepower.
C.f.h.—Cubic feet per hour.
$CO_2$—Carbon Dioxide.
CO—Carbon Monoxide.
Conc.—Concentration.
CT—Closed Throttle.
C.f.m.—Cubic feet per minute.
Cu.in.—Cubic inch(es).
Decel.—Deceleration.
EP—End Point.
Evap.—Evaporated.
F.—Fahrenheit.
FL—Full Load.
Gal.—U.S. Gallon(s).
Gm.—Gram(s).
GVW—Gross Vehicle Weight.
HC—Hydrocarbon(s).
Hg—Mercury.
Hi.—High.
HP.—Horsepower.
IBP—Initial Boiling Point.
ID—Internal Diameter.
Lb.—Pound(s).
Lb.-ft.—Pound-feet.
Max.—Maximum.
Min.—Minimum; also minute(s).
Ml.—Milliliter(s).
M.p.h.—Miles per hour.
Mm.—Millimeter(s).
Mv.—Millivolt(s).
$N_2$—Nitrogen.
No.—Number.
Pb—Lead.
P.p.m.—Parts per million by volume.
P.s.i.—Pounds per square inch.
P.s.i.g.—Pounds per square inch gauge.
PTA—Part Throttle Accel.
PTD—Part Throttle Decel.
R—Rankine.
R.p.m.—Revolutions per minute.
RS—Rated Speed.
RVP—Reid Vapor Pressure.
S.A.E.—Society of Automotive Engineers.
Sec.—Second(s).
Sp.—Speed.
SS—Stainless Steel.
T—Torque.
TEL—Tetraethyl Lead.
TML—Tetramethyl Lead.
V.—Volts.
Vs.—Versus.
WOT—Wide Open Throttle.
Wt.—Weight.
'—Feet.
"—Inches.
°—Degrees.
%—Percent.

### § 85.3 General standards: increase in emissions; unsafe conditions.

(a) (1) Every new motor vehicle or new motor vehicle engine manufactured for sale, sold, offered for sale, introduced or delivered for introduction into commerce, or imported into the United States for sale or resale which is subject to any of the standards prescribed in this part shall be covered by a certificate of conformity issued pursuant to Subpart F of this part.

(2) No heavy duty vehicle manufacturer shall take any of the actions specified in section 203(a)(1) of the Act with respect to any gasoline fueled or diesel powered heavy duty vehicle which uses an engine which has not been certified as meeting applicable standards. Such manufacturer shall provide to the Secretary prior to the beginning of each model year a statement signed by an authorized representative which includes the following information:

(i) A description of the vehicles which will be produced subject to this section;

(ii) Identification of the engines used in the vehicles;

(iii) Projected sales data on each vehicle-engine combination;

(iv) A statement that the engines will not be modified by the vehicle manufacturer or a detailed specification of any changes which will be made. Changes made solely for the purpose of mounting an engine in a vehicle need not be included.

(b) (1) Any system installed on or incorporated in a new motor vehicle or new motor vehicle engine to enable such vehicle to conform to standards imposed by this part:

(i) Shall not in its operation or function cause the emission into the ambient air of any noxious or toxic substance that would not be emitted in the operation of such vehicle or engine without such system, except as specifically permitted by regulation; and

(ii) Shall not in its operation, function, or malfunction result in any unsafe condition endangering the motor vehicle, its occupants, or persons or property in close proximity to the vehicle.

(2) Every manufacturer of new motor vehicles or new motor vehicle engines subject to any of the standards imposed by this part shall, prior to taking any of the actions specified in section 203(a)(1) of the Act, test or cause to be tested motor vehicles or motor vehicle engines in accordance with good engineering practice to ascertain that such test vehicles or engines will meet the requirements of this section for the lifetime of the vehicle or engine as defined in § 85.92, § 85.113, or § 85.133, as appropriate.

§ 85.4 Labeling.

(a) (1) The manufacturer of any light duty motor vehicle subject to any of the standards prescribed in this part shall, at the time of manufacture, affix a permanent, legible label, of the type and in the manner described below, containing the information hereinafter provided, to all production models of such vehicles available for sale to the public and covered by a certificate of conformity under § 85.55(a).

(2) A plastic or metal label shall be welded, riveted, or otherwise permanently attached in a readily visible position in the engine compartment.

(3) The label shall be affixed by the vehicle manufacturer, who has been issued the certificate of conformity for such vehicle, in such a manner that it cannot be removed without destroying or defacing the label, and shall not be affixed to any equipment which is easily detached from such vehicle.

(4) The label shall contain the following information lettered in the English language in block letters and numerals, which shall be of a color that contrasts with the background of the label:

(i) The label heading: Vehicle Emission Control Information;

(ii) Full corporate name and trademark of manufacturer;

(iii) Engine displacement (in cubic inches) and engine family identification;

(iv) Engine tuneup specifications and adjustments, as recommended by the manufacturer, including idle speed, ignition timing, and the idle air-fuel mixture setting procedure and valve (e.g. idle CO, idle air-fuel ratio, idle speed drop). These specifications should indicate the proper transmission position during tuneup and what accessories (e.g., air-conditioner), if any, should be in operation;

(v) The statement: "This Vehicle Conforms to U.S. Dept. of H.E.W. Regulations Applicable to (insert current year) Model Year New Motor Vehicles."

(b) The manufacturer of any heavy duty gasoline fueled engine shall, at the time of manufacture, affix a permanent, legible plastic or metal label, containing the information hereinafter provided to all production models of such engines available for sale to the public, and covered by a certificate of conformity under § 85.55(a). The label shall be affixed at such a location that it will be readily accessible for inspection after the engine is installed in a vehicle and shall read as follows:

ENGINE EMISSION CERTIFICATION

This engine is, in all material respects, of substantially the same construction as test engines certified by the U.S. Department of Health, Education, and Welfare as conforming to Federal regulations pertaining to crankcase and exhaust emissions.

Engine family identification and engine displacement (in cubic inches) ____________
Date of manufacture ______________________
(Month and year)
Name of manufacturer ______________________

(The information applicable to each engine is to be inserted on the appropriate line.)

(c) The manufacturer of any heavy duty diesel engine shall, at the time of manufacture, affix a permanent, legible plastic or metal label containing the information hereinafter provided to all production models of such engines available for sale to the public, and covered by a certificate of conformity under § 85.55(a). The label shall be affixed at such a location that it will be readily accessible for inspection after the engine is installed in a vehicle and shall read as follows:

ENGINE SMOKE EMISSION CERTIFICATION

This engine is, in all material respects, of substantially the same construction as test engines certified by the U.S. Department of Health, Education, and Welfare as conforming to Federal regulations pertaining to exhaust smoke emission.

Engine family identification and model ____
______________________
Date of manufacture ______________________
(Month and year)
Name of manufacturer ______________________

(The information applicable to each engine is to be inserted on the appropriate line.)

(d) The provisions of this section shall not prevent a manufacturer from also reciting on the label that such vehicle or engine conforms to any applicable State emission standards for new motor vehicles or new motor vehicle engines or any other information that such manufacturer deems necessary for, or useful to, the proper operation and satisfactory maintenance of the vehicle or engine.

§ 85.5 Submission of vehicle identification numbers.

(a) The manufacturer of any light duty motor vehicle covered by a certificate of conformity under § 85.55(a) shall, not later than 60 days after its manufacture, submit to the Secretary the vehicle identification number of such vehicle: *Provided*, That this requirement shall not apply with respect to any vehicle manufactured within any State, as defined in section 302(d) of the Act.

(b) The requirements of this section may be waived with respect to any manufacturer who provides information satisfactory to the Secretary which will enable the Secretary to identify those vehicles or engines which are covered by a certificate of conformity.

§ 85.6 Production vehicles and engines.

(a) Any manufacturer obtaining certification under this part shall supply to the Secretary, upon his request, a reasonable number of production vehicles or engines selected by the Secretary which are representative of the engines, emission control systems, fuel systems, and transmissions offered and typical of production models available for sale under the certificate. These vehicles or engines shall be supplied for testing at such time and place and for such reasonable periods as the Secretary may require. Engines supplied under this paragraph may be required to be mounted in chassis and appropriately equipped for operation on a chassis dynamometer.

(b) Any manufacturer obtaining certification under this part shall notify the Secretary, on a quarterly basis, of the number of vehicles of each engine family - engine displacement - exhaust emission control system-fuel system-transmission type-inertia weight class combination or the number of engines of each engine family-engine displacement-exhaust emission control system-fuel system combination produced for sale in the United States during the preceding quarter. A manufacturer may elect to provide this information every 60 days instead of quarterly, to combine it with the notification required under § 85.5.

(c) All light duty vehicles covered by a certificate of conformity under § 85.55(a) shall be adjusted by the manufacturer to the ignition timing specification detailed in § 85.4(a)(4)(iv).

§ 85.7 Emission control system operation during test.

All emission control systems installed on or incorporated in a new motor vehicle or new motor vehicle engine shall be functioning during all test procedures in this part.

§ 85.8 Special test procedures.

The Secretary may, on the basis of a written application therefor by a manufacturer, prescribe test procedures, other than those set forth in this part, for any motor vehicle or motor vehicle engine which he determines is not susceptible to satisfactory testing by the procedures set forth herein.

§ 85.9 Maintenance of records; submittal of information; right of entry.

(a) The manufacturer of any new motor vehicle or new motor vehicle engine subject to any of the standards prescribed in this part shall establish and maintain the following adequately organized and indexed records:

(1) Identification and description of all vehicles or engines for which testing is required under this part.

(2) A description of all emission control systems which are installed on or incorporated in each vehicle or engine.

(3) A description of the procedures used to test such vehicles or engines.

(4) Test data on each emission data vehicle or engine which will show its emissions at 0 and 4,000 miles or 0 and 125 hours, respectively.

(5) Test data on each durability vehicle or engine which will show the performance of the systems installed on or incorporated in the vehicle or engine during extended mileage or operation, as well as a record of all pertinent maintenance performed on the vehicle or engine.

(b) The manufacturer of any new motor vehicle or new motor vehicle engine subject to any of the standards prescribed in this part shall submit to the Secretary at the time of issuance by the manufacturer copies of all instructions or explanations regarding the use, repair, adjustment, maintenance, or testing of such vehicle or engine relevant to the control of crankcase, exhaust, or evaporative emissions, issued by the manufacturer for use by other manufacturers, assembly plants, distributors, dealers, and ultimate purchasers: *Provided*, That any material not translated into the English language need not be submitted unless specifically requested by the Secretary.

(c) The manufacturer of any new motor vehicle or new motor vehicle engine subject to any of the standards prescribed in this part shall permit officers or employees duly designated by the Secretary, upon presenting appropriate credentials and a written notice to the manufacturer:

(1) To enter, at reasonable times, any premises used during the certification procedure for purposes of monitoring tests and mileage accumulation procedures, observing maintenance procedures, and verifying correlation or calibration of test equipment, or

(2) To inspect, at reasonable times, records, files, and papers compiled by such manufacturer in accordance with paragraph (a) of this section.

A separate notice shall be given for each such inspection, but a separate notice shall not be required for each entry made during the period covered by the inspection. Each such inspection shall be commenced and completed with reasonable promptness.

## Subpart B—Crankcase Emissions (Gasoline Fueled Vehicles and Engines)

### § 85.10 Applicability.

The provisions of this subpart are applicable to all new gasoline fueled light duty vehicles, except motorcycles, and heavy duty engines beginning with the 1972 model year for such vehicles and engines.

### § 85.11 Standard for crankcase emissions.

No crankcase emissions shall be discharged into the ambient atmosphere from any new motor vehicle or new motor vehicle engine subject to this subpart.

### § 85.12 Test procedures.

Every manufacturer of new motor vehicles or new motor vehicle engines subject to the standard prescribed in this subpart shall, prior to taking any of the actions specified in section 203(a)(1) of the Act, test or cause to be tested motor vehicles or motor vehicle engines in accordance with good engineering practice to ascertain that such test vehicles or engines, with proper maintenance, will meet the requirements of § 85.11 for a period not less than 100,000 miles or 3,000 hours, respectively. If, pursuant to § 85.55 (a), the Secretary issues a certificate of conformity for the class or classes of motor vehicles or motor vehicle engines represented by such test vehicles or engines, any new motor vehicle or motor vehicle engine which is in all material respects of substantially the same construction as such test vehicle or engine shall be deemed to be in conformity with the requirement of § 85.11.

## Subpart C—Exhaust Emissions and Fuel Evaporative Emissions (Gasoline Fueled Light Duty Vehicles)

### § 85.20 Applicability.

The provisions of this subpart are applicable to new gasoline fueled light duty motor vehicles beginning with the model year specified therein, except motorcycles and 1972 model year vehicles with an engine displacement of less than 50 cubic inches.

### § 85.21 Standards for exhaust emissions.

(a) Exhaust emissions from 1972, 1973, and 1974 model year vehicles shall not exceed:

(1) Hydrocarbons—3.4 grams per vehicle mile.

(2) Carbon monoxide—39.0 grams per vehicle mile.

(b) The standards set forth in paragraph (a) of this section refer to the exhaust emitted over a driving schedule as set forth in the applicable sections of "Test Procedures for Vehicle Exhaust and Fuel Evaporative Emissions (Gasoline Fueled Light Duty Vehicles)" of this part and measured and calculated in accordance with those procedures.

### § 85.22 Standard for fuel evaporative emissions.

(a) Fuel evaporative emissions from vehicles beginning with the 1972 model year shall not exceed:

(1) Hydrocarbons—2 grams per test.

(b) The standard set forth in paragraph (a) of this section refers to a composite sample of the fuel evaporative emissions collected under the conditions set forth in the "Test Procedures for Vehicle Exhaust and Fuel Evaporative Emissions (Gasoline Fueled Light Duty Vehicles)" of this part and measured in accordance with those procedures.

### § 85.23 Test procedures.

Every manufacturer of new motor vehicles subject to the standards prescribed in this subpart shall, prior to taking any of the actions specified in section 203 (a)(1) of the Act, test or cause to be tested motor vehicles in accordance with test procedures in Subpart H of this part to ascertain that such test vehicles meet the requirements of §§ 85.21 and 85.22, as applicable. If, pursuant to § 85.55(a), the Secretary issues a certificate of conformity for the class or classes of vehicles represented by such test vehicles, any new motor vehicle which is in all material respects of substantially the same construction as such test vehicles shall be deemed to be in conformity with the requirements of §§ 85.21 and 85.22, as applicable.

## Subpart D—Exhaust Emissions (Gasoline Fueled Heavy Duty Engines)

### § 85.30 Applicability.

The provisions of this subpart are applicable to new gasoline fueled heavy model year.

### § 85.31 Standards for exhaust emissions.

(a) Exhaust emissions from new gasoline fueled heavy duty engines shall not exceed:

(1) Hydrocarbons—275 p.p.m.

(2) Carbon monoxide—1.5 percent by volume.

(b) The standards set forth in paragraph (a) of this section refer to a composite sample representing the operating cycles set forth in the applicable sections of "Test Procedures for Engine Exhaust Emissions (Gasoline Fueled Heavy Duty Engines)" of this part and measured in accordance with those procedures.

### § 85.32 Test procedures.

Every manufacturer of new motor vehicle engines subject to the standards prescribed in this subpart shall, prior to taking any of the actions specified in section 203(a)(1) of the Act, test or cause to be tested motor vehicle engines in accordance with test procedures prescribed in Subpart I of this part to ascertain that such test engines meet the requirements of § 85.31. If, pursuant to § 85.55(a), the Secretary issues a certificate of conformity for the class or classes of motor vehicle engines represented by such test engines, any new motor vehicle engine which is in all material respects of substantially the same construction as such test engines shall be deemed to be in conformity with the requirements of § 85.31.

## Subpart E—Exhaust Emissions (Heavy Duty Diesel Engines)

### § 85.40 Applicability.

The provisions of this subpart are applicable to new heavy duty diesel engines beginning with the 1972 model year.

### § 85.41 Standards for exhaust smoke.

(a) The opacity of smoke emissions from new diesel engines subject to this subpart shall not exceed:

(1) 40 percent during the engine acceleration mode.

(2) 20 percent during the engine lugging mode.

(b) The standards set forth in paragraph (a) of this section refer to exhaust smoke emissions generated under the conditions set forth in the "Test Procedures for Engine Exhaust Emissions (Heavy Duty Diesel Engines)" of this part and measured and calculated in accordance with those procedures.

vehicle available for such testing under § 85.54 as the Secretary may require before beginning to accumulate mileage on the vehicle. Failure to comply with this requirement will invalidate all test data submitted for this vehicle.

(f) Once a manufacturer begins to operate an emission data or durability data vehicle, as indicated by compliance with paragraph (e) of this section, he shall continue to run the vehicle to 4,000 miles or 50,000 miles, respectively, and the data from the vehicle will be used in the calculations under § 85.92. Discontinuation of a vehicle shall be allowed only with the written consent of the Secretary.

(g) (1) The Secretary may elect to operate and test any test vehicle during all or any part of the mileage accumulation and testing procedure. In such cases, the manufacturer shall provide the vehicle(s) to the Secretary with all information necessary to conduct this testing.

(2) The test procedures (§§ 85.71–85.88) will be followed by the Secretary. The Secretary will test the vehicles at each test point. Maintenance may be performed by the manufacturer under such conditions as the Secretary may prescribe.

(3) The data developed by the Secretary for the engine-system combination shall be combined with any applicable data supplied by the manufacturer on other vehicles of that combination to determine the applicable deterioration factors for the combination. In the case of a significant discrepancy between data developed by the Secretary and that submitted by the manufacturer, the Secretary's data shall be used in the determination of deterioration factors.

## § 85.92 Compliance with emission standards.

(a) The exhaust and fuel evaporative emission standards in the regulations in this part apply to the average lifetime emissions of vehicles in public use. Prior to certification, lifetime emissions can be obtained by projection of test data to lifetime normal service. Normal service in an urban area or its equivalent for 100,000 miles is taken as the basis for "lifetime emissions."

(b) It is expected that emission control efficiency will change with mileage accumulation on the vehicle. It is assumed that the emission level of a vehicle which has accumulated 50,000 miles in normal service is the average emission level of that vehicle over its lifetime.

(c) The procedure for determining compliance of a new light-duty motor vehicle with exhaust and fuel evaporative emission standards is as follows:

(1) Separate emission deterioration factors shall be determined from the emission results of the durability data vehicles for each engine-system combination. A separate factor shall be established for the combination for exhaust HC, exhaust CO, and fuel evaporative HC.

(i) The applicable results to be used in determining the deterioration factors for each combination shall be:

(*a*) All emission data from the tests required under § 85.91(b), except the zero mile tests. This shall include the official test results, as determined in § 85.54, for all tests conducted on all durability vehicles of the combination selected under § 85.89(c) (including all vehicles elected to be operated by the manufacturer under § 85.89(c)(3)). Where the Secretary has agreed to a mileage less than 50,000 miles in accordance with § 85.91(b), the data for mileages greater than that actually run will be determined by extrapolating the test data generated at lesser mileages.

(*b*) All emission data from the tests conducted before and after the maintenance provided in § 85.90(a)(1)(i).

(ii) All applicable results shall be plotted as a function of the mileage on the system, rounded to the nearest mile, and the best fit straight lines, fitted by the method of least squares, shall be drawn through these data points. The interpolated 4,000- and 50,000-mile points on this line must be within the standards provided in §§ 85.21 and 85.22 or the data will not be acceptable for use in calculation of a deterioration factor.

(iii) An exhaust emission deterioration factor shall be calculated for each combination as follows:

$$\text{factor} = \frac{\text{exhaust emissions interpolated to 50,000 miles}}{\text{exhaust emissions interpolated to 4,000 miles}}$$

(iv) An evaporative emission deterioration factor shall be calculated for each combination by substracting the evaporative emissions interpolated to 4,000 miles from the evaporative emissions interpolated to 50,000 miles.

(2) (i) The exhaust emission test results for each emission data vehicle shall be multiplied by the appropriate deterioration factor: *Provided*, That if a deterioration factor as computed in subparagraph (1)(iii) of this paragraph is less than one, that deterioration factor shall be one for the purposes of this subparagraph.

(ii) The evaporative emission test results for each combination shall be adjusted by addition of the appropriate deterioration factor: *Provided*, That if a deterioration factor as computed in subparagraph (1)(iv) of this paragraph is less than zero, that deterioration factor shall be zero for the purposes of this subparagraph.

(3) The emissions to compare with the standard shall be the adjusted emissions of subparagraph (2) (i) and (ii) of this paragraph for each emission data vehicle.

(4) Every test vehicle of an engine family must comply with all applicable standards, as determined in subparagraph (3) of this paragraph, before any vehicle in that family may be certified.

# Subpart I—Test Procedures for Engine Exhaust Emissions (Gasoline Fueled Heavy Duty Engines)

## § 85.100 Introduction.

The procedures described in this subpart will be the test program to determine the conformity of new gasoline fueled heavy duty engines with the applicable standards set forth in this part.

(a) The test consists of prescribed sequences of engine operating conditions to be conducted on an engine dynamometer. The exhaust gases generated during engine operation are sampled continuously for specific component analysis through the analytical train. The tests are applicable to engines equipped with catalytic or direct-flame afterburners, induction system modifications, or other systems, or to uncontrolled engines.
signed to determine hydrocarbon and carbon monoxide concentrations during a truck driving pattern in a metropolitan area as simulated on an engine dynamometer. The test consists of two warm-up cycles and two hot cycles. The average concentrations for the warmup cycles and the hot cycles are combined to yield the reported values.

(c) When an engine is tested for exhaust emissions or is operated for durability testing on an engine dynamometer the complete engine shall be used with all accessories which might reasonably be expected to influence emissions to the atmosphere installed and functioning.

## § 85.101 Gasoline fuel specifications.

(a) For exhaust emission testing, fuel having specifications as shown in the table in § 85.71(a), or substantially equivalent specifications approved by the Secretary, shall be used.

(b) For durability testing, fuel having specifications as shown in the table in § 85.71(b), or substantially equivalent specifications approved by the Secretary, shall be used. The octane rating of the fuel used shall be in the range recommended by the engine manufacturer. The specifications of the fuel to be used shall be reported in accordance with § 85.51(b)(3).

## § 85.102 Dynamometer operation cycle and equipment.

(a) (1) The following nine-mode cycle shall be followed in dynamometer operation tests of gasoline fueled heavy duty engines.

| Sequence No. | Mode | Manifold vacuum | Time in Mode-Secs. | Cumulative Time-Secs. | Weighting factors |
|---|---|---|---|---|---|
| 1 | Idle |  | 70 | 70 | 0.036 |
| 2 | Cruise | 16" Hg | 23 | 93 | .089 |
| 3 | PTA | 10" Hg | 44 | 137 | .257 |
| 4 | Cruise | 16" Hg | 23 | 160 | .089 |
| 5 | PTD | 19" Hg | 17 | 177 | .047 |
| 6 | Cruise | 16" Hg | 23 | 200 | .089 |
| 7 | FL | 3" Hg | 34 | 234 | .283 |
| 8 | Cruise | 16" Hg | 23 | 257 | .089 |
| 9 | CT |  | 43 | 300 | .021 |

(2) The engine dynamometer shall be operated at a constant speed of 2,000 r.p.m.±100 r.p.m. (exception: representative engine speed for a given displacement engine as determined by its application, but not less than 1,800 r.p.m. nor greater than 2,500 r.p.m.).

(3) The idle operating mode shall be carried out at the manufacturer's recommended engine speed. The CT operating mode shall be carried out at the same engine speed as in subparagraph (2) of this paragraph.

(b) The following equipment shall be used for dynamometer tests.

(1) An engine dynamometer capable of maintaining constant speed±100 r.p.m. from full throttle to closed throttle motoring.

(2) A chassis-type exhaust system or substantially equivalent exhaust system, shall be used.

(3) A radiator typical of that used with the engine in a vehicle, or other means of engine cooling which will maintain the engine operating temperatures at approximately the same temperature as would the radiator, shall be used. An auxiliary fixed speed fan may be used to maintain engine cooling during sustained operation on the dynamometer.

**§ 85.103 Dynamometer procedures.**

An initial 5-minute idle, two warmup cycles, and two hot cycles constitute a a complete dynamometer run. Idle modes may be run at the beginning and end of each test, thus eliminating the need to change speed between cycles. One idle mode preceding the first cycle and one following the fourth cycle is sufficient. The results of the first idle shall be used for calculation of the second cycle emissions and the fourth idle results shall be used for calculation of the third cycle emissions.

**§ 85.104 Sampling and analytical system for measuring exhaust emissions.**

(a) *Schematic drawing.* The following (fig. 6) is a schematic drawing of the exhaust gas sampling and analytical system which shall be used for testing under the regulations in this subpart.

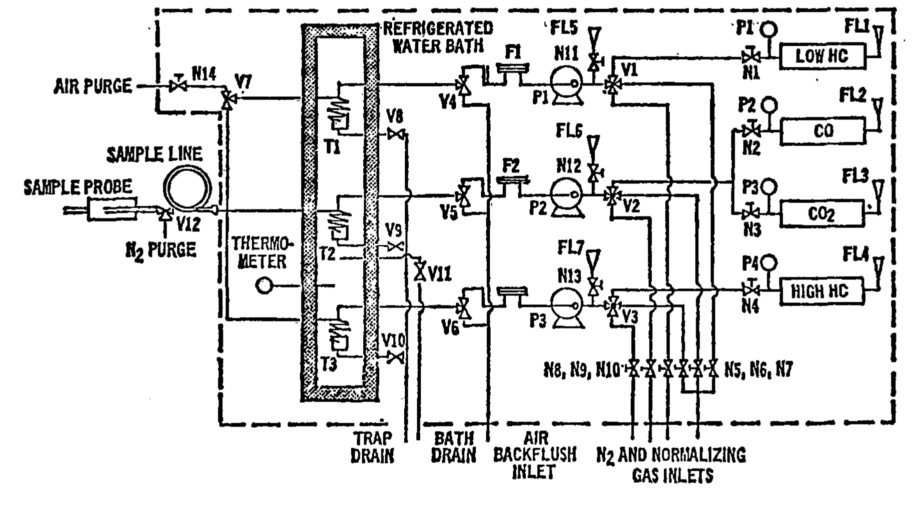



Figure 6. Flow schematic of exhaust gas analysis system employed in Federal facilities.

(b) *Component description.* The following components shall be used in sampling and analytical systems for testing under the regulations in this part.

(1) Flowmeters FL1, FL2, FL3, and FL4 indicate the sample flow rate through the analyzers.

(2) Low range hydrocarbon analyzer.

(3) Carbon monoxide analyzer.

(4) Carbon dioxide analyzer.

(5) High range hydrocarbon analyzer.

(6) Pressure gauges P1, P2, and P3 indicate the analyzer sample pressure.

(7) Needle valves N1, N2, N3, and N4 regulate sample flow rate to the analyzers.

(8) Needle valves N5, N6, N7, N8, N9, and N10 regulate the flow rates of $N_2$ and normalizing gases to the analyzers.

(9) Ball valves V1, V2, and V3 for directing either sample or calibration gases to the analyzers.

(10) Needle valves N11, N12, and N13 regulate the sample flow rate through the bypass network.

(11) Flowmeters FL5, FL6, and FL7 indicate the flow rate through the bypass system.

(12) Pumps P1, P2, and P3 for pulling sample from source.

(13) Filters F1, F2, and F3 remove contaminants from sample prior to analysis.

(14) Ball valves V4, V5, and V6 for directing sample to the analyzer or directing air in the reverse direction as a backflush.

(15) Toggle valves V8, V9, V10, and V11 for draining condensate traps and refrigerated bath.

(16) Traps T1, T2, and T3 for condensing water vapor and cooling exhaust sample.

(17) Ball valve V7 for diverting air to low HC analyzer during periods of high hydrocarbon response.

(18) Needle valve N14 for regulating air flow to low hydrocarbon analyzer during purge conditions.

(19) Thermometer for indicating bath temperature.

(20) Refrigerated water bath for condensing water vapor and cooling exhaust sample.

(21) Sample line from vehicle to analysis system.

(22) Sample probe to extract exhaust gas sample downstream of muffler.

(23) Ball valve V12 for directing $N_2$ to hydrocarbon analyzers.

(c) *Hang up reduction.* Stringent methods to reduce hang up may be employed. All methods must be approved in advance by the Secretary.

**§ 85.105 Information to be recorded on charts.**

The following information shall be recorded with respect to each test:

(a) Test number.

(b) System tested (brief description).

(c) Date and time of day for each part of the test schedule.

(d) Instrument Operator.

(e) Driver or Operator.

(f) Engine Make—identification number—date of manufacture—number of hours — engine displacement — engine family—idle r.p.m.—number carburetors—number of carburetor venturis.

(g) All pertinent instrument information such as tuning—gain—serial numbers—detector numbers—range.

(h) Recorder Charts: Identify zero, span, exhaust gas sample traces.

(i) Barometric pressure, intake air temperature and humidity and, as applicable, the temperature of the air in front of the radiator during the test.

(j) A continuous trace of intake manifold vacuum and engine r.p.m., recorded on the same chart with an automatic marker indicating one second intervals.

**§ 85.106 Calibration and instrument checks.**

(a) The instrument assembly shall be calibrated at least once every 30 days, using the same flow rate as when sampling exhaust and proceeding as follows:

(1) Tune analyzers.

(2) Zero on nitrogen: Check each cylinder of $N_2$ for contamination with hy-

drocarbons. Set the instrument gain to give the desired range. Normal operating ranges are as follows:

| | |
|---|---|
| Low-Range Hydrocarbon Analyzer. | 0–1,000 p.p.m. hexane equivalent. |
| High-Range Hydrocarbon Analyzer. | 0–10,000 p.p.m. hexane equivalent. |
| CO Analyzer | 0–10% CO. |
| $CO_2$ Analyzer | 0–16% $CO_2$. |

(3) Calibrate with the following normalizing gases. Flow rates should be set at 10 c.f.h. on the hydrocarbon analyzers and 5 c.f.h. on the carbon monoxide and carbon dioxide analyzers. The concentrations given indicate nominal concentrations, and actual concentrations should be known to within ±2 percent of true value. Prepurified $N_2$ is used as the diluent.

| Low range HC analyzer | High range HC analyzer | CO and $CO_2$ analyzers | | |
|---|---|---|---|---|
| | | Blend of CO and $CO_2$ containing: | | |
| *Hexane equivalent* [1] | *Hexane equivalent* | *Mole percent CO* | Plus | *Mole percent* $CO_2$ |
| 100 p.p.m | 600 p.p.m | 0.5 | | 16.0 |
| 200 p.p.m | 1,000 p.p.m | 1.0 | | 15.0 |
| 300 p.p.m | 1,500 p.p.m | 2.0 | | 14.0 |
| 400 p.p.m | 2,500 p.p.m | 3.0 | | 13.0 |
| 600 p.p.m | 4,000 p.p.m | 4.0 | | 12.0 |
| 800 p.p.m | 6,000 p.p.m | 6.0 | | 10.0 |
| 1,000 p.p.m | 8,000 p.p.m | 8.0 | | 8.0 |
| | 10,000 p.p.m | 10.0 | | 6.0 |

[1] The hexane equivalent of propane, when used as the normalizing gas for calibrating nondispersive infrared analyzers, is proscribed to be 0.52 (Propane Concentration×0.52=Hexane Equivalent Concentration).

Minimum storage temperature of the cylinders shall be 60° F.; minimum use temperature shall be 68° F.

(4) Compare values with previous curves. Any significant change reflects some problem in the system. Locate and correct problem, and recalibrate. Use best judgment in selecting curve for data reduction.

(5) Check response of hydrocarbon analyzer to 100 percent $CO_2$. If response is greater than 0.5 percent full scale, refill filter cells with 100 percent $CO_2$ and recheck. Note any remaining response on chart. If response still exceeds 0.5 percent, replace detector.

(6) Check response of hydrocarbon analyzers to nitrogen saturated with water at ambient temperature. Record ambient temperature. If the low-range instrument response exceeds 5 percent of full scale with saturated nitrogen at 75° F., replace the detector. If the high-range response exceeds 0.5 percent of full scale, check detector on low-range instrument, then reject if response exceeds 5 percent of full scale at 75° F.

(b) The following daily instrument check shall be performed, allowing a minimum of 2 hours warmup for infrared analyzers. (Power is normally left on continuously; but, when instruments are not in use, chopper motor is turned off.):

(1) Zero on clean nitrogen introduced at analyzer inlet. Obtain a stable zero on the amplifier meter and recorder. Recheck after test.

(2) Introduce normalizing gas and set gain to match calibration curve. In order to avoid a correction for sample cell pressure, normalize and calibrate at the same flow rates used for exhaust sampling. Normalizing or span gases: (See paragraph (a)(3) of this section for allowable variation.)

| | |
|---|---|
| Low-Range Hydrocarbon Analyzer. | 1,000 p.p.m. hexane equivalent in prepurified $N_2$. |
| High-Range Hydrocarbon Analyzer. | 10,000 p.p.m. hexane equivalent in prepurified $N_2$. |
| CO Analyzer | 10% CO in prepurified $N_2$. |
| $CO_2$ Analyzer | 12 to 16% $CO_2$ in prepurified $N_2$. |

If gain has shifted significantly, check tuning. If necessary, check calibration. Recheck after test. Record actual concentrations on chart.

(3) Check nitrogen zero, repeat the procedure in subparagraphs (1) and (2) of this paragraph if required.

(4) Check flow rates and pressures.

### § 85.107 Dynamometer test run.

(a) The engine shall be allowed to stand with engine turned off for at least 1 hour before the exhaust emission test at an ambient temperature of 60° F. to 86° F. The engine shall be stored prior to the emission tests in such a manner that it is not exposed to precipitation or condensation. During the dynamometer run, the ambient temperature shall be between 68° F. and 86° F.

(b) The following steps shall be taken for each test:

(1) Mount test engine on the engine dynamometer.

(2) Calibrate exhaust emission analyzer assembly.

(3) Start cooling system, if it is to be used.

(4) Start engine and idle at 1,000–1,200 r.p.m. for 5 minutes.

(5) Obtain normal idle speed, record it, and start exhaust sampling.

(6) Run four 9-mode cycles.

(c) Upon completion of the test, purge the sample line with nitrogen to establish a constant hydrocarbon "hangup" level. The hydrocarbon concentration shall drop to 5 percent of scale in 10 seconds, and 3 percent of scale in 3 minutes, or the test is invalid. Check calibration of exhaust emission instruments. A drift in excess of ±2 percent of scale in the calibration of any one of the exhaust emission analyzers will invalidate the test results.

### § 85.108 Chart reading.

The recorder response for measuring exhaust gas concentrations always lags the engine's operation because of a variable exhaust system delay and a fixed sample system delay. Therefore, the concentrations for each mode will not be located on the charts at a point corresponding to the exact time of the mode. For each warmup or hot cycle to be evaluated, proceed as follows:

(a) Determine whether the cycle was run in accordance with the specified cycle timing by observing either chart pips, speed trace, manifold vacuum trace, or concentration traces. Deviation by more than 2 seconds from the specified time for the closed throttle mode (sequence 9) or deviation of more than ±0.2" Hg from the specified mode vacuums during the last 10 seconds of a mode will invalidate the data.

(b) Time correlate the hydrocarbon, carbon monoxide, and carbon dioxide charts. Determine the location on the chart of concentrations corresponding to each mode. Determine and compensate for trace abnormalities.

(c) For all open throttle (3", 10", 16", and 19" Hg) and idle modes, integrate the last 3 seconds of the HC, CO and $CO_2$ traces.

(d) The values recorded for the initial idle mode are used for both warmup cycles 1 and 2. The final idle mode values are applied to hot cycles 3 and 4.

(e) Intergrate the complete HC, CO, and $CO_2$ traces during this 43-second closed throttle mode of each cycle.

(f) Direct computer analysis of analyzer output may be utilized provided that the analysis is sufficiently similar to the above procedures to result in comparable data results.

### § 85.109 Calculations.

The final reported test results shall be derived through the following steps:

(a) Determine composite hydrocarbon and carbon monoxide concentrations for the first and second cycles. Average the results of these two cycles.

(b) Determine composite hydrocarbon and carbon monoxide concentrations for the third and fourth cycles. Average the results of these two cycles.

(c) Combine the results of paragraphs (a) and (b) of this section according to the formula: 0.35(a) plus 0.65(b). Since hydrocarbon, carbon monoxide, and carbon dioxide are all measured with essentially the same moisture content, no moisture correction is required to convert the results to a dry basis. The correction factor:

$$\frac{14.5}{\%\ CO_2 + (0.5)\ \%\ CO + (1.8 \times 6)\ \%\ HC}$$

shall be applied to the measured concentrations of hydrocarbon and carbon monoxide to correct these observed values for dilution of the exhaust.

### § 85.110 Test engines.

(a) The engines covered by the application for certification will be divided into engine families based upon the criteria outlined in § 85.89(a).

(b) Emission data engines:

(1) Engines will be chosen to be run for emission data based upon the engine family groupings. Within each engine

family, the requirements of this paragraph must be met.

(2) Engines of each engine family will be divided into engine displacement-exhaust emission control system combinations. A projected sales volume will be established for each combination for the model year for which certification is sought. One engine of each combination will be selected in order of decreasing projected sales volume until 70 percent of the projected sales of a manufacturer's total production of engines of that family is represented, or until a maximum of four engines is selected. The engines selected for each combination will be specified by the Secretary as to fuel system.

(3) The Secretary may select a maximum of two additional engines within each engine family based upon features indicating that they may have the highest emission levels of the engines in that engine family. In selecting these engines, the Secretary will consider such features as the exhaust emission control system, induction system characteristics, ignition system characteristics, fuel system, rated horsepower, rated torque, and compression ratio.

(4) If the engines selected in accordance with subparagraphs (2) and (3) of this paragraph do not represent each engine-system combination, then one engine of each engine-system combination not represented shall be selected by the Secretary. The engine selected shall be of the displacement with the largest projected sales volume of engines with the exhaust emission control system in the family and will be designated by the Secretary as to fuel system.

(c) Durability data engines:

(1) A durability data engine will be selected by the Secretary to represent each engine-system combination. The engine selected shall be of the displacement with the largest projected sales volume of engines with that exhaust emission control system in that engine family and will be designated by the Secretary as to fuel system.

(2) If an exhaust emission control system is used in only one engine family, an additional engine using that control system in that family will be selected so that the durability data fleet shall contain at least two engines with each control system. The additional engine will be selected in the same manner as engines selected under subparagraph (1) of this paragraph.

(3) A manufacturer may elect to operate and test additional engines to represent any engine-system combination. The additional engines must be of the same engine displacement and fuel system as the engine selected for that combination in accordance with the provisions of subparagraph (1) of this paragraph. Notice of an intent to run additional engines shall be given to the Secretary not later than 30 days following notification of the test fleet selection.

(d) Any manufacturer whose projected sales of new motor vehicle engines subject to this subpart for the model year for which certification is sought is less than 700 engines may request a reduction in the number of test engines determined in accordance with the foregoing provisions of this section. The Secretary may agree to such lesser number as he determines will meet the objectives of this procedure.

(e) In lieu of testing an emission data or durability data vehicle selected under paragraph (b) or (c) of this section and submitting data therefor, a manufacturer may, with the prior written approval of the Secretary, submit data on a similar vehicle for which certification has previously been obtained.

§ 85.111 **Maintenance.**

(a) (1) Maintenance on the engines and fuel systems of durability engines may be performed only under the following provisions:

(i) Two major engine tuneups to manufacturer's specifications may be performed at 500 and 1,000 hours (±8 hours) of scheduled dynamometer operation with the following exception: On engines with a displacement of 200 cubic inches or less, a major engine tuneup may be performed at 375, 750, and 1,125 hours (±8 hours) of scheduled dynamometer operation. A major engine tuneup shall be restricted to the following:

(*a*) Replace spark plugs.

(*b*) Inspect ignition wiring and replace as required.

(*c*) Replace distributor breaker points and condensor as required.

(*d*) Lubricate distributor cam.

(*e*) Check distributor advance and breaker point dwell angle and adjust as required.

(*f*) Check automatic choke for free operation and correct as required.

(*g*) Adjust carburetor idle speed and mixture.

(*h*) Adjust drive belt tension on engine accessories.

(*i*) Adjust valve lash if required.

(*j*) Check exhaust heat control valve for free operation.

(*k*) Check engine bolt torque and tighten as required.

(ii) Spark plugs may be changed if a persistent misfire is detected.

(iii) Normal services (engine oil change, and oil filter, fuel filter and air filter servicing) will be allowed at manufacturer's recommended intervals.

(iv) The crankcase emission control system may be serviced at 375-hour intervals (±8 hours) of dynamometer operation.

(v) Readjustment of the engine choke mechanism or idle settings may be performed only if there is a problem of stalling at idle.

(vi) Leaks in the fuel system, engine lubrication system and cooling system may be repaired.

(vii) Any other engine or fuel system maintenance or repairs will be allowed only with the advance approval of the Secretary.

(2) Allowable maintenance on emission data engines shall be limited to the adjustment of engine idle speed at the 125-hour test point.

(b) Complete emission tests (see §§ 85.101–85.109) shall be run before and after any engine maintenance which may reasonably be expected to affect emissions. These test data shall be supplied to the Secretary immediately after the tests, along with a complete record of all pertinent maintenance, including an engineering report of any malfunction diagnosis and the corrective action taken. In addition, all test data and maintenance reports shall be compiled and provided to the Secretary in accordance with §85.53.

(c) If the Secretary determines that maintenance or repairs have resulted in a substantial change to the engine-system combination, the engine shall not be used as a durability data engine.

§ 85.112 **Service accumulation and emission measurements.**

The engine dynamometer service accumulation schedule will consist of several operating conditions which give the same percentage of time at various manifold vacuums and the modes as specified in the emission test cycle. The average speed shall be between 1,650 and 1,700 r.p.m. with some operation at 3,200 r.p.m. or governed speed, whichever is lower. Maximum cycle time shall be 15 minutes. A cycle approved in advance by the Secretary shall be used.

(a) Emission data engines: Each emission data engine shall be operated for 125 hours with all emission contol systems installed and operating. Emission tests shall be conducted at zero and 125 hours.

(b) Durability data engines: Each durability data engine shall be operated, with all emission control systems installed and operating, for 1,500 hours. Emission measurements, as prescribed, shall be made at zero hours and at each 125-hour interval.

(c) All tests required by this subpart to be conducted after 125 hours of operation or at any multiple of 125 hours may be conducted at any accumulated number of hours within 8 hours of 125 hours or the appropriate multiple of 125 hours, respectively.

(d) The results of each emission test shall be supplied to the Secretary immediately after the test. In addition, all test data shall be compiled and provided to the Secretary in accordance with § 85.53.

(e) Whenever the manufacturer proposes to operate and test an engine which may be used for emission or durability data, he shall provide the zero-hour test data to the Secretary and make the engine available for such testing under § 85.54 as the Secretary may require, before beginning to accumulate hours on the engine. Failure to comply with this requirement will invalidate all test data later submitted for this engine.

(f) Once a manufacturer begins to operate an emission data or durability data engine, as indicated by compliance with paragraph (e) of this section, he shall continue to run the engine to 125 hours or 1,500 hours, respectively, and the data from the engine will be used in the calculations under § 85.113. Discontinuation of an engine shall be allowed only with the prior written consent of the Secretary.

**§ 85.113 Compliance with emission standards.**

(a) The exhaust emission standards in the regulations in this part apply to the average lifetime emissions of engines in public use. Prior to certification, lifetime emissions can be obtained by projection of test data to lifetime normal service. Normal service in an urban area or its equivalent for 100,000 miles is taken as the basis for "lifetime emissions." Operation on an engine dynamometer in the prescribed manner for 3,000 hours is taken to be equivalent to such service.

(b) It is expected that emission control efficiency will change with the accumulation of hours on the engine. It is assumed that the emission level of an engine which has accumlated 1,500 hours of dynamometer operation is the average emission level of that engine over its lifetime.

(c) The procedure for determining compliance of a new engine with exhaust emission standards is as follows:

(1) Separate emission deterioration factors shall be determined from the emission results of the durability data engines for each engine-system combination. Separate factors shall be established for HC and CO for each combination.

(i) The applicable results to be used in determining the deterioration factors for each combination shall be:

(*a*) All emission data from the tests required under § 85.112(b), except the zero-hour tests. This shall include the official test results, as determined in § 85.54, for all tests conducted on all durability engines of the combination selected under § 85.110(c) (including all engines elected to be operated by the manufacturer under § 85.110(c)(3)).

(*b*) All emission data from the tests conducted before and after the maintenance provided in § 85.111(a)(1)(i).

(ii) All applicable results shall be plotted as a function of the hours on the system, rounded to the nearest hour, and the best fit straight lines, fitted by the method of least squares, shall be drawn through these data points. The interpolated 125- and 1,500-hour points on this line must be within the standard provided in § 85.31 or the data shall not be used in calculation of a deterioration factor.

(iii) An exhaust emission deterioration factor shall be calculated for each combination as follows:

$$\text{factor} = \frac{\text{exhaust emissions interpolated to 1,500 hours}}{\text{exhaust emissions interpolated to 125 hours}}$$

(2) The exhaust emission test results for each emission data engine shall be multiplied by the appropriate deterioration factor: *Provided*, That if a deterioration factor as computed in subparagraph (1) of this paragraph is less than one, that deterioration factor shall be one for the purposes of this subparagraph.

(3) The emissions to compare with the standard shall be the adjusted emissions of subparagraph (2) of this paragraph for each emission data engine.

(4) Every test engine of an engine family must comply with all applicable standards, as determined in subparagraph (3) of this paragraph, before any engine in that family will be certified.

## Subpart J—Test Procedures for Engine Exhaust Emissions (Heavy Duty Diesel Engines)

**§ 85.120 Introduction.**

(a) The procedures described in this subpart will be the test program to determine the conformity of heavy duty diesel engines with the applicable standards set forth in this part:

(b) The test consists of a prescribed sequence of engine operating conditions on an engine dynamometer with continuous examination of the exhaust gases. The test is applicable equally to controlled engines equipped with means for preventing, controlling, or eliminating smoke emissions and to uncontrolled engines.

(c) The test is designed to determine the opacity of smoke in exhaust emissions during those engine operating conditions which tend to promote smoke from diesel-powered vehicles.

(d) The test procedure begins with a warm engine which is then run through preloading and preconditioning operations. After an idling period, the engine is operated through acceleration and lugging modes during which smoke emission measurements are made to compare with the standards. The engine is then returned to the idle condition and the acceleration and lugging modes are repeated. Three sequences of acceleration and lugging constitute the full set of operating conditions for smoke emission measurement.

**§ 85.121 Diesel fuel specifications.**

(a) The diesel fuels employed shall be clean and bright, with pour and cloud points adequate for operability. The fuels may contain nonmetallic additives as follows: cetane improver, metal deactivator, antioxidant, dehazer, antirust, pour depressant, dye, and dispersant.

(b) Fuel meeting the following specifications, or substantially equivalent specifications approved by the Secretary, shall be used in exhaust emission testing. The grade of fuel recommended by the engine manufacturer, commercially designated as "Type 1-D" or "Type 2-D", shall be used.

| Item | ASTM test method No. | Type 1-D | Type 2-D |
|---|---|---|---|
| Cetane | D 613 | 48-54 | 42-50 |
| Distillation range | D 86 | | |
| IBP, °F | | 330-390 | [illegible] |
| 10 percent point, °F | | 370-430 | [illegible] |
| 50 percent point, °F | | 410-480 | [illegible] |
| 90 percent point, °F | | [illegible] | [illegible] |
| EP, °F | | 500-560 | [illegible] |
| Gravity, ° API | D 287 | 40-44 | 33-37 |
| Total sulfur, percent | D 129 or D 2622 | 0.05-0.20 | 0.2-0.5 |
| Hydrocarbon composition | D 1319 | | |
| Aromatics, percent | | 8-15 | 27 (Min.) |
| Paraffins, Naphthenes, Olefins | | Remainder | Remainder |
| Flash point, °F (Min.) | D 93 | 120 | 130 |
| Viscosity, centistokes | D 445 | 1.6-2.0 | 2.0-3.2 |

(c) Fuel meeting the following specifications, or substantially equivalent specifications approved by the Secretary, shall be used in service accumulation. The grade of fuel recommended by the engine manufacturer, commercially designated as "Type 1-D" or "Type 2-D", shall be used.

| Item | ASTM test method No. | Type 1-D | Type 2-D |
|---|---|---|---|
| Cetane | D 613 | 48-54 | 42-55 |
| Distillation range | D 86 | | |
| IBP, °F | | 330-390 | 340-410 |
| 10 percent point, °F | | 370-430 | 400-470 |
| 50 percent point, °F | | 410-480 | 470-540 |
| 90 percent point, °F | | 460-520 | 530-610 |
| EP, °F | | 500-560 | 580-660 |
| Gravity, °API | D 287 | 40-44 | 33-40 |
| Total sulfur, percent | D 129 or D 2622 | 0.05-0.20 | 0.2-0.5 |
| Flash point, °F (Min.) | D 93 | 120 | 130 |
| Viscosity, centistokes | D 445 | 1.6-2.0 | 2.0-3.2 |

(d) The type fuel, including additive and other specifications, used under paragraphs (b) and (c) of this section shall be reported in accordance with § 85.51(b)(3).

**§ 85.122 Dynamometer operation cycle for smoke emission tests.**

(a) The following sequence of operations shall be performed during engine dynamometer testing of smoke emissions, starting with the dynamometer preloading determined and the engine preconditioned (§ 85.127(c)).

(1) *Idle mode.* The engine is caused to idle for 5 to 5.5 minutes at the manufacturer's recommended low idle speed. The dynamometer controls shall be set to provide minimum load by turning the load switch to the "off" position or by adjusting the controls to the minimum load position.

(2) *Acceleration mode.* (i) The engine speed shall be increased to 200±50 r.p.m. above the manufacturer's recommended low idle speed within 3 seconds.

(ii) The engine shall be accelerated at full-throttle against the inertia of the engine and dynamometer or alternately against a preselected dynamometer load such that the engine speed reaches 85 to 90 percent of rated speed in 5±1.5 seconds.

# APPENDIX D

# RESULTS OF SURVEILLANCE TEST BY INSPECTION ROUND

TABLE D-1. VEHICLE DESCRIPTION AND FIRST ROUND EMISSION RESULTS
"0" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF JULY 6, 1971)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans. Speeds* | GVW lbs. | Vehicle Type | Test Mileage | Emission Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10-22-70 | P041001 | P. O. D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 8 | 198 | 1.44 | 1019 | 857 | 1 |
| 2 | 10-22-70 | P040999 | P. O. D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 19 | 226 | 2.07 | 1192 | 1102 | 2 |
| 3 | 10-23-70 | P040997 | P. O. D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 21 | 209 | 2.05 | 818 | 688 | 3 |
| 4 | 10-23-70 | P041000 | P. O. D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 38 | 216 | 2.08 | 1044 | 878 | 4 |
| 5 | 10-23-70 | P041002 | P. O. D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 22 | 173 | 1.89 | 656 | 552 | 5 |
| 6 | 11-18-70 | 353 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 9245 | 189 | 1.49 | 2221 | 2387 | 6 |
| 7 | 11-19-70 | 349 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 9109 | 182 | 4.49 | 1213 | 1316 | 7 |
| 8 | 11-20-70 | 351 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 9178 | 166 | 2.04 | 1725 | 1450 | 8 |
| 9 | 11-23-70 | 350 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 9010 | 96 | 1.87 | 1902 | 1878 | 9 |
| 10 | 11-24-70 | 352 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 9552 | 138 | 2.54 | 1647 | 1385 | 10 |
| 11 | 11-25-70 | 24340 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 163 | 296 | 1.61 | 1439 | 1474 | 11 |
| 12 | 11-27-70 | 24341K | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 56 | 255 | 1.21 | 1605 | 1767 | 12 |
| 13 | 11-27-70 | 24343 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 2730 | 229 | 1.82 | 1419 | 1563 | 13 |
| 14 | 11-27-70 | 24342 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 1259 | 255 | 1.15 | 1719 | 1701 | 14 |
| 15 | 11-30-70 | 56 | N. S. S. D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 4196 | 250 | 1.30 | 2186 | 2283 | 15 |
| 16 | 12-1-70 | 53 | N. S. S. D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 4037 | 284 | 1.22 | 2305 | 2330 | 16 |
| 17 | 12-2-70 | 55 | N. S. S. D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 3620 | 236 | 1.05 | 2294 | 2453 | 17 |
| 18 | 12-3-70 | 6 | N. S. S. D. | 1970 | IHC | 345 | V8 | 5 | 22,000 | School Bus | 4197 | 272 | 1.13 | 2477 | 2572 | 18 |
| 19 | 12-4-70 | 54 | N. S. S. D. | 1970 | IHC | 345 | V8 | 5 | 22,000 | School Bus | 3961 | 345 | 1.59 | 2141 | 2187 | 19 |
| 20 | 12-3-70 | 72341 | Hertz | 1970 | Ford | 300 | 6 | 3 auto | 10,000 | Stake | 7361 | 170 | 0.54 | 2796 | 2846 | 20 |
| 21 | 12-4-70 | 72218 | Hertz | 1970 | Ford | 240 | 6 | 3 auto | 7,500 | Pickup | 9108 | 261 | 0.45 | 2356 | 2445 | 21 |
| 22 | 12-4-70 | 5131 | C. P. S. B. | 1971 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 44 | 273 | 2.61 | 960 | 997 | 22 |
| 23 | 12-4-70 | 5132 | C. P. S. B. | 1970 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 43 | 271 | 181 | 1221 | 1272 | 23 |
| 24 | 12-7-70 | 5136 | C. P. S. B. | 1971 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 37 | 262 | 1.34 | 1289 | 1219 | 24 |
| 25 | 12-7-70 | 5141 | C. P. S. B. | 1971 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 29 | 148 | 2.04 | 602 | 604 | 25 |
| 26 | 12-4-70 | 4952 | C. P. S. B. | 1971 | IHC | 304 | V8 | 4 | 14,000 | Van | 34 | 252 | 1.21 | 2013 | 2089 | 26 |
| 27 | 12-7-70 | 6615 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 365 | 223 | 0.56 | 1678 | 1708 | 27 |
| 28 | 12-7-70 | 6616 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 415 | 192 | 0.36 | 1580 | 1487 | 28 |
| 29 | 12-8-70 | 4824 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 2103 | 209 | 0.59 | 2923 | 2934 | 29 |
| 30 | 12-8-70 | 4726 | C. P. S. B. | 1970 | Chev | 292 | 6 | 4 | 9,000 | Service | 4356 | 244 | 1.15 | 2184 | 2193 | 30 |
| 31 | 12-10-70 | 4728 | C. P. S. B. | 1970 | Chev | 250 | 6 | 4 | 7,500 | Service | 3000 | 266 | 1.46 | 2346 | 2419 | 31 |
| 32 | 12-10-70 | 4729 | C. P. S. B. | 1970 | Chev | 250 | 6 | 4 | 7,500 | Service | 1274 | 274 | 1.69 | 2189 | 2228 | 32 |
| 33 | 12-10-70 | 671 | Brown Exp. | 1971 | Ford | 300 | 6 | 5 | 24,000 | Freight Van | 20 | 209 | 1.07 | 2234 | 2192 | 33 |
| 34 | 12-10-70 | 672 | Brown Exp. | 1971 | Ford | 300 | 6 | 5 | 24,000 | Freight Van | 27 | 138 | 0.32 | 2154 | 2151 | 34 |
| 35 | 12-10-70 | 673 | Brown Exp. | 1971 | Ford | 300 | 6 | 5 | 24,000 | Freight Van | 12 | 149 | 0.65 | 2113 | 2108 | 35 |
| 36 | 12-10-70 | 4727 | C. P. S. B. | 1970 | Chev | 250 | 6 | 4 | 7,500 | Service | 2228 | 249 | 1.27 | 2336 | 2329 | 36 |
| 37 | 12-10-70 | 4730 | C. P. S. B. | 1970 | Chev | 250 | 6 | 4 | 7,500 | Service | 841 | 263 | 1.19 | 2462 | 2455 | 37 |
| 38 | 12-11-70 | 4951 | C. P. S. B. | 1970 | IHC | 304 | V8 | 4 | 14,000 | Service | 1549 | 253 | 0.78 | 2916 | 2363 | 38 |
| 39 | 12-11-70 | 8810 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 1677 | 184 | 0.69 | 1884 | 1508 | 39 |
| 40 | 12-14-70 | 8811 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 1227 | 174 | 0.54 | 3165 | 3007 | 40 |
| 41 | 12-14-70 | 6855 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 343 | 146 | 0.53 | 1730 | 1698 | 41 |
| 42 | 12-15-70 | 6617 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Wrecker | 414 | 176 | 0.48 | 1112 | 1065 | 42 |
| 43 | 12-15-70 | 6856 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 2770 | 171 | 0.83 | 2592 | 2583 | 43 |
| 44 | 12-16-70 | 4671 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Stake | 1142 | 171 | 0.35 | 2600 | 2312 | 44 |
| 45 | 12-16-70 | 6857 | C. P. S. B | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 3357 | 197 | 0.78 | 2263 | 1975 | 45 |
| 46 | 12-17-70 | 4950 | C. P. S. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Bucket Truck | 561 | 303 | 0.96 | 2257 | 2005 | 46 |
| 47 | 12-28-70 | 312 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 6816 | 272 | 1.02 | 2121 | 1836 | 47 |
| 48 | 12-28-70 | 314 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 3521 | 346 | 1.63 | 2080 | 1831 | 48 |
| 49 | 12-29-70 | 301 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 10,000 | Crew Truck | 3099 | 265 | 0.99 | 2571 | 2261 | 49 |
| 50 | 12-29-70 | 302 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 10,000 | Crew Truck | 4264 | 352 | 2.24 | 2067 | 1810 | 50 |

*Hi-lo means two-speed rear axle.

TABLE D-1 (Cont'd). VEHICLE DESCRIPTION AND FIRST ROUND EMISSION RESULTS
"0" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF JULY 6, 1971)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans Speeds* | GVW lbs. | Vehicle Type | Initial Mileage | Emission Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 | 12-30-70 | 93 | Pearl | 1970 | IHC | 304 | V8 | 3 | 7,500 | Delivery | 11,034 | 261 | 1.40 | 2322 | 2086 | 51 |
| 52 | 12-31-70 | 105 | Pearl | 1970 | GMC | 292 | 6 | 3 | 7,500 | Delivery | 15,944 | 253 | 0.86 | 3241 | 2803 | 52 |
| 53 | 12-31-70 | 106 | Pearl | 1970 | Dodge | 318 | V8 | 3 | 7,500 | Delivery | 8,504 | 277 | 1.50 | 2050 | 1972 | 53 |
| 54 | 12-31-70 | 122 | Pearl | 1970 | Ford | 300 | 6 | 3 | 7,500 | Delivery | 18,143 | 186 | 0.26 | 3984 | 3957 | 54 |
| 55 | 1-2-71 | 311 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 3,729 | 331 | 1.39 | 1805 | 1844 | 55 |
| 56 | 1-2-71 | 313 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 4,938 | 280 | 1.27 | 1784 | 1612 | 56 |
| 57 | 1-2-71 | 315 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 2,812 | 350 | 1.49 | 1959 | 2000 | 57 |
| 58 | 1-2-71 | 316 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 1,522 | 276 | 1.35 | 1968 | 1692 | 58 |
| 59 | 1-2-71 | 317 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 3,320 | 301 | 1.20 | 2035 | 1691 | 59 |
| 60 | 1-3-71 | 253 | C.W.B. | 1970 | Chevrolet | 307 | V8 | 4 | 7,500 | Service | 2,056 | 280 | 3.79 | 1102 | 1150 | 60 |
| 61 | 1-3-71 | 254 | C.W.B. | 1970 | Chevrolet | 307 | V8 | 4 | 7,500 | Service | 5,031 | 279 | 2.90 | 1184 | 1299 | 61 |
| 62 | 1-3-71 | 391 | C.W.B. | 1970 | Chevrolet | 366 | V8 | 5 | 32,000 | Crane | 687 | 170 | 1.14 | 1282 | 1033 | 62 |
| 63 | 1-3-71 | 392 | C.W.B. | 1970 | Chevrolet | 366 | V8 | 5 | 32,000 | Crane | 990 | 184 | 1.16 | 481 | 390 | 63 |
| 64 | 1-6-71 | 582 | Red Arrow | 1970 | Dodge | 318 | V8 | 4 | 24,000 | Freight | 14,520 | 294 | 1.47 | 2519 | 2308 | 64 |
| 65 | 1-7-71 | 581 | Red Arrow | 1970 | Dodge | 318 | V8 | 4 | 24,000 | Freight | 10,656 | 328 | 1.94 | 2489 | 2119 | 65 |
| 66 | 1-9-71 | 251 | C.W.B. | 1970 | Dodge | 318 | V8 | 3 auto | 7,500 | Meter | 6,025 | 247 | 1.70 | 1796 | 1579 | 66 |
| 67 | 1-9-71 | 252 | C.W.B. | 1970 | Dodge | 318 | V8 | 3 auto | 7,500 | Service | 4,981 | 298 | 1.64 | 1752 | 1589 | 67 |
| 68 | 1-9-71 | 360 | C.W.B. | 1970 | Ford | 361 | V8 | 5 | 25,500 | Dump | 8,094 | 322 | 1.76 | 1958 | 1721 | 68 |
| 69 | 1-12-71 | 5133 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 32 | 274 | 2.36 | 1022 | 1061 | 69 |
| 70 | 1-12-71 | 5140 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 30 | 291 | 2.06 | 977 | 1033 | 70 |
| 71 | 1-12-71 | 5097 | C.P.S.B. | 1971 | IHC | 345 | V8 | 5 | 25,000 | Digger | 456 | 270 | 1.14 | 1772 | 1878 | 71 |
| 72 | 1-12-71 | 5106 | C.P.S.B. | 1971 | IHC | 345 | V8 | 5 | 25,000 | Digger | 464 | 295 | 1.10 | 1585 | 1671 | 72 |
| 73 | 1-13-71 | 5130 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 45 | 281 | 2.32 | 1195 | 1256 | 73 |
| 74 | 1-13-71 | 5135 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 287 | 289 | 2.17 | 1238 | 1270 | 74 |
| 75 | 1-16-71 | M-78 | State Hosp | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 5,963 | 255 | 2.13 | 2176 | 1881 | 75 |
| 76 | 1-16-71 | M-80 | State Hosp | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 1,791 | 211 | 2.03 | 2271 | 1910 | 76 |
| 77 | 1-16-71 | M-98 | State Hosp | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 2,019 | 226 | 1.83 | 2452 | 2599 | 77 |
| 78 | 1-16-71 | SH-680 | State Hosp | 1970 | Ford | 302 | V8 | 3 auto | 6,800 | Van | 1,442 | 164 | 1.07 | 1795 | 1803 | 78 |
| 79 | 1-16-71 | SH-699 | State Hosp | 1970 | GMC | 401 | V6 | 5 | 27,000 | Bus | 838 | 229 | 2.04 | 1760 | 1656 | 79 |
| 80 | 1-18-71 | 1029 | Lone Star | 1970 | Chevrolet | 307 | V8 | 4 | 6,600 | Delivery | 26,622 | 172 | 2.30 | 2655 | 2384 | 80 |
| 81 | 1-20-71 | 134 | Herder | 1970 | Ford | 300 | 6 | 5 | 21,000 | Freight | 16,201 | 132 | 0.52 | 1765 | 1731 | 81 |
| 82 | 1-21-71 | 135 | Herder | 1970 | Ford | 300 | 6 | 5 | 21,000 | Freight | 11,190 | 180 | 0.83 | 2024 | 1870 | 82 |
| 83 | 1-21-71 | 239 | Herder | 1970 | Ford | 361 | V8 | 5 | 22,000 | Freight | 10,511 | 232 | 1.18 | 1658 | 1540 | 83 |
| 84 | 1-21-71 | 240 | Herder | 1970 | Ford | 361 | V8 | 5 | 22,000 | Freight | 13,920 | 282 | 1.40 | 2212 | 2093 | 84 |
| 85 | 1-21-71 | 250 | C.W.B. | 1970 | Chevrolet | 307 | V8 | 2 auto | 7,500 | Service | 18,225 | 292 | 3.16 | 1624 | 1632 | 85 |
| 86 | 1-23-71 | L-41 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 10,000 | Laundry | 2,568 | 181 | 1.67 | 1651 | 1512 | 86 |
| 87 | 1-23-71 | M-77 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 10,000 | Grounds | 1,985 | 185 | 1.76 | 2197 | 2259 | 87 |
| 88 | 1-23-71 | M-87 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 7,500 | Service | 4,875 | 207 | 1.57 | 2301 | 2192 | 88 |
| 89 | 1-23-71 | M-90 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 10,000 | Maintenance | 3,274 | 201 | 1.60 | 2097 | 2135 | 89 |
| 90 | 1-23-71 | M-95 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 10,000 | Grounds | ,201 | 181 | 1.67 | 2147 | 2123 | 90 |
| 91 | 1-26-71 | 2179 | City P&R | 1970 | IHC | 345 | V8 | 4 | 19,000 | Water Truck | 219 | 230 | 0.89 | 2180 | 1969 | 91 |
| 92 | 1-27-71 | 2120 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maintenance | 2,948 | 209 | 1.20 | 2052 | 1736 | 92 |
| 93 | 1-27-71 | 27 | B.M.W. | 1970 | Ford | 360 | V8 | 4 | 7,500 | Repair | 7,553 | 230 | 1.85 | 1946 | 1981 | 93 |
| 94 | 1-28-71 | 2073 | City P&R | 1970 | Chevrolet | 292 | 6 | 3 auto | 14,000 | Maintenance | 1,770 | 173 | 0.89 | 2222 | 2284 | 94 |
| 95 | 1-28-71 | 2121 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maintenance | 2,262 | 260 | 2.06 | 1419 | 1497 | 95 |
| 96 | 1-29-71 | 4T1 | B.C.R.D. | 1970 | Ford | 240 | 6 | 3 | 7,500 | Maintenance | 13,174 | 261 | 0.93 | 1853 | 1840 | 96 |
| 97 | 1-29-71 | 4T16 | B.C.R.D. | 1970 | Ford | 240 | 6 | 3 | 7,500 | Welder | 9,762 | 262 | 1.62 | 1900 | 1864 | 97 |
| 98 | 1-30-71 | 1T22 | B.C.R.D. | 1970 | Ford | 330 | V8 | 5 | 21,000 | Water Truck | 15,424 | 253 | 0.71 | 3025 | 3188 | 98 |
| 99 | 1-30-71 | 2T9 | B.C.R.D. | 1970 | Ford | 330 | V8 | 4 | 21,000 | Water Truck | 12,301 | 277 | 1.05 | 2904 | 3061 | 99 |
| 100 | 1-30-71 | 2T12 | B.C.R.D. | 1970 | Ford | 330 | V8 | 4 | 21,000 | Water Truck | 9,339 | 322 | 1.11 | 2986 | 2452 | 100 |

*Hi-lo means two-speed rear axle.

TABLE D-1 (Cont'd). VEHICLE DESCRIPTION AND FIRST ROUND EMISSION RESULTS
"0" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF JULY 6, 1971)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans Speeds* | GVW lbs. | Vehicle Type | Initial Mileage | Emission Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 101 | 1-30-71 | 4T23 | B.C.R.D. | 1970 | Ford | 330 | V8 | 5 | 21,000 | Water Truck | 11,705 | 407 | 5.51 | 806 | 801 | 101 |
| 102 | 2-3-71 | 7 | B.M.W. | 1970 | Ford | 360 | V8 | 4 | 6,100 | Maintenance | 12,879 | 234 | 2.00 | 1858 | 1669 | 102 |
| 103 | 2-3-71 | 34 | Southern | 1970 | GMC | 427 | V8 | 5* | 32,500 | Moving | 2,123 | 63 | 1.52 | 593 | 600 | 103 |
| 104 | 2-4-71 | 2085 | City P&R | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 10,178 | 158 | 2.02 | 2270 | 2201 | 104 |
| 105 | 2-4-71 | 2122 | City P&R | 1970 | IHC | 392 | V8 | 5 | 25,500 | Maintenance | 1,911 | 229 | 1.10 | 2346 | 2276 | 105 |
| 106 | 2-5-71 | 2119 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maintenance | 2,166 | 226 | 1.83 | 1640 | 1609 | 106 |
| 107 | 2-5-71 | 2123 | City P&R | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 2,829 | 218 | 1.85 | 2026 | 1724 | 107 |
| 108 | 2-8-71 | 2168 | City P&R | 1970 | Chevrolet | 307 | V8 | 4 | 10,000 | Maintenance | 2,612 | 214 | 2.10 | 2183 | 1930 | 108 |
| 109 | 2-8-71 | 2169 | City P&R | 1970 | Chevrolet | 307 | V8 | 4 | 10,000 | Maintenance | 641 | 255 | 1.87 | 1757 | 1553 | 109 |
| 110 | 2-9-71 | 2081 | City P&R | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 5,057 | 162 | 2.15 | 2172 | 1759 | 110 |
| 111 | 2-9-71 | 2082 | City P&R | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 6,748 | 183 | 1.61 | 2288 | 1853 | 111 |
| 112 | 2-10-71 | 2170 | City P&R | 1970 | Chevrolet | 307 | V8 | 4 | 10,000 | Maintenance | 14,584 | 615 | 1.85 | 2325 | 1955 | 112 |
| 113 | 2-11-71 | 51346 | C.P.S.B. | 1971 | IHC | 392 | V8 | 6 auto | 24,000 | Construction | 51 | 175 | 4.24 | 423 | 378 | 113 |
| 114 | 2-12-71 | 51375 | C.P.S.B. | 1971 | IHC | 392 | V8 | 6 auto | 25,500 | Construction | 52 | 206 | 2.07 | 1429 | 1296 | 114 |
| 115 | 2-12-71 | 51383 | C.P.S.B. | 1971 | IHC | 392 | V8 | 6 auto | 25,500 | Construction | 37 | 271 | 2.23 | 1346 | 1221 | 115 |
| 116 | 2-16-71 | 4364 | Elmore | 1970 | GMC | 350 | V8 | 4 | 14,000 | Moving | 15,682 | 223 | 3.62 | 1311 | 1302 | 116 |
| 117 | 2-18-71 | 16 | Elmore | 1970 | GMC | 350 | V8 | 4 | 10,000 | Moving | 15,764 | 154 | 0.47 | 1839 | 1834 | 117 |
| 118 | 2-18-71 | 043247 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Mail | 14 | 263 | 2.59 | 1421 | 1405 | 118 |
| 119 | 2-19-71 | 043144 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Mail | 15 | 252 | 2.69 | 1241 | 1227 | 119 |
| 120 | 2-19-71 | 043327 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Mail | 11 | 221 | 2.17 | 1510 | 1370 | 120 |
| 121 | 2-20-71 | 98 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 5,091 | 231 | 1.27 | 2197 | 2237 | 121 |
| 122 | 2-20-71 | 101 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 6,001 | 254 | 2.27 | 2573 | 2112 | 122 |
| 123 | 2-20-71 | 102 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 6,488 | 175 | 1.40 | 1143 | 1131 | 123 |
| 124 | 2-21-71 | 105 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 2,938 | 170 | 1.04 | 1140 | 998 | 124 |
| 125 | 3-9-71 | 043221 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 7,000 | Delivery | 333 | 282 | 2.23 | 1195 | 944 | 125 |
| 126 | 3-11-71 | 042519 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 7,000 | Delivery | 1,692 | 226 | 1.84 | 1155 | 1102 | 126 |
| 127 | 4-24-71 | 1085 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 737 | 189 | 0.65 | 2354 | 2114 | 127 |
| 128 | 4-6-71 | 1086 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 52 | 270 | 0.54 | 3068 | 2424 | 128 |
| 129 | 4-7-71 | 1088 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 227 | 317 | 1.70 | 1410 | 1340 | 129 |
| 130 | 4-12-71 | 1353 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 322 | 235 | 2.50 | 834 | 756 | 130 |
| 131 | 4-22-71 | 1347 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 340 | 213 | 2.19 | 618 | 611 | 131 |
| 132 | 4-23-71 | 1355 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 321 | 249 | 1.93 | 1358 | 1168 | 132 |
| 133 | 4-23-71 | 1340 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 320 | 216 | 2.69 | 642 | 552 | 133 |
| 134 | 4-27-71 | 1348 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 312 | 165 | 1.62 | 662 | 665 | 134 |
| 135 | 4-27-71 | 1345 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 14 | 227 | 2.19 | 806 | 791 | 135 |
| 136 | 4-27-71 | 1349 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 306 | 289 | 2.68 | 1253 | 1258 | 136 |
| 137 | 4-28-71 | 1365 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 305 | 257 | 2.65 | 843 | 899 | 137 |
| 138 | 4-28-71 | 1346 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 299 | 283 | 2.47 | 1152 | 1218 | 138 |
| 139 | 4-28-71 | 1364 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 310 | 250 | 2.66 | 1031 | 1087 | 139 |
| 140 | 4-29-71 | 1363 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 314 | 310 | 2.46 | 1083 | 1025 | 140 |
| 141 | [illegible]-24-71 | 1087 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 1,053 | 279 | 1.37 | 1971 | 1821 | 141 |
| 142 | 5-18-71 | 496 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Rental | 7,725 | 307 | 1.88 | 2148 | 2187 | 142 |
| 143 | 5-18-71 | 497 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Rental | 1,432 | 283 | 1.72 | 1520 | 1547 | 143 |
| 144 | 5-19-71 | 503 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Rental | 3,273 | 298 | 1.60 | 1784 | 1750 | 144 |
| 145 | 5-21-71 | 3 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 23 | 227 | 0.88 | 1093 | 1155 | 145 |
| 146 | 5-24-71 | 1 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 759 | 84 | 1.02 | 1248 | 1303 | 146 |
| 147 | 5-24-71 | 5 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 172 | 176 | 0.99 | 1043 | 1089 | 147 |
| 148 | 5-24-71 | 2 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 119 | 224 | 1.24 | 979 | 1022 | 148 |
| 149 | 6-11-71 | 7 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 1,441 | 308 | 1.03 | 1206 | 1240 | 149 |
| 150 | 6-11-71 | 4 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 1,504 | 307 | 1.71 | 1384 | 1423 | 150 |
| 151 | 6-14-71 | 276-15T | Southern | 1971 | Chevrolet | 427 | V8 | 5 | 32,500 | Moving Co. | 3,554 | 238 | 1.32 | 1224 | 1290 | 151 |
| 152 | 6-18-71 | 6 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 2,121 | 362 | 1.25 | 1359 | 1432 | 152 |

*Hi-lo means two-speed rear axle.

TABLE D-2. VEHICLE DESCRIPTION AND SECOND ROUND EMISSION RESULTS
"4" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF NOVEMBER 1, 1971)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans Speeds* | GVW lbs. | Vehicle Type | Test Miles | Emission Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3-8-71 | P041001 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 3,613 | 285 | 1.47 | 1655 | 1728 | 1 |
| 2 | 3-10-71 | P040999 | P.O D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 1,657 | 262 | 1.70 | 1875 | 1819 | 2 |
| 3 | 3-8-71 | P040997 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 3,469 | 249 | 1.90 | 1095 | 1071 | 3 |
| 4 | 3-10-71 | P041000 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 3,366 | 277 | 2.15 | 1489 | 1444 | 4 |
| 5 | 3-9-71 | P041002 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 2,192 | 207 | 1.40 | 948 | 881 | 5 |
| 6 | 4-5-71 | 353 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 6,250 | 174 | 0.94 | 2241 | 2079 | 6 |
| 7 | 4-5-71 | 349 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 6,317 | 220 | 3.81 | 1512 | 1473 | 7 |
| 8 | 4-6-71 | 351 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 6,203 | 215 | 2.24 | 1926 | 1812 | 8 |
| 9 | 4-6-71 | 350 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 6,292 | 249 | 2.14 | 1960 | 1885 | 9 |
| 10 | 4-7-71 | 352 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 6,352 | 207 | 2.60 | 1549 | 1458 | 10 |
| 11 | 3-25-71 | 24340 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 3,429 | 281 | 1.63 | 1313 | 1348 | 11 |
| 12 | 3-29-71 | 24341K | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 5,436 | 182 | 0.87 | 1966 | 1701 | 12 |
| 13 | 3-31-71 | 24343 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 4,465 | 251 | 1.82 | 1317 | 1246 | 13 |
| 14 | 5-26-71 | 24342 | Ryder | 1970 | IHC | 478 | V8 | 5 | 32,000 | Rental | 4,261 | 239 | 1.53 | 1450 | 1495 | 14 |
| 15 | 4-2-71 | 56 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 10,968 | 280 | 1.05 | 2238 | 1958 | 15 |
| 16 | 4-1-71 | 53 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 10,063 | 274 | 1.21 | 2212 | 2146 | 16 |
| 17 | 4-1-71 | 55 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 9,159 | 264 | 1.08 | 2469 | 2395 | 17 |
| 18 | 3-30-71 | 6 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 22,000 | School Bus | 4,874 | 272 | 1.13 | 2770 | 2620 | 18 |
| 19 | 3-31-71 | 54 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 22,000 | School Bus | 2,422 | 190 | 1.61 | 2211 | 2663 | 19 |
| 20 | 3-26-71 | 72341 | Hertz | 1970 | Ford | 300 | 6 | 3 auto | 10,000 | Stake | 2,794 | 151 | 1.04 | 1850 | 1726 | 20 |
| 21 | 3-26-71 | 72218 | Hertz | 1970 | Ford | 240 | 6 | 3 auto | 7,500 | Pickup | 5,579 | 261 | 0.54 | 2241 | 2184 | 21 |
| 22 | 6-14-71 | 5131 | C.P.S.B. | 1971 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 1,499 | 288 | 2.77 | 1137 | 1157 | 22 |
| 23 | 6-11-71 | 5132 | C.P.S.B. | 1970 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 827 | 365 | 2.27 | 1642 | 1704 | 23 |
| 24 | 9-7-71 | 5136 | C.P.S.B. | 1971 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 2,998 | 255 | 2.08 | 1493 | 1493 | 24 |
| 25 | 6-15-71 | 5141 | C.P.S.B. | 1971 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 586 | 261 | 2.38 | 879 | 924 | 25 |
| 26 | 4-9-71 | 4952 | C.P.S.B. | 1971 | IHC | 304 | V8 | 4 | 14,000 | Van | 1,345 | 303 | 1.67 | 2233 | 2139 | 26 |
| 27 | 4-12-71 | 6615 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 2,414 | 180 | 0.43 | 1541 | 1450 | 27 |
| 28 | 4-12-71 | 6616 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 2,001 | 218 | 0.48 | 1719 | 1617 | 28 |
| 29 | 4-13-71 | 4824 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 4,647 | 262 | 0.63 | 3204 | 2948 | 29 |
| 30 | 4-9-71 | 4726 | C.P.S.B. | 1970 | Chevrolet | 292 | 6 | 4 | 9,000 | Service | 4,461 | 257 | 0.88 | 2499 | 2394 | 30 |
| 31 | 4-8-71 | 4728 | C.P.S.B. | 1970 | Chevrolet | 250 | 6 | 4 | 7,500 | Service | 6,171 | 260 | 0.94 | 2661 | 2218 | 31 |
| 32 | 4-8-71 | 47290 | C.P.S.B. | 1970 | Chevrolet | 250 | 6 | 4 | 7,500 | Service | 1,976 | 284 | 1.26 | 2632 | 2445 | 32 |
| 33 | | 671 | Brown Exp | 1971 | Ford | 300 | 6 | 5 | 24,000 | Freight Van | Transferred to another city | | | | | 33 |
| 34 | | 672 | Brown Exp | 1971 | Ford | 300 | 6 | 5 | 24,000 | Freight Van | Transferred to another city | | | | | 34 |
| 35 | | 673 | Brown Exp | 1971 | Ford | 300 | 6 | 5 | 24,000 | Freight Van | Transferred to another city | | | | | 35 |
| 36 | 4-8-71 | 4727 | C.P.S.B. | 1970 | Chevrolet | 250 | 6 | 4 | 7,500 | Service | 1,569 | 285 | 1.45 | 2628 | 2299 | 36 |
| 37 | 4-8-71 | 4730 | C.P.S.B. | 1970 | Chevrolet | 250 | 6 | 4 | 7,500 | Service | 3,346 | 294 | 0.97 | 2732 | 2391 | 37 |
| 38 | 4-9-71 | 4951 | C.P.S.B. | 1970 | IHC | 304 | V8 | 4 | 14,000 | Service | 6,756 | 325 | 1.13 | 2711 | 2608 | 38 |
| 39 | 4-19-71 | 8810 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 4,587 | 189 | 0.60 | 1696 | 1703 | 39 |
| 40 | 4-15-71 | 8811 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 4,174 | 212 | 0.31 | 3347 | 3093 | 40 |
| 41 | 4-15-71 | 6855 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 7,078 | 194 | 0.48 | 2522 | 2330 | 41 |
| 42 | 4-14-71 | 6617 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Wrecker | 656 | 189 | 0.45 | 1075 | 980 | 42 |
| 43 | 4-13-71 | 6856 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 2,848 | 210 | 0.70 | 2572 | 2366 | 43 |
| 44 | 4-14-71 | 4671 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Stake | 1,623 | 231 | 0.48 | 2501 | 2280 | 44 |
| 45 | 4-16-71 | 6857 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 3,863 | 241 | 0.58 | 2007 | 1993 | 45 |
| 46 | 4-10-71 | 4950 | C.P.S.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Bucket Truck | 7,639 | 260 | 1.07 | 1947 | 1857 | 46 |
| 47 | 5-17-71 | 312 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 5,616 | 223 | 1.27 | 2155 | 2114 | 47 |
| 48 | 5-8-71 | 314 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 2,038 | 280 | 1.55 | 2384 | 2384 | 48 |
| 49 | 5-20-71 | 301 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 10,000 | Crew Truck | 2,788 | 264 | 1.45 | 2319 | 2328 | 49 |
| 50 | 5-20-71 | 302 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 10,000 | Crew Truck | 2,636 | 247 | 2.60 | 1743 | 1749 | 50 |

*Hi-lo means two-speed rear axle.

TABLE D-2 (Cont'd). VEHICLE DESCRIPTION AND SECOND ROUND EMISSION RESULTS
"4" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF NOVEMBER 1, 1971)

| Unit No | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans Speeds* | GVW lbs. | Vehicle Type | Test Miles | HC, ppm | Emission Results CO, % | Emission Results NO, ppm Obs. | Emission Results NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 | 4-15-71 | 93 | Pearl | 1970 | IHC | 304 | V8 | 3 | 7,500 | Delivery | 2,815 | 290 | 1.46 | 1987 | 1973 | 51 |
| 52 | 4-13-71 | 105 | Pearl | 1970 | GMC | 292 | 6 | 3 | 7,500 | Delivery | 6,021 | 198 | 0.56 | 3136 | 3114 | 52 |
| 53 | 4-15-71 | 106 | Pearl | 1970 | Dodge | 318 | V8 | 3 | 7,500 | Delivery | 2,867 | 341 | 1.56 | 1958 | 1876 | 53 |
| 54 | 4-12-71 | 122 | Pearl | 1970 | Ford | 300 | 6 | 3 | 7,500 | Delivery | 5,260 | 215 | 0.34 | 3488 | 3314 | 54 |
| 55 | 5-8-71 | 311 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Crew Truck | 2,575 | 305 | 1.41 | 1917 | 1925 | 55 |
| 56 | 5-17-71 | 313 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 4,028 | 206 | 1.30 | 1257 | 1233 | 56 |
| 57 | 5-21-71 | 315 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 2,443 | 295 | 1.41 | 2517 | 2683 | 57 |
| 58 | 5-7-71 | 316 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 978 | 240 | 1.30 | 2332 | 2451 | 58 |
| 59 | 5-8-71 | 317 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 2,270 | 233 | 1.22 | 2067 | 2075 | 59 |
| 60 | 5-6-71 | 253 | C.W.B. | 1970 | Chevrolet | 307 | V8 | 4 | 7,500 | Service | 1,311 | 245 | 3.39 | 1539 | 1617 | 60 |
| 61 | 5-6-71 | 254 | C.W.B. | 1970 | Chevrolet | 307 | V8 | 4 | 7,500 | Service | 3,833 | 192 | 2.56 | 1199 | 1260 | 61 |
| 62 | 5-18-71 | 391 | C.W.B. | 1970 | Chevrolet | 366 | V8 | 5 | 32,000 | Crane | 534 | 186 | 0.76 | 1084 | 1146 | 62 |
| 63 | 5-19-71 | 392 | C.W.B. | 1970 | Chevrolet | 366 | V8 | 5 | 32,000 | Crane | 195 | 139 | 1.11 | 483 | 483 | 63 |
| 64 | 5-26-71 | 582 | Red Arrow | 1970 | Dodge | 318 | V8 | 4 | 24,000 | Freight | 7,679 | 251 | 1.76 | 2071 | 2183 | 64 |
| 65 | 5-25-71 | 581 | Red Arrow | 1970 | Dodge | 318 | V8 | 4 | 24,000 | Freight | 5,170 | 316 | 2.03 | 2457 | 2550 | 65 |
| 66 | 4-5-71 | 251 | C.W.B. | 1970 | Dodge | 318 | V8 | 3 auto | 7,500 | Meter | 2,489 | 236 | 1.92 | 1596 | 1677 | 66 |
| 67 | 4-5-71 | 252 | C.W.B. | 1970 | Dodge | 318 | V8 | 3 auto | 7,500 | Service | 2,216 | 235 | 1.97 | 1430 | 1503 | 67 |
| 68 | 5-18-71 | 360 | C.W.B. | 1970 | Ford | 361 | V8 | 5 | 25,500 | Dump | 5,198 | 293 | 2.12 | 1651 | 1745 | 68 |
| 69 | 6-10-71 | 5133 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 856 | 304 | 1.92 | 1393 | 1446 | 69 |
| 70 | 6-10-71 | 5140 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 2,331 | 292 | 2.16 | 1346 | 1370 | 70 |
| 71 | 6-16-71 | 5097 | C.P.S.B. | 1971 | IHC | 345 | V8 | 5 | 25,000 | Digger | 4,596 | 269 | 1.01 | 2227 | 2227 | 71 |
| 72 | 6-15-71 | 5106 | C.P.S.B. | 1971 | IHC | 345 | V8 | 5 | 25,000 | Digger | 4,905 | 258 | 0.81 | 2270 | 2386 | 72 |
| 73 | 6-14-71 | 5130 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 2,619 | 375 | 3.02 | 1061 | 1080 | 73 |
| 74 | 6-10-71 | 5135 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 1,722 | 309 | 1.71 | 1629 | 1691 | 74 |
| 75 | 6-5-71 | M-78 | State Hosp | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 1,158 | 319 | 1.95 | 2117 | 2161 | 75 |
| 76 | 6-6-71 | M-80 | State Hosp | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 713 | 260 | 1.88 | 2221 | 2283 | 76 |
| 77 | 6-6-71 | M-98 | State Hosp | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 889 | 271 | 1.53 | 2404 | 2454 | 77 |
| 78 | 6-5-71 | SH-680 | State Hosp | 1970 | Ford | 302 | V8 | 3 auto | 6,800 | Van | 1,808 | 236 | 1.03 | 2001 | 2009 | 78 |
| 79 | 6-5-71 | SH-699 | State Hosp | 1970 | GMC | 401 | V6 | 5 | 27,000 | Bus | 3,378 | 329 | 4.75 | 855 | 858 | 79 |
| 80 | 5-26-71 | 1029 | Lone Star | 1970 | Chevrolet | 307 | V8 | 4 | 6,600 | Delivery | 10,511 | 284 | 2.98 | 2336 | 2504 | 80 |
| 81 | 5-27-71 | 134 | Herder | 1970 | Ford | 300 | 6 | 5 | 21,000 | Freight | 7,079 | 214 | 0.40 | 1623 | 1673 | 81 |
| 82 | 5-27-71 | 135 | Herder | 1970 | Ford | 300 | 6 | 5 | 21,000 | Freight | 4,736 | 150 | 0.65 | 2521 | 2599 | 82 |
| 83 | 6-1-71 | 239 | Herder | 1970 | Ford | 361 | V8 | 5 | 22,000 | Freight | 4,690 | 331 | 1.41 | 1861 | 1956 | 83 |
| 84 | 6-1-71 | 240 | Herder | 1970 | Ford | 361 | V8 | 5 | 22,000 | Freight | 9,320 | 377 | 1.93 | 2088 | 2194 | 84 |
| 85 | | 250 | C.W.B. | 1970 | Chevrolet | 307 | V8 | 2 auto | 7,500 | Service | Wrecked | | | | | 85 |
| 86 | 6-6-71 | L-41 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 10,000 | Laundry | 1,007 | 244 | 1.88 | 2211 | 2273 | 86 |
| 87 | 6-5-71 | M-77 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 10,000 | Grounds | 910 | 237 | 1.73 | 2414 | 2424 | 87 |
| 88 | 6-6-71 | M-87 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 7,500 | Service | 2,337 | 280 | 1.61 | 2249 | 2312 | 88 |
| 89 | 6-6-71 | M-90 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 10,000 | Maintenance | 1,599 | 255 | 2.40 | 2479 | 2548 | 89 |
| 90 | 6-5-71 | M-95 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 10,000 | Grounds | 790 | 230 | 1.70 | 2367 | 2376 | 90 |
| 91 | 6-3-71 | 2179 | City P&R | 1970 | IHC | 345 | V8 | 4 | 19,000 | Water Truck | 255 | 282 | 1.08 | 1897 | 1999 | 91 |
| 92 | 6-2-71 | 2120 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maintenance | 2,104 | 280 | 1.73 | 1850 | 1850 | 92 |
| 93 | 6-7-71 | 27 | B.M.W. | 1970 | Ford | 360 | V8 | 4 | 7,500 | Repair | 5,482 | 298 | 2.23 | 1680 | 1648 | 93 |
| 94 | 6-4-71 | 2073 | City P&R | 1970 | Chevrolet | 292 | 6 | 3 auto | 14,000 | Maintenance | 940 | 208 | 0.84 | 2579 | 2579 | 94 |
| 95 | 6-4-71 | 2121 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maintenance | 969 | 304 | 2.55 | 1451 | 1481 | 95 |
| 96 | 6-12-71 | 4T1 | B.C.R.D. | 1970 | Ford | 240 | 6 | 3 | 7,500 | Maintenance | 5,392 | 327 | 1.13 | 1703 | 1734 | 96 |
| 97 | 6-11-71 | 4T16 | B.C.R.D. | 1970 | Ford | 240 | 6 | 3 | 7,500 | Welder | 3,849 | 344 | 1.54 | 1865 | 1899 | 97 |
| 98 | 6-11-71 | 1T22 | B.C.R.D. | 1970 | Ford | 330 | V8 | 5 | 21,000 | Water Truck | 8,182 | 300 | 0.52 | 3009 | 3063 | 98 |
| 99 | 6-8-71 | 2T9 | B.C.R.D. | 1970 | Ford | 330 | V8 | 4 | 21,000 | Water Truck | 4,932 | 338 | 0.81 | 3331 | 3268 | 99 |
| 100 | 6-8-71 | 2T12 | B.C.R.D. | 1970 | Ford | 330 | V8 | 4 | 21,000 | Water Truck | 3,572 | 349 | 0.91 | 2738 | 2686 | 100 |

*Hi-lo means two-speed rear axle.

TABLE D-2 (Cont'd). VEHICLE DESCRIPTION AND SECOND ROUND EMISSION RESULTS
"4" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF NOVEMBER 1, 1971)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans Speeds* | GVW lbs | Vehicle Type | Test Miles | Emission Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 101 | 6-11-71 | 4T23 | B.C.R.D. | 1970 | Ford | 330 | V8 | 5 | 21,000 | Water Truck | 9,154 | 359 | 1.22 | 2734 | 2783 | 101 |
| 102 | 6-7-71 | 7 | B.M.W. | 1970 | Ford | 360 | V8 | 4 | 7,500 | Maintenance | 4,821 | 292 | 2.19 | 2172 | 2131 | 102 |
| 103 | 6-16-71 | 34 | Southern | 1970 | GMC | 427 | V8 | 5 | 32,500 | Moving | 32,371 | 236 | 2.18 | 1389 | 1389 | 103 |
| 104 | 6-4-71 | 2085 | City P&R | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 4,092 | 212 | 2.36 | 1847 | 1886 | 104 |
| 105 | 6-4-71 | 2122 | City P&R | 1970 | IHC | 392 | V8 | 5 | 25,500 | Maintenance | 403 | 312 | 1.88 | 2173 | 2173 | 105 |
| 106 | 6-2-71 | 2119 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maintenance | 958 | 274 | 2.29 | 1597 | 1567 | 106 |
| 107 | 6-3-71 | 2123 | City P&R | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 1,375 | 272 | 1.99 | 1922 | 2001 | 107 |
| 108 | 6-3-71 | 2168 | City P&R | 1970 | Chevrolet | 307 | V8 | 4 | 14,000 | Maintenance | 1,190 | 241 | 2.55 | 1776 | 1776 | 108 |
| 109 | 6-3-71 | 2169 | City P&R | 1970 | Chevrolet | 307 | V8 | 4 | 14,000 | Maintenance | 296 | 290 | 2.32 | 1653 | 1653 | 109 |
| 110 | 6-1-71 | 2081 | City P&R | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 2,196 | 256 | 2.88 | 1811 | 1903 | 110 |
| 111 | 6-1-71 | 2082 | City P&R | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 1,909 | 246 | 2.41 | 1797 | 1889 | 111 |
| 112 | 6-4-71 | 2170 | City P&R | 1970 | Chevrolet | 307 | V8 | 4 | 14,000 | Maintenance | 4,297 | 237 | 2.42 | 2168 | 2168 | 112 |
| 113 | 6-11-71 | 51346 | C.P.S.B. | 1971 | IHC | 392 | V8 | 6 auto | 24,000 | Construction | 478 | 329 | 3.66 | 920 | 955 | 113 |
| 114 | 6-9-71 | 51375 | C.P.S.B. | 1971 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 952 | 322 | 2.11 | 1282 | 1282 | 114 |
| 115 | 6-10-71 | 51383 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 975 | 264 | 2.22 | 1332 | 1356 | 115 |
| 116 | 6-3-71 | 4364 | Elmore | 1970 | GMC | 350 | V8 | 4 | 14,000 | Moving | 583 | 208 | 1.40 | 1807 | 1845 | 116 |
| 117 | 6-3-71 | 16 | Elmore | 1970 | GMC | 350 | V8 | 4 | 10,000 | Moving | 1,040 | 197 | 0.65 | 1900 | 1959 | 117 |
| 118 | 6-9-71 | 043247 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Mail | 2,076 | 338 | 1.92 | 1804 | 1770 | 118 |
| 119 | 6-9-71 | 043144 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Mail | 3,016 | 321 | 2.08 | 1475 | 1446 | 119 |
| 120 | 6-9-71 | 043327 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Mail | 1,885 | 318 | 1.59 | 1616 | 1585 | 120 |
| 121 | 6-20-71 | 98 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 4,672 | 292 | 1.52 | 2194 | 2203 | 121 |
| 122 | 6-20-71 | 101 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 5,392 | 317 | 1.99 | 2445 | 2496 | 122 |
| 123 | 6-20-71 | 102 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 6,689 | 232 | 1.61 | 1221 | 1226 | 123 |
| 124 | 6-20-71 | 105 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 3,386 | 270 | 1.04 | 2006 | 2048 | 124 |
| 125 | 6-8-71 | 043221 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Delivery | 2,031 | 322 | 2.05 | 1252 | 1316 | 125 |
| 126 | 6-8-71 | 042519 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Delivery | 2,085 | 275 | 1.98 | 1108 | 1172 | 126 |
| 127 | 8-7-71 | 1085 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 2,173 | 202 | 0.77 | 2467 | 2576 | 127 |
| 128 | 8-7-71 | 1086 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 3,798 | 235 | 1.09 | 2638 | 2693 | 128 |
| 129 | 8-21-71 | 1088 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 3,906 | 314 | 2.74 | 1947 | 1947 | 129 |
| 130 | 8-9-71 | 1353 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 4,768 | 253 | 2.07 | 1904 | 1952 | 130 |
| 131 | 8-9-71 | 1347 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 4,716 | 245 | 1.88 | 1393 | 1422 | 131 |
| 132 | 8-18-71 | 1355 | C.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 3,324 | 187 | 3.29 | 1267 | 1290 | 132 |
| 133 | 8-10-71 | 1340 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 4,290 | 216 | 3.09 | 738 | 759 | 133 |
| 134 | 8-13-71 | 1348 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 3,348 | 229 | 6.56 | 434 | 429 | 134 |
| 135 | 9-9-71 | 1345 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 4,108 | 225 | 2.40 | 1251 | 1274 | 135 |
| 136 | 8-12-71 | 1349 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 2,447 | 290 | 2.83 | 1641 | 1730 | 136 |
| 137 | 9-21-71 | 1365 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 5,070 | 288 | 2.94 | 1578 | 1567 | 137 |
| 138 | 8-20-71 | 1346 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 3,812 | 288 | 2.79 | 1980 | 2067 | 138 |
| 139 | 8-17-71 | 1364 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 2,815 | 284 | 2.25 | 1704 | 1692 | 139 |
| 140 | 8-20-71 | 1363 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 3,366 | 258 | 2.10 | 2090 | 2105 | 140 |
| 141 | 8-21-71 | 1087 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 4,147 | 270 | 1.76 | 2094 | 2071 | 141 |
| 142 | 9-23-71 | 496 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Rental | 15,457 | 399 | 1.72 | 2289 | 2346 | 142 |
| 143 | 9-7-71 | 497 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Rental | 1,161 | 243 | 1.53 | 1312 | 1336 | 143 |
| 144 | 9-15-71 | 503 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Rental | 7,791 | 252 | 1.68 | 1766 | 1803 | 144 |
| 145 | 9-24-71 | 3 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 7,750 | 212 | 1.09 | 1511 | 1553 | 145 |
| 146 | 9-13-71 | 1 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 7,267 | 253 | 2.14 | 1435 | 1489 | 146 |
| 147 | 10-22-71 | 5 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 9,473 | 196 | 2.03 | 1130 | 1101 | 147 |
| 148 | 9-13-71 | 2 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 7,044 | 359 | 2.55 | 1094 | 1136 | 148 |
| 149 | 9-24-71 | 7 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 9,203 | 272 | 2.10 | 996 | 989 | 149 |
| 150 | 10-25-71 | 4 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 11,016 | 208 | 1.46 | 1287 | 1319 | 150 |
| 151 | 10-25-71 | 15T | Southern | 1971 | Chevrolet | 427 | V8 | 5 | 32,500 | Moving Co. | 14,620 | 242 | 2.59 | 927 | 921 | 151 |
| 152 | 10-22-71 | 6 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 10,383 | 420 | 1.84 | 1729 | 1677 | 152 |

*Hi-lo means two-speed rear axle.

## TABLE D-3. VEHICLE DESCRIPTION AND THIRD ROUND EMISSION RESULTS "8" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF FEBRUARY 1, 1972)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans Speeds* | GVW lbs | Vehicle Type | Test Miles | Emission Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6-22-71 | PO41001 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 6,565 | 378 | 1.58 | 1689 | 1753 | 1 |
| 2 | 6-21-71 | PO40999 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 3,867 | 325 | 1.85 | 1470 | 1558 | 2 |
| 3 | 6-14-71 | PO40997 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 6,305 | 326 | 1.77 | 1312 | 1362 | 3 |
| 4 | 6-21-71 | PO41000 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 6,661 | 347 | 2.24 | 1508 | 1598 | 4 |
| 5 | 6-23-71 | PO41002 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Van | 4,047 | 269 | 1.39 | 805 | 799 | 5 |
| 6 | 8-20-71 | 353 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 12,906 | 306 | 1.67 | 2515 | 2543 | 6 |
| 7 | 8-18-71 | 349 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 12,217 | 194 | 3.57 | 1538 | 1544 | 7 |
| 8 | 8-19-71 | 351 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 12,599 | 235 | 2.73 | 2098 | 2098 | 8 |
| 9 | 8-19-71 | 350 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 12,636 | 140 | 2.57 | 1960 | 1960 | 9 |
| 10 | 8-18-71 | 352 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 12,250 | 151 | 4.23 | 717 | 720 | 10 |
| 11 | 7-25-71 | 24340 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 7,386 | 294 | 1.68 | 1325 | 1353 | 11 |
| 12 | 8-12-71 | 24341K | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 15,087 | 231 | 1.31 | 1838 | 1937 | 12 |
| 13 | 8-12-71 | 24343 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 9,946 | 259 | 2.78 | 1613 | 1700 | 13 |
| 14 | 8-12-71 | 24342 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 8,501 | 241 | 1.82 | 1404 | 1480 | 14 |
| 15 | 8-1-71 | 56 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 16,628 | 253 | 1.34 | 2116 | 2256 | 15 |
| 16 | 8-3-71 | 53 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 15,367 | 261 | 1.18 | 2338 | 2492 | 16 |
| 17 | 6-28-71 | 55 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 13,734 | 285 | 1.18 | 1939 | 2106 | 17 |
| 18 | 6-28-71 | 6 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 22,000 | School Bus | 7,821 | 339 | 0.92 | 2461 | 2616 | 18 |
| 19 | 8-3-71 | 54 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 22,000 | School Bus | 7,550 | 193 | 1.52 | 2348 | 2517 | 19 |
| 20 | 8-11-71 | 72341 | Hertz | 1970 | Ford | 300 | 6 | 3 auto | 10,000 | Stake | 6,039 | 184 | 0.94 | 2010 | 1996 | 20 |
| 21 | 8-24-71 | 72218 | Hertz | 1970 | Ford | 240 | 6 | 3 auto | 7,500 | Pick-up | 13,398 | 274 | 0.85 | 2258 | 2242 | 21 |
| 22 | 9-13-71 | 5131 | C.P.S.B. | 1971 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 5,171 | 213 | 2.94 | 1103 | 1061 | 22 |
| 23 | 9-20-71 | 5132 | C.P.S.B. | 1970 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 3,471 | 315 | 2.26 | 1871 | 1835 | 23 |
| 24 | 1-20-72 | 5136 | C.P.S.B. | 1971 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 7,414 | 261 | 1.57 | 2230 | 1875 | 24 |
| 25 | 9-21-71 | 5141 | C.P.S.B. | 1971 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 1,461 | 185 | 2.00 | 933 | 933 | 25 |
| 26 | 9-7-71 | 4952 | C.P.S.B. | 1971 | IHC | 304 | V8 | 4 | 14,000 | Van | 6,364 | 225 | 0.86 | 2353 | 2353 | 26 |
| 27 | 8-23-71 | 6615 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 4,300 | 120 | 0.56 | 1140 | 1168 | 27 |
| 28 | 8-30-71 | 6616 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 5,550 | 173 | 0.45 | 2006 | 1954 | 28 |
| 29 | 8-26-71 | 4824 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 9,466 | 169 | 0.69 | 3180 | 3158 | 29 |
| 30 | 9-1-71 | 4726 | C.P.S.B. | 1970 | Chevrolet | 292 | 6 | 4 | 9,000 | Service | 10,885 | 212 | 0.93 | 2452 | 2435 | 30 |
| 31 | 9-2-71 | 4728 | C.P.S.B. | 1970 | Chevrolet | 250 | 6 | 4 | 7,500 | Service | 14,994 | 222 | 1.09 | 2483 | 2456 | 31 |
| 32 | 9-2-71 | 47290 | C.P.S.B. | 1970 | Chevrolet | 250 | 6 | 4 | 7,500 | Service | 5,450 | 239 | 1.55 | 2328 | 2302 | 32 |
| 33 | 12-10-70 | 671 | Brown Exp | 1971 | Ford | 300 | 6 | 5 | 24,000 | Freight | Transferred to another city | | | | | 33 |
| 34 | 12-10-70 | 672 | Brown Exp | 1971 | Ford | 300 | 6 | 5 | 24,000 | Freight | " " " " | | | | | 34 |
| 35 | 12-10-70 | 673 | Brown Exp | 1971 | Ford | 300 | 6 | 5 | 24,000 | Freight | | | | | | 35 |
| 36 | 9-2-71 | 4727 | C.P.S.B. | 1970 | Chevrolet | 250 | 6 | 4 | 7,500 | Service | 4,209 | 293 | 1.84 | 2295 | 2279 | 36 |
| 37 | 9-1-71 | 4730 | C.P.S.B. | 1970 | Chevrolet | 250 | 6 | 4 | 7,500 | Service | 8,123 | 284 | 1.41 | 2492 | 2475 | 37 |
| 38 | 8-27-71 | 4951 | C.P.S.B. | 1970 | IHC | 304 | V8 | 4 | 14,000 | Service | 14,835 | 273 | 1.14 | 2423 | 2491 | 38 |
| 39 | 9-3-71 | 6810 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 10,152 | 251 | 3.52 | 1457 | 1457 | 39 |
| 40 | 8-25-71 | 8811 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 9,323 | 102 | 0.19 | 3243 | 3159 | 40 |
| 41 | 9-8-71 | 6855 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 13,452 | 158 | 0.47 | 1976 | 1925 | 41 |
| 42 | 8-23-71 | 6617 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Wrecker | 2,122 | 181 | 0.83 | 2382 | 2442 | 42 |
| 43 | 8-25-71 | 6856 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 6,698 | 184 | 0.50 | 3407 | 3342 | 43 |
| 44 | 9-3-71 | 4671 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Stake | 4,812 | 239 | 0.46 | 2355 | 2338 | 44 |
| 45 | 8-30-71 | 6857 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 9,041 | 160 | 0.76 | 2309 | 2249 | 45 |
| 46 | 8-26-71 | 4950 | C.P.S.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Bucket Truck | 15,597 | 198 | 1.75 | 2113 | 2098 | 46 |
| 47 | 10-10-71 | 312 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 12,041 | 219 | 0.88 | 2884 | 2509 | 47 |
| 48 | 9-25-71 | 314 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 4,589 | 267 | 1.47 | 2618 | 2599 | 48 |
| 49 | 10-19-71 | 301 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 10,000 | Crew Truck | 6,795 | 232 | 1.50 | 2278 | 2303 | 49 |
| 50 | 10-19-71 | 302 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 10,000 | Crew Truck | 5,855 | 225 | 2.14 | 1771 | 1790 | 50 |

*Hi-Lo means two-speed rear axle.

TABLE D-3 (Cont'd). VEHICLE DESCRIPTION AND THIRD ROUND EMISSION RESULTS
"8" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF FEBRUARY 1, 1972)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans Speeds* | GVW lbs | Vehicle Type | Test Miles | Emission Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 | 8-5-71 | 93 | Pearl | 1970 | IHC | 304 | V8 | 3 | 7,500 | Delivery | 7,321 | 241 | 1.73 | 2236 | 2384 | 51 |
| 52 | 8-4-71 | 105 | Pearl | 1970 | GMC | 292 | 6 | 3 | 7,500 | Delivery | 12,412 | 219 | 0.85 | 3445 | 3672 | 52 |
| 53 | 8-5-71 | 106 | Pearl | 1970 | Dodge | 318 | V8 | 3 | 7,500 | Delivery | 6,520 | 292 | 1.44 | 2200 | 2345 | 53 |
| 54 | 8-4-71 | 122 | Pearl | 1970 | Ford | 300 | 6 | 3 | 7,500 | Delivery | 12,276 | 218 | 0.47 | 3811 | 3879 | 54 |
| 55 | 9-25-71 | 311 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 4,406 | 243 | 1.36 | 2592 | 2665 | 55 |
| 56 | 9-25-71 | 313 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 7,311 | 249 | 1.31 | 2793 | 2843 | 56 |
| 57 | 10-9-71 | 315 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 4,611 | 270 | 1.58 | 2097 | 2204 | 57 |
| 58 | 9-25-71 | 316 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 3,024 | 199 | 1.14 | 1835 | 1886 | 58 |
| 59 | 10-9-71 | 317 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 5,090 | 247 | 1.17 | 2598 | 2730 | 59 |
| 60 | 10-3-71 | 253 | C.W.B. | 1970 | Chevrolet | 307 | V8 | 4 | 7,500 | Service | 2,547 | 185 | 3.03 | 1821 | 1828 | 60 |
| 61 | 10-3-71 | 254 | C.W.B. | 1970 | Chevrolet | 307 | V8 | 4 | 7,500 | Service | 8,677 | 323 | 3.10 | 1737 | 1744 | 61 |
| 62 | 10-10-71 | 391 | C.W.B. | 1970 | Chevrolet | 366 | V8 | 5 | 32,000 | Crane | 1,440 | 115 | 1.18 | 1121 | 985 | 62 |
| 63 | 10-9-71 | 392 | C.W.B. | 1970 | Chevrolet | 366 | V8 | 5 | 32,000 | Crane | 991 | 137 | 1.81 | 775 | 784 | 63 |
| 64 | 9-21-71 | 582 | Red Arrow | 1970 | Dodge | 318 | V8 | 4 | 24,000 | Freight | 13,312 | 275 | 1.67 | 2270 | 2227 | 64 |
| 65 | 9-21-71 | 581 | Red Arrow | 1970 | Dodge | 318 | V8 | 4 | 24,000 | Freight | 9,817 | 298 | 1.91 | 2632 | 2521 | 65 |
| 66 | 10-3-71 | 251 | C.W.B. | 1970 | Dodge | 318 | V8 | 3 auto | 7,500 | Meter | 6,457 | 229 | 1.85 | 1644 | 1626 | 66 |
| 67 | 10-3-71 | 252 | C.W.B. | 1970 | Dodge | 318 | V8 | 3 auto | 7,500 | Service | 4,979 | 221 | 1.73 | 1522 | 1511 | 67 |
| 68 | 10-16-71 | 360 | C.W.B. | 1970 | Ford | 361 | V8 | 5 | 25,500 | Dump | 11,070 | 305 | 2.38 | 1786 | 1859 | 68 |
| 69 | 9-13-71 | 5133 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 3,046 | 213 | 1.66 | 1403 | 1350 | 69 |
| 70 | 9-9-71 | 5140 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 7,902 | 243 | 1.51 | 1625 | 1583 | 70 |
| 71 | 9-9-71 | 5097 | C.P.S.B. | 1971 | IHC | 345 | V8 | 5 | 25,000 | Digger | 7,163 | 258 | 1.41 | 2109 | 2066 | 71 |
| 72 | 9-22-71 | 5106 | C.P.S.B. | 1971 | IHC | 345 | V8 | 5 | 25,000 | Digger | 7,439 | 199 | 1.07 | 2252 | 2209 | 72 |
| 73 | 9-8-71 | 5130 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 7,267 | 287 | 2.66 | 1322 | 1288 | 73 |
| 74 | 9-21-71 | 5135 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6 auto | 25,500 | Line | 4,859 | 274 | 2.49 | 2008 | 2008 | 74 |
| 75 | 10-16-71 | M-78 | State Hosp | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 2,927 | 245 | 2.19 | 2337 | 2321 | 75 |
| 76 | 10-16-71 | M-80 | State Hosp | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 1,445 | 218 | 2.08 | 2021 | 2029 | 76 |
| 77 | 10-16-71 | M-98 | State Hosp | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 1,903 | 235 | 1.84 | 2493 | 2578 | 77 |
| 78 | 10-23-71 | SH-680 | State Hosp | 1970 | Ford | 302 | V8 | 3 auto | 6,800 | Van | 2,982 | 214 | 1.67 | 1956 | 1956 | 78 |
| 79 | 10-23-71 | SH-699 | State Hosp | 1970 | GMC | 401 | V8 | 5 | 27,000 | Bus | 6,458 | 312 | 5.07 | 899 | 899 | 79 |
| 80 | 10-21-71 | 1029 | Lone Star | 1970 | Chevrolet | 307 | V8 | 4 | 6,600 | Delivery | 23,078 | 289 | 2.89 | 1642 | 1532 | 80 |
| 81 | 9-23-71 | 134 | Herder | 1970 | Ford | 300 | 6 | 5 | 21,000 | Freight | 14,432 | 210 | 4.55 | 1291 | 1335 | 81 |
| 82 | 9-23-71 | 135 | Herder | 1970 | Ford | 300 | 6 | 5 | 21,000 | Freight | 9,212 | 151 | 0.95 | 1539 | 1591 | 82 |
| 83 | 9-28-71 | 239 | Herder | 1970 | Ford | 361 | V8 | 5 | 22,000 | Freight | 8,080 | 312 | 1.54 | 1929 | 1915 | 83 |
| 84 | 9-27-71 | 240 | Herder | 1970 | Ford | 361 | V8 | 5 | 22,000 | Freight | 14,979 | 311 | 2.41 | 1903 | 1890 | 84 |
| 85 | 1-12-71 | 250 | C.W.B. | 1970 | Chevrolet | 307 | V8 | 2 auto | 7,500 | Service | This truck was wrecked May 25, 1971 | | | | | 85 |
| 86 | 10-17-71 | L-41 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 10,000 | Laundry | 2,198 | 199 | 1.96 | 1912 | 1946 | 86 |
| 87 | 10-16-71 | M-77 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 10,000 | Grounds | 2,330 | 182 | 1.91 | 2441 | 2509 | 87 |
| 88 | 10-17-71 | M-87 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 7,500 | Service | 4,652 | 184 | 1.61 | 2341 | 2383 | 88 |
| 89 | 10-24-71 | SH-M90 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 10,000 | Maintenance | 3,500 | 194 | 1.94 | 2755 | 2628 | 89 |
| 90 | 10-16-71 | SH-M95 | State Hosp | 1970 | Dodge | 225 | 6 | 3 auto | 10,000 | Grounds | 1,918 | 185 | 1.60 | 2309 | 2373 | 90 |
| 91 | 10-4-71 | 2179 | City P&R | 1970 | IHC | 345 | V8 | 4 | 19,000 | Water Truck | 916 | 256 | 0.99 | 2192 | 2216 | 91 |
| 92 | 10-13-71 | 2120 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maintenance | 4,197 | 227 | 1.76 | 1913 | 1934 | 92 |
| 93 | 9-22-71 | 27 | B.M.W. | 1970 | Ford | 360 | V8 | 4 | 7,500 | Repair | 9,695 | 163 | 2.50 | 1712 | 1679 | 93 |
| 94 | 10-12-71 | 2073 | City P&R | 1970 | Chevrolet | 292 | 6 | 3 auto | 14,000 | Maintenance | 1,672 | 170 | 0.84 | 2719 | 2730 | 94 |
| 95 | 10-12-71 | 2121 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maintenance | 1,715 | 258 | 2.37 | 1521 | 1504 | 95 |
| 96 | 10-30-71 | 4T-1 | B.C.R.D. | 1970 | Ford | 240 | 6 | 3 | 7,500 | Maintenance | 10,882 | 289 | 2.70 | 1181 | 1136 | 96 |
| 97 | 10-30-71 | 4T-16 | B.C.R.D. | 1970 | Ford | 240 | 6 | 3 | 7,500 | Welder | 8,498 | 281 | 3.41 | 1106 | 1110 | 97 |
| 98 | 10-29-71 | 1T22 | B.C.R.D. | 1970 | Ford | 330 | V8 | 5 | 21,000 | Water Truck | 16,738 | 278 | 0.83 | 2952 | 2964 | 98 |
| 99 | 11-17-71 | 2T9 | B.C.R.D. | 1970 | Ford | 330 | V8 | 4 | 21,000 | Water Truck | 11,214 | 298 | 0.88 | 2973 | 3006 | 99 |
| 100 | 11-17-71 | 2T12 | B.C.R.D. | 1970 | Ford | 330 | V8 | 4 | 21,000 | Water Truck | 10,961 | 406 | 1.30 | 2518 | 2545 | 100 |

*Hi-Lo means two-speed rear axle.

TABLE D-3 (Cont'd). VEHICLE DESCRIPTION AND THIRD ROUND EMISSION RESULTS
"8" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF FEBRUARY 1, 1972)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans Speeds* | GVW lbs | Vehicle Type | Test Miles | Emission Results | | | | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | HC, ppm | CO, % | NO, ppm | | |
| | | | | | | | | | | | | | | Obs. | Corr. | |
| 101 | 10-29-71 | 4T23 | B.C.R.D. | 1970 | Ford | 330 | V8 | 5 | 21,000 | Water Truck | 18,295 | 367 | 3.05 | 1883 | 1827 | 101 |
| 102 | 10-14-71 | 7 | B.M.W. | 1970 | Ford | 360 | V8 | 4 | 6,100 | Maintenance | 10,289 | 274 | 2.33 | 1867 | 1818 | 102 |
| 103 | 10-25-71 | 34 | Southern | 1970 | GMC | 427 | V8 | 5 | 32,500 | Moving | 26,526 | 245 | 3.68 | 627 | 625 | 103 |
| 104 | 10-13-71 | 2085 | City P&R | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 7,815 | 204 | 2.15 | 1694 | 1712 | 104 |
| 105 | 10-4-71 | 2122 | City P&R | 1970 | IHC | 392 | V8 | 5 | 25,500 | Maintenance | 1,864 | 247 | 1.38 | 2117 | 2140 | 105 |
| 106 | 10-3-71 | 2119 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maintenance | 2,844 | 232 | 2.25 | 1794 | 1780 | 106 |
| 107 | 10-2-71 | 2123 | City P&R | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 3,026 | 210 | 1.97 | 1799 | 1849 | 107 |
| 108 | 10-5-71 | 2168 | City P&R | 1970 | Chevrolet | 307 | V8 | 4 | 10,000 | Maintenance | 3,882 | 212 | 2.79 | 1815 | 1889 | 108 |
| 109 | 10-5-71 | 2169 | City P&R | 1970 | Chevrolet | 307 | V8 | 4 | 10,000 | Maintenance | 393 | 247 | 2.47 | 1775 | 1912 | 109 |
| 110 | 10-11-71 | 2081 | City P&R | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 3,970 | 426 | 2.30 | 2425 | 2333 | 110 |
| 111 | 9-30-71 | 2082 | City P&R | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 3,937 | 228 | 2.59 | 1889 | 1923 | 111 |
| 112 | 10-15-71 | 2170 | City P&R | 1970 | Chevrolet | 307 | V8 | 4 | 10,000 | Maintenance | 9,848 | 207 | 2.32 | 2064 | 2064 | 112 |
| 113 | 10-18-71 | 5134 | C.P.S.B. | 1971 | IHC | 392 | V8 | 6 auto | 24,000 | Construction | 3,021 | 340 | 4.06 | 869 | 862 | 113 |
| 114 | 10-26-71 | 51375 | C.P.S.B. | 1971 | IHC | 392 | V8 | 6 auto | 25,500 | Construction | 6,848 | 210 | 1.63 | 1587 | 1615 | 114 |
| 115 | 10-18-71 | 51383 | C.P.S.B. | 1971 | IHC | 392 | V8 | 6 auto | 25,500 | Construction | 6,785 | 262 | 2.05 | 1644 | 1690 | 115 |
| 116 | 10-21-71 | 4364(17) | Elmore | 1970 | GMC | 350 | V8 | 4 | 14,000 | Moving | 2,497 | 215 | 1.83 | 2080 | 1914 | 116 |
| 117 | 10-22-71 | 16 | Elmore | 1970 | GMC | 350 | V8 | 4 | 10,000 | Moving | 3,546 | 139 | 1.07 | 1896 | 1816 | 117 |
| 118 | 11-24-71 | 043247 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Mail | 5,687 | 257 | 1.67 | 1871 | 1637 | 118 |
| 119 | 11-24-71 | 043144 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Mail | 7,411 | 295 | 1.99 | 1620 | 1417 | 119 |
| 120 | 11-26-71 | 043327 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Mail | 4,275 | 269 | 1.58 | 1753 | 1492 | 120 |
| 121 | 10-23-71 | 98 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 9,932 | 181 | 0.80 | 2528 | 2462 | 121 |
| 122 | 10-23-71 | 101 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 10,802 | 194 | 1.91 | 2357 | 2218 | 122 |
| 123 | 10-24-71 | 102 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 13,498 | 95 | 1.40 | 1280 | 1226 | 123 |
| 124 | 10-24-71 | 105 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 6,574 | 173 | 0.63 | 2502 | 2354 | 124 |
| 125 | 12-14-71 | 043221 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Delivery | 6,497 | 326 | 2.14 | 2112 | 1734 | 125 |
| 126 | 11-26-71 | 042519 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Delivery | 4,872 | 296 | 1.70 | 1745 | 1485 | 126 |
| 127 | 12-04-71 | 1085 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 4,641 | 190 | 0.72 | 2655 | 2206 | 127 |
| 128 | 12-04-71 | 1086 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 8,148 | 213 | 0.87 | 2621 | 2204 | 128 |
| 129 | 12-05-71 | 1088 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 7,710 | 316 | 2.41 | 1954 | 1680 | 129 |
| 130 | 12-7-71 | 1353 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 9,573 | 266 | 2.60 | 1742 | 1749 | 130 |
| 131 | 12-9-71 | 1347 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 8,889 | 302 | 1.73 | 2233 | 2045 | 131 |
| 132 | 12-13-71 | 1355 | C.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 6,699 | 491 | 11.92 | 272 | 266 | 132 |
| 133 | 12-13-71 | 1340 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 9,542 | 539 | 3.67 | 939 | 900 | 133 |
| 134 | 12-7-71 | 1348 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 6,978 | 214 | 2.16 | 1609 | 1560 | 134 |
| 135 | 12-9-71 | 1345 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 7,796 | 299 | 2.17 | 2147 | 2332 | 135 |
| 136 | 12-7-71 | 1349 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 5,306 | 302 | 2.77 | 1923 | 1903 | 136 |
| 137 | 12-8-71 | 1365 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 7,115 | 377 | 3.00 | 1524 | 1638 | 137 |
| 138 | 12-10-71 | 1346 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 7,175 | 338 | 2.49 | 2021 | 1669 | 138 |
| 139 | 12-13-71 | 1364 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 5,665 | 301 | 1.77 | 1659 | 1677 | 139 |
| 140 | 12-10-71 | 1363 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 6,296 | 275 | 2.91 | 1679 | 1403 | 140 |
| 141 | 12-5-71 | 1087 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 7,647 | 292 | 1.99 | 1995 | 1716 | 141 |
| 142 | 1-10-72 | 496 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Tractor | 23,990 | 506 | 1.57 | 2414 | 2202 | 142 |
| 143 | 1-7-72 | 497 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Rental | 11,055 | 252 | 1.40 | 1895 | 1516 | 143 |
| 144 | 1-5-72 | 503 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Rental | 16,893 | 233 | 1.28 | 1803 | 1498 | 144 |
| 145 | 1-24-72 | 3 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 14,684 | 193 | 1.18 | 1502 | 1529 | 145 |
| 146 | 1-14-72 | 1 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 15,159 | 280 | 1.35 | 1829 | 1425 | 146 |
| 147 | 1-14-72 | 5 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 14,165 | 167 | 1.46 | 1495 | 1407 | 147 |
| 148 | 1-24-82 | 2 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 15,741 | 260 | 2.49 | 1212 | 1234 | 148 |
| 149 | 1-24-72 | 7 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 17,307 | 364 | 2.39 | 1010 | 884 | 149 |
| 150 | 1-24-72 | 4 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 15,475 | 307 | 1.62 | 1594 | 1564 | 150 |
| 151 | 1-19-72 | 15T | Southern | 1971 | Chevrolet | 427 | V8 | 5 | 32,500 | Moving Co. | 16,234 | 1838 | 2.07 | 763 | 749 | 151 |
| 152 | 1-24-72 | 6 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 11,786 | 216 | 1.06 | 1566 | 1599 | 152 |

*Hi-Lo means two-speed rear axle.

TABLE D-4. VEHICLE DESCRIPTION AND FOURTH ROUND EMISSION RESULTS
"12" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF JULY 1, 1972)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans Speeds * | GVW lbs. | Vehicle Type | Test Miles | Emission Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1-25-72 | PO041001 | U.S.P.O. | 1970 | Dodge | 318 | V-8 | 3 Auto | 10,000 | Van | 11,560 | 322 | 1.45 | 2090 | 1693 | 1 |
| 2 | 1-25-72 | 040999 | P.O.D. | 1970 | Dodge | 318 | V-8 | 3 Auto | 10,000 | Van | 9,659 | 252 | 1.51 | 2019 | 1648 | 2 |
| 3 | 1-26-72 | PO40997 | P.O.D. | 1970 | Dodge | 318 | V-8 | 3 Auto | 10,000 | Van | 12,171 | 247 | 1.80 | 1418 | 1444 | 3 |
| 4 | 1-26-72 | PO41000 | P.O.D. | 1970 | Dodge | 318 | V-8 | 3 Auto | 10,000 | Van | 12,828 | 350 | 2.21 | 1481 | 1497 | 4 |
| 5 | 1-27-72 | PO41002 | P.O.D. | 1970 | Dodge | 318 | V-8 | 3 Auto | 7,000 | Van | 7,102 | 223 | 1.58 | 946 | 918 | 5 |
| 6 | 1-31-72 | 353 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 20,442 | 235 | 1.44 | 2363 | 1928 | 6 |
| 7 | 2-2-72 | 349 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 19,861 | 142 | 3.35 | 1484 | 1140 | 7 |
| 8 | 1-28-72 | 351 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 19,073 | 192 | 2.59 | 1553 | 1359 | 8 |
| 9 | 1-31-72 | 350 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 20,154 | 311 | 2.81 | 1988 | 1710 | 9 |
| 10 | 2-2-72 | 352 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 20,233 | 129 | 3.00 | 1860 | 1469 | 10 |
| 11 | 1-18-72 | 24340 | Ryder | 1970 | IHC | 478 | V-8 | 5 Hi-Lo | 32,000 | Tractor | 19,632 | 317 | 1.87 | 1444 | 1444 | 11 |
| 12 | 1-20-72 | 24341K | Ryder | 1970 | IHC | 478 | V-8 | 5 Hi-Lo | 32,000 | Tractor | 22,433 | 635 | 0.80 | 1450 | 1183 | 12 |
| 13 | 2-17-72 | 24343 | Ryder | 1970 | IHC | 478 | V-8 | 5 Hi-Lo | 32,000 | Tractor | 21,396 | 362 | 1.11 | 1755 | 1329 | 13 |
| 14 | 2-14-72 | 24342 | Ryder | 1970 | IHC | 478 | V-8 | 5 Hi-Lo | 32,000 | Tractor | 18,769 | 377 | 1.97 | 1351 | 1278 | 14 |
| 15 | 2-29-72 | 56 | N.S.S.D. | 1970 | IHC | 345 | V-8 | 5 | 25,500 | SchoolBus | 32,684 | 273 | 1.41 | 1829 | 1816 | 15 |
| 16 | 2-3-72 | 53 | N.S.S.D. | 1970 | IHC | 345 | V-8 | 5 | 25,500 | SchoolBus | 28,855 | 243 | 1.33 | 2481 | 1824 | 16 |
| 17 | 2-3-72 | 55 | N.S.S.D. | 1970 | IHC | 345 | V-8 | 5 | 25,500 | SchoolBus | 28,088 | 194 | 1.12 | 2289 | 1648 | 17 |
| 18 | 2-4-72 | 6 | N.S.S.D. | 1970 | IHC | 345 | V-8 | 5 | 22,000 | SchoolBus | 14,017 | 271 | 1.32 | 2862 | 2229 | 18 |
| 19 | 2-8-72 | 54 | N.S.S.D. | 1970 | IHC | 345 | V-8 | 5 | 22,000 | SchoolBus | 2,029 | 231 | 1.48 | 2381 | 1979 | 19 |
| 20 | 2-14-72 | 72341 | Hertz | 1970 | Ford | 300 | 6 | 3 Auto | 10,000 | Stake | 9,808 | 202 | 1.09 | 1766 | 1671 | 20 |
| 21 | Transferred | | | | | | | | | | | | | | | 21 |
| 22 | 2-7-72 | 5131 | CPSB | 1971 | IHC | 392 | V-8 | 3 Auto | 25,500 | Line | 9,139 | 215 | 2.63 | 1451 | 1114 | 22 |
| 23 | 2-8-72 | 5132 | CPSB | 1970 | IHC | 392 | V-8 | 3 Auto | 25,500 | Line | 7,710 | 201 | 1.65 | 1873 | 1528 | 23 |
| 24 | 5-2-72 | 5136 | CPSB | 1971 | IHC | 392 | V-8 | 3 Auto | 25,500 | Line | 10,673 | 266 | 1.93 | 1367 | 1357 | 24 |
| 25 | 2-15-72 | 5141 | CPSB | 1971 | IHC | 392 | V-8 | 3 Auto | 25,500 | Line | 2,199 | 177 | 2.30 | 869 | 752 | 25 |
| 26 | 2-15-72 | 4952 | CPSB | 1971 | IHC | 304 | V-8 | 4 | 14,000 | Van | 12,177 | 252 | .86 | 2869 | 2513 | 26 |
| 27 | 2-11-72 | 6615 | CPSB | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 8,327 | 169 | 0.46 | 2340 | 2036 | 27 |
| 28 | 2-16-72 | 6616 | CPSB | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 9,897 | 185 | 0.50 | 1537 | 1262 | 28 |
| 29 | 2-10-72 | 4824 | CPSB | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 15,189 | 171 | 0.56 | 3187 | 3066 | 29 |
| 30 | 2-10-72 | 4726 | CPSB | 1970 | Chev | 292 | 6 | 4 | 9,000 | Service | 18,393 | 225 | 1.19 | 2635 | 2524 | 30 |
| 31 | 2-9-72 | 4728 | CPSB | 1970 | Chev | 250 | 6 | 4 | 7,500 | Service | 23,720 | 255 | 1.39 | 2691 | 2096 | 31 |
| 32 | 2-9-72 | 4729 | CPSB | 1970 | Chev | 250 | 6 | 4 | 7,500 | Service | 10,176 | 223 | 1.03 | 2582 | 2133 | 32 |
| 33 | Transferred to another city | | | | | | | | | | | | | | | 33 |
| 34 | Transferred to another city | | | | | | | | | | | | | | | 34 |
| 35 | Transferred to another city | | | | | | | | | | | | | | | 35 |
| 36 | 2-17-72 | 4727 | CPSB | 1970 | Chev | 250 | 6 | 4 | 7,500 | Service | 8,985 | 252 | 1.80 | 2026 | 1653 | 36 |
| 37 | 2-18-72 | 4730 | CPSB | 1970 | Chev | 250 | 6 | 4 | 7,500 | Service | 11,321 | 272 | 0.68 | 3134 | 2698 | 37 |
| 38 | 2-18-72 | 4951 | CPSB | 1970 | IHC | 304 | V-8 | 4 | 14,000 | Service | 24,981 | 236 | 0.94 | 2626 | 2182 | 38 |
| 39 | 2-21-72 | 8810 | CPSB | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 16,873 | 213 | 4.78 | 1364 | 1284 | 39 |
| 40 | 2-21-72 | 8811 | CPSB | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 16,165 | 120 | 0.15 | 3043 | 2927 | 40 |
| 41 | 2-22-72 | 6855 | CPSB | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 19,156 | 156 | 0.45 | 1880 | 1809 | 41 |
| 42 | 2-16-72 | 6617 | CPSB | 1970 | Ford | 300 | 6 | 4 | 10,000 | Wrecker | 3,932 | 190 | 0.57 | 2994 | 2395 | 42 |
| 43 | 2-22-72 | 6856 | CPSB | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 12,986 | 195 | 0.44 | 3121 | 3087 | 43 |
| 44 | 2-24-72 | 4671 | CPSB | 1970 | Ford | 300 | 6 | 4 | 10,000 | Stake | 8,388 | 272 | 0.61 | 3051 | 3051 | 44 |
| 45 | 2-23-72 | 6857 | CPSB | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 16,194 | 194 | 0.50 | 1987 | 2023 | 45 |
| 46 | 2-23-72 | 4950 | CPSB | 1970 | IHC | 304 | V-8 | 4 | 19,700 | Bucket Tr. | 26,608 | 258 | 1.71 | 1650 | 1581 | 46 |
| 47 | 3-5-72 | 312 | CWB | 1970 | IHC | 304 | V-8 | 4 | 19,700 | Service | 18,271 | 242 | 0.94 | 2950 | 2510 | 47 |
| 48 | 2-26-72 | 314 | CWB | 1970 | IHC | 304 | V-8 | 4 | 19,700 | Service | 7,668 | 226 | 1.33 | 2432 | 2160 | 48 |
| 49 | 3-11-72 | 301 | CWB | 1970 | IHC | 304 | V-8 | 4 | 10,000 | Crew Tr. | 11,197 | 235 | 1.32 | 2767 | 2582 | 49 |
| 50 | 3-11-72 | 302 | CWB | 1970 | IHC | 304 | V-8 | 4 | 10,000 | Crew Tr. | 8,858 | 234 | 2.24 | 1735 | 1728 | 50 |

*Hi-lo means two-speed rear axle.

TABLE D-4 (Cont'd). VEHICLE DESCRIPTION AND FOURTH ROUND EMISSION RESULTS
"12" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF JULY 1, 1972)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans Speeds * | GVW lbs. | Vehicle Type | Test Miles | Emission Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 | 3-1-72 | 93 | Pearl | 1970 | IHC | 304 | V-8 | 3 | 7,500 | Delivery | 13,680 | 324 | 1.82 | 1881 | 1794 | 51 |
| 52 | 3-30-72 | 105 | Pearl | 1970 | GMC | 292 | 6 | 3 | 7,500 | Delivery | 25,094 | 291 | 0.79 | 3663 | 2853 | 52 |
| 53 | 3-1-72 | 106 | Pearl | 1970 | Dodge | 318 | V-8 | 3 | 7,500 | Delivery | 13,798 | 287 | 1.60 | 1844 | 1744 | 53 |
| 54 | 3-30-72 | 122 | Pearl | 1970 | Ford | 300 | 6 | 3 | 7,500 | Delivery | 24,069 | 183 | 0.26 | 4008 | 3167 | 54 |
| 55 | 2-26-72 | 311 | CWB | 1970 | IHC | 304 | V-8 | 4 | 19,700 | Service | 6,689 | 267 | 1.34 | 2749 | 2444 | 55 |
| 56 | 3-5-72 | 313 | CWB | 1970 | IHC | 304 | V-8 | 4 | 19,700 | Service | 11,146 | 225 | 1.22 | 2708 | 2223 | 56 |
| 57 | 2-27-72 | 315 | CWB | 1970 | IHC | 304 | V-8 | 4 | 19,700 | Service | 7,989 | 243 | 1.46 | 2482 | 2204 | 57 |
| 58 | 3-4-72- | 316 | CWB | 1970 | IHC | 304 | V-8 | 4 | 19,700 | Service | 4,486 | 166 | 1.15 | 1492 | 1482 | 58 |
| 59 | 3-4-72 | 317 | CWB | 1970 | IHC | 304 | V-8 | 4 | 19,700 | Service | 7,469 | 244 | 1.09 | 2537 | 2387 | 59 |
| 60 | 2-27-72 | 253 | CWB | 1970 | Chev | 307 | V-8 | 4 | 7,500 | Service | 4,889 | 161 | 3.08 | 1600 | 1472 | 60 |
| 61 | 2-27-72 | 254 | CWB | 1970 | Chev | 307 | V-8 | 4 | 7,500 | Service | 12,842 | 192 | 3.24 | 1648 | 1480 | 61 |
| 62 | 3-11-72 | 391 | CWB | 1970 | Chev | 366 | V-8 | 5 | 32,000 | Crane | 3,203 | 182 | 0.75 | 941 | 878 | 62 |
| 63 | 3-18-72 | 392 | CWB | 1970 | Chev | 366 | V-8 | 5 | 32,000 | Crane | 1,896 | 121 | 1.66 | 439 | 378 | 63 |
| 64 | 3-1-72 | 582 | RedArrow | 1970 | Dodge | 318 | V-8 | 4 | 24,000 | Freight | 22,211 | 259 | 1.68 | 1641 | 1682 | 64 |
| 65 | 2-29-72 | 581 | RedArrow | 1970 | Dodge | 318 | V-8 | 4 | 24,000 | Freight | 16,016 | 355 | 2.06 | 2112 | 2072 | 65 |
| 66 | 3-18-72 | 251 | CWB | 1970 | Dodge | 318 | V-8 | 3 | 7,500 | Meter | 10,821 | 212 | 1.97 | 1440 | 1218 | 66 |
| 67 | 3-18-72 | 252 | CWB | 1970 | Dodge | 318 | V-8 | 3 | 7,500 | Service | 8,275 | 262 | 1.74 | 2408 | 1880 | 67 |
| 68 | 3-29-72 | 360 | CWB | 1970 | Ford | 361 | V-8 | 5 | 25,500 | Dump | 15,700 | 282 | 1.55 | 1965 | 1653 | 68 |
| 69 | 3-1-72 | 5133 | CPSB | 1970 | IHC | 392 | V-8 | 6 | 25,500 | Line | 8,978 | 245 | 2.28 | 1253 | 1054 | 69 |
| 70 | 3-1-72 | 5140 | CPSB | 1970 | IHC | 392 | V-8 | 6 | 25,500 | Line | 18,022 | 218 | 1.86 | 1477 | 1167 | 70 |
| 71 | 3-2-72 | 5097 | CPSB | 1971 | IHC | 345 | V-8 | 5 | 25,000 | Digger | 12,555 | 302 | 1.62 | 2602 | 2095 | 71 |
| 72 | 3-2-72 | 5106 | CPSB | 1971 | IHC | 345 | V-8 | 5 | 25,000 | Digger | 12,994 | 186 | 0.91 | 2787 | 2274 | 72 |
| 73 | 3-23-72 | 5130 | CPSB | 1970 | IHC | 392 | V-8 | 6 Auto | 25,500 | Line | 14,981 | 328 | 2.98 | 937 | 927 | 73 |
| 74 | 3-8-72 | 5135 | CPSB | 1970 | IHC | 392 | V-8 | 6 Auto | 25,500 | Line | 10,645 | 322 | 2.42 | 1632 | 1404 | 74 |
| 75 | 4-29-72 | M-78 | St. Hosp. | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 5,321 | 229 | 2.10 | 2231 | 2271 | 75 |
| 76 | 4-29-72 | M-80 | St. Hosp. | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 2,455 | 300 | 2.14 | 1454 | 1460 | 76 |
| 77 | 4-29-72 | M-98 | St. Hosp. | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 3,046 | 285 | 1.44 | 2332 | 2374 | 77 |
| 78 | 4-8-72 | SH680 | St.Hosp | 1970 | Ford | 302 | V-8 | 3 Auto | 6,800 | Van | 8,664 | 235 | 0.97 | 2469 | 2262 | 78 |
| 79 | 4-8-72 | SH699 | St.Hosp | 1970 | GMC | 401 | V-6 | 5 | 27,000 | Bus | 9,526 | 298 | 4.90 | 904 | 795 | 79 |
| 80 | 4-5-72 | 1029 | LoneStar | 1970 | Chev | 307 | V-8 | 4 | 6,600 | Delivery | 34,837 | 259 | 2.27 | 1071 | 1071 | 80 |
| 81 | 3-22-72 | 134 | Herder | 1970 | Ford | 300 | 6 | 5 | 21,000 | Freight | 24,153 | 162 | 3.29 | 1256 | 1150 | 81 |
| 82 | 3-23-72 | 135 | Herder | 1970 | Ford | 300 | 6 | 5 | 21,000 | Freight | 15,848 | 269 | 0.51 | 3159 | 3172 | 82 |
| 83 | 3-22-72 | 239 | Herder | 1970 | Ford | 361 | V-8 | 5 | 22,000 | Freight | 14,450 | 329 | 1.57 | 1120 | 1054 | 83 |
| 84 | 3-21-72 | 240 | Herder | 1970 | Ford | 361 | V-8 | 5 | 22,000 | Freight | 21,901 | 586 | 2.48 | 2364 | 2090 | 84 |
| 85 | Wrecked | | | | | | | | | | | | | | | 85 |
| 86 | 4-8-72 | L-41 | St.Hosp | 1970 | Dodge | 225 | 6 | 3 Auto | 10,000 | Laundry | 3,597 | 207 | 2.14 | 2083 | 1823 | 86 |
| 87 | 4-9-72 | M-77 | St.Hosp | 1970 | Dodge | 225 | 6 | 3 Auto | 10,000 | Grounds | 3,468 | 230 | 2.06 | 2334 | 2208 | 87 |
| 88 | 4-9-72 | M-87 | St.Hosp | 1970 | Dodge | 225 | 6 | 3 Auto | 7,500 | Service | 7,691 | 175 | 1.90 | 1933 | 1803 | 88 |
| 89 | 4-9-72 | M-9 | St.Hosp. | 1970 | Dodge | 225 | 6 | 3 Auto | 10,000 | Maint. | 5,491 | 213 | 2.17 | 2565 | 2447 | 89 |
| 90 | 4-29-72 | M-95 | St. Hosp. | 1970 | Dodge | 225 | 6 | 3 Auto | 10,000 | Grounds | 3,066 | 268 | 1.71 | 1868 | 1888 | 90 |
| 91 | 3-15-72 | 2179 | CPR | 1970 | IHC | 345 | V-8 | 4 | 19,000 | WaterTr. | 1,542 | 280 | 1.17 | 2198 | 2198 | 91 |
| 92 | 3-28-72 | 2120 | CPR | 1970 | Ford | 360 | V-8 | 4 | 8,300 | Maint. | 6,608 | 237 | 1.55 | 1711 | 1447 | 92 |
| 93 | 3-29-72 | 27 | BMW | 1970 | Ford | 360 | V-8 | 4 | 7,500 | Repair | 16,338 | 243 | 2.56 | 1630 | 1371 | 93 |
| 94 | 3-25-72 | 2073 | CPR | 1970 | Chev | 292 | 6 | 3 Auto | 14,000 | Maint. | 3,283 | 179 | 0.84 | 2683 | 2385 | 94 |
| 95 | 3-25-72 | 2121 | CPR | 1970 | Ford | 360 | V-8 | 4 | 8,300 | Maint. | 2,796 | 255 | 2.20 | 1537 | 1394 | 95 |
| 96 | 3-31-72 | 4T1 | BCRD | 1970 | Ford | 240 | 6 | 3 | 7,500 | Maint. | 17,218 | 211 | 1.82 | 1088 | 870 | 96 |
| 97 | 3-31-72 | 4T-16 | BCRD | 1970 | Ford | 240 | 6 | 3 | 7,500 | Welder | 10,932 | 288 | 1.87 | 2165 | 1732 | 97 |
| 98 | 4-4-72 | 1T22 | BCRD | 1970 | Ford | 330 | V-8 | 5 | 21,000 | WaterTr. | 20,390 | 253 | 0.73 | 1807 | 1773 | 98 |
| 99 | 4-3-72 | 2T9 | BCRD | 1970 | Ford | 330 | V-8 | 4 | 21,000 | WaterTr. | 66,227 | 2093 | 0.81 | 2780 | 2727 | 99 |
| 100 | 4-3-72 | 2T12 | BCRD | 1970 | Ford | 330 | V-8 | 4 | 21,000 | WaterTr. | 13,743 | 418 | 1.40 | 2049 | 2010 | 100 |

* Hi-lo means two-speed rear axle.

TABLE D-4 (Cont'd). VEHICLE DESCRIPTION AND FOURTH ROUND EMISSION RESULTS
"12" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF JULY 1, 1972)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans Speeds * | GVW lbs. | Vehicle Type | Test Miles | Emission Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 101 | 3-31-72 | 4T-23 | BCRD | 1970 | Ford | 330 | V-8 | 5 | 21,000 | WaterTr. | 20,454 | 480 | 3.89 | 1553 | 1267 | 101 |
| 102 | 4-5-72 | 7 | BMW | 1970 | Ford | 360 | V-8 | 4 | 6,100 | Maint. | 18,126 | 272 | 2.90 | 1562 | 1551 | 102 |
| 103 | 4-6-72 | 34 | Southern | 1970 | GMC | 427 | V-8 | 5 | 32,500 | Moving | 46,976 | 231 | 2.85 | 591 | 591 | 103 |
| 104 | 3-28-72 | 2085 | CPR | 1970 | Chev | 307 | V-8 | 3 | 7,500 | Maint. | 12,227 | 174 | 2.22 | 2328 | 1969 | 104 |
| 105 | 3-9-72 | 2122 | CPR | 1970 | IHC | 392 | V-8 | 5 | 25,500 | Maint. | 2,880 | 273 | 1.86 | 2143 | 1864 | 105 |
| 106 | 3-9-72 | 2119 | CPR | 1970 | Ford | 360 | V-8 | 4 | 8,300 | Maint. | 3,756 | 250 | 1.97 | 1853 | 1629 | 106 |
| 107 | 3-25-72 | 2123 | CPR | 1970 | Chev | 307 | V-8 | 3 | 7,500 | Maint. | 5,421 | 208 | 1.94 | 1516 | 1333 | 107 |
| 108 | 3-14-72 | 2168 | CPR | 1970 | Chev | 307 | V-8 | 4 | 10,000 | Maint. | 7,267 | 206 | 2.96 | 1714 | 1709 | 108 |
| 109 | 3-14-72 | 2169 | CPR | 1970 | Chev | 307 | V-8 | 4 | 10,000 | Maint. | 868 | 244 | 2.46 | 1519 | 1461 | 109 |
| 110 | 3-16-72 | 2081 | CPR | 1970 | Chev | 307 | V-8 | 3 | 7,500 | Maint. | 6,334 | 244 | 2.49 | 1984 | 1708 | 110 |
| 111 | 3-16-72 | 2082 | CPR | 1970 | Chev | 307 | V-8 | 3 | 7,500 | Maint. | 6,337 | 170 | 2.32 | 1955 | 1644 | 111 |
| 112 | 3-15-72 | 2170 | CPR | 1970 | Chev | 307 | V-8 | 4 | 10,000 | Maint. | 15,142 | 208 | 2.54 | 1965 | 1928 | 112 |
| 113 | 4-4-72 | 5134 | CPSB | 1970 | IHC | 392 | V-8 | 6 Auto | 24,000 | Constr. | 5,377 | 232 | 2.99 | 717 | 720 | 113 |
| 114 | 4-6-72 | 51375 | CPSB | 1971 | IHC | 392 | V-8 | 6 Auto | 25,500 | Constr. | 12,504 | 211 | 1.95 | 1016 | 1016 | 114 |
| 115 | 4-12-72 | 5138 | CPSB | 1970 | IHC | 392 | V-8 | 6 Auto | 25,500 | Constr. | 24,048 | 316 | 3.02 | 974 | 1011 | 115 |
| 116 | 4-12-72 | 4364 | Elmore | 1970 | GMC | 350 | V-8 | 4 | 14,000 | Moving | 4,481 | 211 | 2.30 | 1437 | 1421 | 116 |
| 117 | 6-7-72 | 16 | Elmore | 1970 | GMC | 350 | V-8 | 4 | 10,000 | Moving | 7,600 | 181 | 1.33 | 1559 | 1613 | 117 |
| 118 | 4-13-72 | 043247 | POD | 1970 | Dodge | 318 | V-8 | 3 Auto | 10,000 | Mail | 8,135 | 316 | 1.94 | 1766 | 1747 | 118 |
| 119 | 4-17-72 | 043144 | POD | 1970 | Dodge | 318 | V-8 | 3 Auto | 10,000 | Mail | 11,447 | 345 | 2.02 | 1359 | 1094 | 119 |
| 120 | 4-18-72 | 043327 | POD | 1970 | Dodge | 318 | V-8 | 3 Auto | 10,000 | Mail | 7,045 | 270 | 1.71 | 1371 | 1356 | 120 |
| 121 | 5-6-72 | 98 | FACS | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 18,349 | 208 | .51 | 368 | 3696 | 121 |
| 122 | 5-7-72 | 101 | FACS | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 18,550 | 224 | 1.96 | 2744 | 2793 | 122 |
| 123 | 5-21-72 | 102 | FACS | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 24,888 | 150 | 1.67 | 1064 | 1001 | 123 |
| 124 | 5-7-72 | 105 | FACS | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 11,917 | 125 | 0.75 | 1129 | 1190 | 124 |
| 125 | 5-9-72 | 043221 | POD | 1970 | Dodge | 318 | V-8 | 3 Auto | 10,000 | Delivery | 9,582 | 352 | 2.23 | 1358 | 1363 | 125 |
| 126 | 5-12-72 | 042519 | POD | 1970 | Dodge | 318 | V-8 | 3 Auto | 10,000 | Delivery | 6,945 | 261 | 1.89 | 1257 | 1283 | 126 |
| 127 | 5-21-72 | 1085 | Lone Star | 1971 | Ford | 391 | V-8 | 5 | 27,500 | Delivery | 8,412 | 225 | 0.944 | 2294 | 2269 | 127 |
| 128 | 5-21-72 | 1086 | Lone Star | 1971 | Ford | 391 | V-8 | 5 | 27,500 | Delivery | 14,574 | 224 | 0.74 | 2302 | 2259 | 128 |
| 129 | 5-21-72 | 1088 | Lone Star | 1971 | Ford | 391 | V-8 | 5 | 27,500 | Delivery | 14,034 | 340 | 2.67 | 1694 | 1700 | 129 |
| 130 | Converted to Butane Fuel | | | | | | | | | | | | | | | 130 |
| 131 | 4-26-72 | 1347 | SAPW | 1971 | IHC | 392 | V-8 | 6-Auto | 34,000 | Garbage | 12,173 | 205 | 1.74 | 1233 | 1296 | 131 |
| 132 | 4-24-72 | 1355 | SAPW | 1971 | IHC | 392 | V-8 | 6-Auto | 34,000 | Garbage | 10,579 | 265 | 2.48 | 1561 | 1443 | 132 |
| 133 | Converted to Butane Fuel | | | | | | | | | | | | | | | 133 |
| 134 | 4-20-72 | 1348 | SAPW | 1971 | IHC | 392 | V-8 | 6-Auto | 34,000 | Garbage | 10,731 | 223 | 2.03 | 1527 | 1554 | 134 |
| 135 | 4-19-72 | 1345 | SAPW | 1971 | IHC | 392 | V-8 | 6-Auto | 34,000 | Garbage | 11,691 | 270 | 2.29 | 1791 | 1865 | 135 |
| 136 | 4-24-72 | 1349 | SAPW | 1971 | IHC | 392 | V-8 | 6-Auto | 34,000 | Garbage | 8,222 | 279 | 2.52 | 1762 | 1629 | 136 |
| 137 | 4-25-72 | 1365 | SAPW | 1971 | IHC | 392 | V-8 | 6-Auto | 34,000 | Garbage | 11,234 | 321 | 2.68 | 1798 | 1662 | 137 |
| 138 | 4-27-72 | 1346 | SAPW | 1971 | IHC | 392 | V-8 | 6-Auto | 34,000 | Garbage | 11,450 | 483 | 3.96 | 1217 | 1203 | 138 |
| 139 | 4-26-72 | 1364 | SAPW | 1971 | IHC | 392 | V-8 | 6-Auto | 34,000 | Garbage | 9,315 | 274 | 1.88 | 1326 | 1326 | 139 |
| 140 | 4-20-72 | 1363 | SAPW | 1971 | IHC | 392 | V-8 | 6-Auto | 34,000 | Garbage | 10,738 | 271 | 2.60 | 1409 | 1415 | 140 |
| 141 | 5-21-72 | 1087 | Lone Star | 1971 | Ford | 391 | V-8 | 5 | 27,500 | Delivery | 13,669 | 333 | 3.36 | 1438 | 1411 | 141 |
| 142 | 5-22-72 | 496 | ABC | 1971 | IHC | 478 | V-8 | 5 | 32,000 | Rental | 35,472 | 153 | 1.24 | 1035 | 1011 | 142 |
| 143 | 5-4-72 | 497 | ABC | 1971 | IHC | 478 | V-8 | 5 | 32,000 | Rental | 22,187 | 236 | 1.58 | 1663 | 1517 | 143 |
| 144 | 5-22-72 | 503 | ABC | 1971 | IHC | 478 | V-8 | 5 | 32,000 | Rental | 29,463 | 1922 | 1.77 | 1133 | 1153 | 144 |
| 145 | 5-17-72 | 3 | JFC | 1971 | Chev. | 350 | V-8 | 4 | 24,000 | Delivery | 19,492 | 143 | 0.87 | 1115 | 1102 | 145 |
| 146 | 5-11-72 | 1 | JFC | 1971 | Chev. | 350 | V-8 | 4 | 24,000 | Delivery | 21,830 | 257 | 2.01 | 961 | 1024 | 146 |
| 147 | 5-12-72 | 5 | JFC | 1971 | Chev. | 350 | V-8 | 4 | 24,000 | Delivery | 21,216 | 162 | 1.27 | 1174 | 1274 | 147 |
| 148 | 5-12-72 | 2 | JFC | 1971 | Chev. | 350 | V-8 | 4 | 24,000 | Delivery | 22,938 | 290 | 2.37 | 1110 | 1159 | 148 |
| 149 | 5-17-72 | 7 | JFC | 1971 | Chev. | 350 | V-8 | 4 | 24,000 | Delivery | 22,608 | 121 | 1.71 | 844 | 819 | 149 |
| 150 | 5-11-72 | 4 | JFC | 1971 | Chev. | 350 | V-8 | 4 | 24,000 | Delivery | 21,178 | 220 | 1.76 | 1140 | 1199 | 150 |
| 151 | 5-3-72 | 15T | Southern | 1971 | Chev. | 427 | V-8 | 5 | 32,500 | Moving | 24,024 | 232 | 1.82 | 1448 | 1370 | 151 |
| 152 | 5-10-72 | 6 | JFC | 1971 | Chev. | 350 | V-8 | 4 | 24,000 | Delivery | 18,526 | 204 | 0.96 | 1438 | 1415 | 152 |

*Hi-lo means two-speed rear axle.

TABLE D-5. VEHICLE DESCRIPTION AND FIFTH ROUND EMISSION RESULTS
"18" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF MARCH 1, 1973)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans. Speeds* | GVW lbs. | Vehicle Type | Test Mileage | Emissions Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7-25-72 | PO41001 | P.O.D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Van | 13,961 | 244 | 1.36 | 1605 | 1573 | 1 |
| 2 | 7-25-72 | PO40999 | P.O.D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Van | 13,257 | 294 | 1.79 | 1632 | 1599 | 2 |
| 3 | 7-26-72 | 040997 | P.O.D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Van | 15,745 | 221 | 1.65 | 847 | 822 | 3 |
| 4 | 7-26-72 | PO41000 | P.O.D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Van | 16,920 | 250 | 2.16 | 1386 | 1344 | 4 |
| 5 | 7-27-72 | PO41002 | P.O.D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Van | 9,437 | 249 | 1.74 | 603 | 633 | 5 |
| 6 | 8-2-72 | 353 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 28,552 | 216 | 1.61 | 2210 | 2186 | 6 |
| 7 | 7-31-72 | 349 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 27,867 | 228 | 3.80 | 1101 | 1092 | 7 |
| 8 | 8-1-72 | 351 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 27,573 | 117 | 2.00 | 1622 | 1573 | 8 |
| 9 | 8-1-72 | 350 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 28,311 | 298 | 2.74 | 2393 | 2321 | 9 |
| 10 | 7-31-72 | 352 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 28,755 | 180 | 3.00 | 1441 | 1431 | 10 |
| 11 | 11-12-72 | 24340 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 38,608 | 231 | 1.58 | 1575 | 1666 | 11 |
| 12 | 8-17-72 | 24341K | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 31,998 | 165 | 1.04 | 1506 | 1467 | 12 |
| 13 | 11-12-72 | 24343 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 37,044 | 234 | 2.63 | 1736 | 1837 | 13 |
| 14 | 11-12-72 | 24342 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 40,279 | 227 | 1.74 | 1344 | 1422 | 14 |
| 15 | 8-3-72 | 56 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 22,500 | School Bus | 40,658 | 143 | 1.41 | 1317 | 1308 | 15 |
| 16 | 8-30-72 | 53 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 40,536 | 439 | 2.07 | 2779 | 2827 | 16 |
| 17 | 8-30-72 | 55 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 40,079 | 271 | 1.22 | 1829 | 1862 | 17 |
| 18 | 8-29-72 | 6 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 22,000 | School Bus | 19,726 | 310 | 1.24 | 2671 | 2700 | 18 |
| 19 | 8-29-72 | 54 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 22,000 | School Bus | | 290 | 1.51 | 2455 | 2481 | 19 |
| 20 | 10-12-72 | 72341 | Hertz | 1970 | Ford | 300 | 6 | 3-auto | 10,000 | Stake | 17,515 | 250 | 1.19 | 2421 | 2465 | 20 |
| 21 | 10-4-72 | 72218 | Hertz | 1970 | Ford | 240 | 6 | 3-auto | 7,500 | Pickup | 30,968 | 304 | 2.45 | 1827 | 1772 | 21 |
| 22 | 8-2-72 | 5131 | CPSB | 1971 | IHC | 392 | V8 | 3-auto | 25,500 | Line | 16,686 | 296 | 4.33 | 904 | 894 | 22 |
| 23 | 8-4-72 | 5132 | CPSB | 1970 | IHC | 392 | V8 | 3-auto | 25,500 | Line | 11,100 | 198 | 1.39 | 1557 | 1528 | 23 |
| 24 | 8-9-72 | 5136 | CPSB | 1971 | IHC | 392 | V8 | 3-auto | 25,500 | Line | 14,548 | 296 | 2.22 | 1486 | 1486 | 24 |
| 25 | 8-11-72 | 5141 | CPSB | 1971 | IHC | 392 | V8 | 3-auto | 25,500 | Line | 3,958 | 129 | 1.86 | 724 | 766 | 25 |
| 26 | 8-18-72 | 4952 | CPSB | 1971 | IHC | 304 | V8 | 4 | 14,000 | Van | 19,334 | 301 | 1.30 | 2786 | 2755 | 26 |
| 27 | 8-7-72 | 6615 | CPSB | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 11,737 | 195 | 0.67 | 2433 | 2406 | 27 |
| 28 | 8-16-72 | 6616 | CPSB | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 14,386 | 181 | 0.49 | 2535 | 2545 | 28 |
| 29 | 8-9-72 | 4824 | CPSB | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 2,205 | 145 | 0.39 | 2009 | 2009 | 29 |
| 30 | 8-21-72 | 4726 | CPSB | 1970 | Chev | 292 | 6 | 4 | 9,000 | Service | 26,673 | 210 | 0.92 | 2217 | 2201 | 30 |
| 31 | 8-8-72 | 4728 | CPSB | 1970 | Chev | 250 | 6 | 4 | 7,500 | Service | 34,406 | 214 | 1.17 | 2322 | 2331 | 31 |
| 32 | 8-8-72 | 4729 | CPSB | 1970 | Chev | 250 | 6 | 4 | 7,500 | Service | 15,055 | 230 | 1.54 | 1917 | 1925 | 32 |
| 33 | Transferred to another city | | | | | | | | | | | | | | | 33 |
| 34 | Transferred to another city | | | | | | | | | | | | | | | 34 |
| 35 | Transferred to another city | | | | | | | | | | | | | | | 35 |
| 36 | 8-24-7[illegible] | 4727 | CPSB | 1970 | Chev | 250 | 6 | 4 | 7,500 | Service | 13,496 | 371 | 2.09 | 2085 | 2085 | 36 |
| 37 | 8-21-72 | 4730 | CPSB | 1970 | Chev | 250 | 6 | 4 | 7,500 | Service | 16,982 | 261 | 1.08 | 2740 | 2721 | 37 |
| 38 | 8-15-72 | 4951 | CPSB | 1970 | IHC | 304 | V8 | 4 | 14,000 | Service | 29,053 | 261 | 1.36 | 2613 | 2728 | 38 |
| 39 | 9-7-72 | 8810 | CPSB | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 27,812 | 283 | 3.09 | 1844 | 1837 | 39 |
| 40 | 8-14 | 8811 | CPSB | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 24,476 | 165 | 0.22 | 3637 | 3677 | 40 |
| 41 | 8-11-72 | 6855 | CPSB | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 25,184 | 208 | 0.53 | 978 | 1035 | 41 |
| 42 | 8-7-72 | 6617 | CPSB | 1970 | Ford | 300 | 6 | 4 | 10,000 | Wrecker | 5,532 | 188 | 0.55 | 2407 | 2381 | 42 |
| 43 | 9-7-72 | 6856 | CPSB | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 18,794 | 137 | 0.47 | 2973 | 2962 | 43 |
| 44 | 9-15-72 | 4671 | CPSB | 1970 | Ford | 300 | 6 | 4 | 10,000 | Stake | 13,083 | 187 | 0.45 | 2781 | 2707 | 44 |
| 45 | 8-14-72 | 6857 | CPSB | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 22,758 | 212 | 0.51 | 2415 | 2442 | 45 |
| 46 | 8-22-72 | 4950 | CPSB | 1970 | IHC | 304 | V8 | 4 | 19,700 | Bucket Truck | 38,930 | 269 | 1.85 | 2032 | 1861 | 46 |
| 47 | 9-30-72 | 312 | CWB | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 28,460 | 2031 | 0.72 | 1985 | 1649 | 47 |
| 48 | 10-7-72 | 314 | CWB | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 12,358 | 217 | 1.42 | 2270 | 2147 | 48 |
| 49 | 10-9-72 | 301 | CWB | 1970 | IHC | 304 | V8 | 4 | 10,000 | Crew Truck | 15,091 | 235 | 1.60 | 2438 | 2431 | 49 |
| 50 | 10-9-72 | 302 | CWB | 1970 | IHC | 304 | V8 | 4 | 10,000 | Crew Truck | 13,846 | 189 | 2.20 | 1853 | 1847 | 50 |

*Hi-lo means two-speed rear axle.

TABLE D-5 (Cont'd). VEHICLE DESCRIPTION AND FIFTH ROUND EMISSION RESULTS
"18" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF MARCH 1, 1973)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans. Speeds* | GVW lbs. | Vehicle Type | Test Mileage | Emissions Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 | 9-25-72 | 93 | Pearl | 1970 | IHC | 304 | V8 | 3 | 7,500 | Delivery | 21,279 | 313 | 1.78 | 2179 | 2188 | 51 |
| 52 | 9-27-72 | 105 | Pearl | 1970 | GMC | 292 | 6 | 3 | 7,500 | Delivery | 24,222 | 316 | 0.64 | 3337 | 3249 | 52 |
| 53 | 9-28-72 | 106 | Pearl | 1970 | Dodge | 318 | V8 | 3 | 7,500 | Delivery | 21,975 | 293 | 1.57 | 2366 | 2357 | 53 |
| 54 | 9-27-72 | 122 | Pearl | 1970 | Ford | 300 | 6 | 3 | 7,500 | Delivery | 34,208 | 192 | 0.27 | 4047 | 3940 | 54 |
| 55 | 9-9-72 | 311 | CWB | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 8,974 | 249 | 1.42 | 2273 | 2344 | 55 |
| 56 | 9-9-72 | 313 | CWB | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 14,607 | 211 | 1.36 | 2333 | 2414 | 56 |
| 57 | 10-10-72 | 315 | CWB | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 13,227 | 216 | 1.55 | 1925 | 1985 | 57 |
| 58 | 9-9-72 | 316 | CWB | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 6,547 | 193 | 1.13 | 1761 | 1780 | 58 |
| 59 | 9-9-72 | 317 | CWB | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 10,870 | 254 | 1.14 | 2699 | 2728 | 59 |
| 60 | 9-30-72 | 253 | CWB | 1970 | Chev | 307 | V8 | 4 | 7,500 | Service | 9,157 | 3906 | 1.92 | 923 | 820 | 60 |
| 61 | 9-30-72 | 254 | CWB | 1970 | Chev | 307 | V8 | 4 | 7,500 | Service | 17,062 | 2136 | 1.86 | 1282 | 1103 | 61 |
| 62 | 9-16-72 | 391 | CWB | 1970 | Chev | 366 | V8 | 5 | 32,000 | Crane | 4,313 | 180 | 1.00 | 1125 | 1175 | 62 |
| 63 | 9-16-72 | 392 | CWB | 1970 | Chev | 366 | V8 | 5 | 32,000 | Crane | 3,329 | 139 | 1.79 | 701 | 732 | 63 |
| 64 | 9-14-72 | 582 | Red Arrow | 1970 | Dodge | 318 | V8 | 4 | 24,000 | Freight | | 485 | 1.53 | 1986 | 1985 | 64 |
| 65 | 9-14-72 | 581 | Red Arrow | 1970 | Dodge | 318 | V8 | 4 | 24,000 | Freight | | 368 | 1.94 | 2095 | 2015 | 65 |
| 66 | 9-30-72 | 251 | CWB | 1970 | Dodge | 318 | V8 | 3-auto | 7,500 | Meter | 15,384 | 235 | 1.61 | 1237 | 1088 | 66 |
| 67 | 9-16-72 | 252 | CWB | 1970 | Dodge | 318 | V8 | 3 | 7,500 | Service | 11,915 | 246 | 1.58 | 2257 | 2232 | 67 |
| 68 | 10-10-72 | 360 | CWB | 1970 | Ford | 361 | V8 | 5 | 25,500 | Dump | 20,277 | 256 | 2.37 | 1623 | 1623 | 68 |
| 69 | 9-13-72 | 5133 | CPSB | 1970 | IHC | 392 | V8 | 6-auto | 25,500 | Line | 17,555 | 119 | 1.34 | 1032 | 1043 | 69 |
| 70 | 9-19-72 | 5140 | CPSB | 1970 | IHC | 392 | V8 | 6-auto | 25,500 | Line | 31,006 | 281 | 2.38 | 1212 | 1250 | 70 |
| 71 | 9-21-72 | 5097 | CPSB | 1971 | IHC | 345 | V8 | 5 | 25,000 | Digger | 19,304 | 282 | 1.72 | 2143 | 2196 | 71 |
| 72 | 9-13-72 | 5106 | CPSB | 1971 | IHC | 345 | V8 | 5 | 25,000 | Digger | 20,640 | 216 | 1.00 | 2146 | 2169 | 72 |
| 73 | 9-19-72 | 5130 | CPSB | 1970 | IHC | 392 | V8 | 6-auto | 25,500 | Line | 23,328 | 346 | 3.17 | 1376 | 1419 | 73 |
| 74 | 9-21-72 | 5153 | CPSB | 1970 | IHC | 392 | V8 | 6-auto | 25,500 | Line | 18,488 | 301 | 2.81 | 1408 | 1438 | 74 |
| 75 | 10-14-72 | M-78 | State Hosp. | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 7,821 | 297 | 2.03 | 2441 | 2451 | 75 |
| 76 | 10-14-72 | M-80 | State Hosp. | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 3,204 | 238 | 2.04 | 1667 | 1674 | 76 |
| 77 | 10-14-72 | M-98 | State Hosp. | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 3,884 | 247 | 1.86 | 2122 | 2099 | 77 |
| 78 | 10-15-72 | SH-680 | State Hosp. | 1970 | Ford | 302 | V8 | 3-auto | 6,800 | Van | | 252 | 0.99 | 2501 | 2473 | 78 |
| 79 | 11-4-72 | SH-699 | State Hosp. | 1970 | GMC | 401 | V6 | 5 | 27,000 | Bus | 17,822 | 252 | 5.03 | 1162 | 1027 | 79 |
| 80 | Over 50,000 miles. | | | | | | | | | | | | | | | 80 |
| 81 | 10-5-72 | 134 | Herder | 1970 | Ford | 300 | 6 | 5 | 21,000 | Freight | 35,495 | 305 | 4.80 | 1030 | 1003 | 81 |
| 82 | 10-5-72 | 135 | Herder | 1970 | Ford | 300 | 6 | 5 | 21,000 | Freight | 23,212 | 314 | 0.48 | 3305 | 3219 | 82 |
| 83 | 10-4-72 | 239 | Herder | 1970 | Ford | 361 | V8 | 5 | 22,000 | Freight | 21,777 | 335 | 1.50 | 1953 | 1838 | 83 |
| 84 | 10-4-72 | 240 | Herder | 1970 | Ford | 361 | V8 | 5 | 22,000 | Freight | 29,403 | 566 | 2.46 | 2258 | 2125 | 84 |
| 85 | Wrecked | | | | | | | | | | | | | | | |
| 86 | 10-15-72 | L-41 | State Hosp. | 1970 | Dodge | 225 | 6 | 3-auto | 10,000 | Laundry | 5,147 | 191 | 2.07 | 1673 | 1602 | 86 |
| 87 | 10-14-72 | M-77 | State Hosp. | 1970 | Dodge | 225 | 6 | 3 | 10,000 | Grounds | 4,937 | 229 | 2.05 | 2129 | 2137 | 87 |
| 88 | 10-14-72 | M-87 | State Hosp. | 1970 | Dodge | 225 | 6 | 3-auto | 7,500 | Service | 11,193 | 204 | 1.81 | 1352 | 1337 | 88 |
| 89 | 10-15-72 | M-90 | State Hosp. | 1970 | Dodge | 225 | 6 | 3-auto | 10,000 | Maint. | 7,549 | 217 | 2.15 | 2120 | 2030 | 89 |
| 90 | 11-4-72 | M-95 | State Hosp. | 1970 | Dodge | 225 | 6 | 3-auto | 10,000 | Grounds | 4,862 | 193 | 1.76 | 2416 | 2136 | 90 |
| 91 | 10-25-72 | 2179 | CP&R | 1970 | IHC | 345 | V8 | 4 | 19,000 | Water Truck | 2,061 | 142 | 0.95 | 1819 | 1617 | 91 |
| 92 | 10-21-72 | 2120 | CP&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maint. | 9,685 | 231 | 2.02 | 1654 | 1750 | 92 |
| 93 | 10-11-72 | 27 | BMW | 1970 | Ford | 360 | V8 | 4 | 7,500 | Repair | 24,538 | 280 | 2.99 | 1545 | 1540 | 93 |
| 94 | 10-22-72 | 2073 | CP&R | 1970 | Chev. | 296 | 6 | 3-auto | 14,000 | Maint. | 5,118 | 288 | 0.88 | 3073 | 2840 | 94 |
| 95 | 10-22-72 | 2121 | CP&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maint. | 4,098 | 270 | 2.51 | 1502 | 1474 | 95 |
| 96 | 10-26-72 | 4T1 | BCRD | 1970 | Ford | 240 | 6 | 3 | 7,500 | Maint. | 25,055 | 347 | 2.63 | 1215 | 1117 | 96 |
| 97 | 10-26-72 | 4T16 | BCRD | 1970 | Ford | 240 | 6 | 3 | 7,500 | Welder | 17,411 | 312 | 2.58 | 1358 | 1232 | 97 |
| 98 | 10-27-72 | 1T22 | BCRD | 1970 | Ford | 330 | V8 | 5 | 21,000 | Water Truck | 23,689 | 268 | 0.67 | 2810 | 2810 | 98 |
| 99 | 10-27-72 | 2T9 | BCRD | 1970 | Ford | 330 | V8 | 4 | 21,000 | Water Truck | 25,149 | 299 | 0.91 | 3129 | 3129 | 99 |
| 100 | 10-27-72 | 2T12 | BCRD | 1970 | Ford | 330 | V8 | 4 | 21,000 | Water Truck | 21,854 | 306 | 1.24 | 2406 | 2406 | 100 |

*Hi-lo means two-speed rear axle.

TABLE D-5 (Cont'd). VEHICLE DESCRIPTION AND FIFTH ROUND EMISSION RESULTS
"18" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF MARCH 1, 1973)

| | | | | | | | | | | | | Emissions Results | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans. Speeds* | GVW lbs. | Vehicle Type | Test Mileage | HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
| 101 | 10-26-72 | 4T23 | BCRD | 1970 | Ford | 330 | V8 | 5 | 21,000 | Water Truck | 41,594 | 531 | 4.46 | 873 | 803 | 101 |
| 102 | 10-17-72 | 7 | BMW | 1970 | Ford | 360 | V8 | 4 | 6,000 | Maint. | 26,432 | 476 | 3.28 | 1198 | 1194 | 102 |
| 103 | Over 50,000 miles | | | | | | | | | | | | | | | 103 |
| 104 | 10-24-72 | 2085 | CP&R | 1970 | Chev. | 307 | V8 | 3 | 7,500 | Maint. | 19,682 | 174 | 2.81 | 2217 | 1970 | 104 |
| 105 | 10-25-72 | 2122 | CP&R | 1970 | IHC | 392 | V8 | 5 | 25,500 | Maint. | 7,665 | 279 | 1.99 | 1812 | 1643 | 105 |
| 106 | 10-17-72 | 2119 | CP&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maint. | 7,228 | 171 | 1.74 | 1698 | 1667 | 106 |
| 107 | 10-22-72 | 2123 | CP&R | 1970 | Chev. | 307 | V8 | 3 | 7,500 | Maint. | 7,377 | 270 | 1.98 | 1629 | 1505 | 107 |
| 108 | 10-18-72 | 2168 | CP&R | 1970 | Chev | 307 | V8 | 4 | 10,000 | Maint. | 11,087 | 179 | 2.90 | 1650 | 1668 | 108 |
| 109 | 10-18-72 | 2169 | CP&R | 1970 | Chev | 307 | V8 | 4 | 10,000 | Maint. | 3,807 | 224 | 2.69 | 1592 | 1609 | 109 |
| 110 | 10-19-72 | 2081 | CP&R | 1970 | Chev | 307 | V8 | 3 | 7,500 | Maint. | 10,505 | 277 | 2.43 | 2107 | 1922 | 110 |
| 111 | 10-19-72 | 2082 | CP&R | 1970 | Chev. | 307 | V8 | 3 | 7,500 | Maint. | 9,715 | 179 | 2.30 | 1715 | 1563 | 111 |
| 112 | 11-9-72 | 2170 | CP&R | 1970 | Chev. | 307 | V8 | 4 | 10,000 | Maint. | 24,158 | 223 | 3.00 | 2009 | 1786 | 112 |
| 113 | 10-30-72 | 51342 | CPSB | 1971 | IHC | 392 | V8 | 6-auto | 24,000 | Construction | 8,935 | 280 | 3.38 | 947 | 947 | 113 |
| 114 | 10-31-72 | 51375 | CPSB | 1971 | IHC | 392 | V8 | 6-auto | 25,500 | Construction | 21,324 | 176 | 2.38 | 1165 | 1209 | 114 |
| 115 | 10-30-72 | 51383 | CPSB | 1971 | IHC | 392 | V8 | 6-auto | 25,500 | Construction | 22,949 | 265 | 1.66 | 1856 | 1856 | 115 |
| 116 | 10-27-72 | 4364 | Elmore | 1970 | GMC | 350 | V8 | 4 | 14,000 | Moving | 8,277 | 223 | 2.99 | 926 | 926 | 116 |
| 117 | 1-31-73 | 16 | Elmore | 1970 | GMC | 350 | V8 | 4 | 10,000 | Moving | 8,029 | 192 | 2.14 | 1680 | 1361 | 117 |
| 118 | 11-1-72 | 043247 | P. O. D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Mail | 11,489 | 218 | 1.92 | 1378 | 1199 | 118 |
| 119 | 10-31-72 | 043144 | P. O. D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Mail | 16,424 | 322 | 2.42 | 1235 | 1282 | 119 |
| 120 | 11-2-72 | 043327 | P. O. D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Mail | 11,773 | 267 | 2.00 | 1450 | 1328 | 120 |
| 121 | Not available this round | | | | | | | | | | | | | | | 121 |
| 122 | Not available this round | | | | | | | | | | | | | | | 122 |
| 123 | Not available this round | | | | | | | | | | | | | | | 123 |
| 124 | Not available this round | | | | | | | | | | | | | | | 124 |
| 125 | 11-1-72 | 043221 | P. O. D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Delivery | 13,379 | 294 | 2.43 | 1224 | 1065 | 125 |
| 126 | 11-2-72 | 042519 | P. O. D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Delivery | 8,992 | 251 | 2.13 | 1476 | 1352 | 126 |
| 127 | 11-4-72 | 1085 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 12,133 | 229 | 0.96 | 2557 | 2273 | 127 |
| 128 | 11-4-72 | 1086 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 21,257 | 604 | 0.56 | 2824 | 2510 | 128 |
| 129 | 11-4-72 | 1088 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 20,260 | 330 | 2.58 | 2343 | 2082 | 129 |
| 130 | Converted to LPG | | | | | | | | | | | | | | | 130 |
| 131 | 1-30-73 | 1347 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 20,150 | 198 | 2.33 | 1795 | 1436 | 131 |
| 132 | 1-31-73 | 1355 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 19,10 | 185 | 7.07 | 428 | 433 | 132 |
| 133 | Converted to LPG | | | | | | | | | | | | | | | 133 |
| 134 | 11-7-72 | 1348 | CPW | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 17,622 | 206 | 2.06 | 2135 | 1877 | 134 |
| 135 | 1-30-73 | 1345 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 19,710 | 696 | 4.93 | 2948 | 2358 | 135 |
| 136 | 11-6-72 | 1349 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 13,972 | 250 | 2.91 | 1963 | 2018 | 136 |
| 137 | 1-31-73 | 1365 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 17,129 | 314 | 1.87 | 2491 | 2518 | 137 |
| 138 | 11-6-72 | 1346 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 17,468 | 246 | 2.68 | 1928 | 1982 | 138 |
| 139 | 11-7-72 | 1346 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 15,406 | 245 | 1.94 | 1905 | 1674 | 139 |
| 140 | 11-9-72 | 1363 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 17,401 | 222 | 3.32 | 1659 | 1475 | 140 |
| 141 | 11-4-72 | 1087 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 19,476 | 336 | 3.95 | 1572 | 1397 | 141 |
| 142 | 11-30-72 | 496 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Rental | 58,868 | 206 | 1.17 | 2038 | 1773 | 142 |
| 143 | 11-14-72 | 497 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Rental | 44,653 | 263 | 2.63 | 1376 | 1087 | 143 |
| 144 | 11-21-72 | 503 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Rental | 38,980 | 273 | 1.92 | 2040 | 1785 | 144 |
| 145 | 11-13-72 | 3 | JFC | 1971 | Chev. | 350 | V8 | 4 | 24,000 | Delivery | 30,076 | 301 | 1.42 | 2034 | 1637 | 145 |
| 146 | 11-20-72 | 1 | JFC | 1971 | Chev. | 350 | V8 | 4 | 24,000 | Delivery | 33,132 | 305 | 2.52 | 1419 | 1164 | 146 |
| 147 | 11-20-72 | 5 | JFC | 1971 | Chev. | 350 | V8 | 4 | 24,000 | Delivery | 30,487 | 227 | 1.74 | 1246 | 1048 | 147 |
| 148 | 11-13-72 | 2 | JFC | 1971 | Chev. | 350 | V8 | 4 | 24,000 | Delivery | 34,605 | 547 | 2.94 | 1288 | 1051 | 148 |
| 149 | 11-13-72 | 7 | JFC | 1971 | Chev. | 350 | V8 | 4 | 24,000 | Delivery | 31,665 | 265 | 2.45 | 468 | 374 | 149 |
| 150 | 11-13-72 | 4 | JFC | 1971 | Chev. | 350 | V8 | 4 | 24,000 | Delivery | 29,442 | 206 | 1.28 | 2279 | 1860 | 150 |
| 151 | 11-9-72 | 276-15T | Southern | 1971 | Chev. | 427 | V8 | 5 | 32,500 | Moving Co. | 36,665 | 193 | 1.56 | 2308 | 1895 | 151 |
| 152 | 11-20-72 | 6 | JFC | 1971 | Chev. | 350 | V8 | 4 | 24,000 | Delivery | 29,637 | 209 | 1.38 | 1758 | 1435 | 152 |

*Hi-lo means two-speed rear axle.

TABLE D-6. VEHICLE DESCRIPTION AND SIXTH ROUND EMISSION RESULTS
"24" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF AUGUST 1, 1973)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans. Speeds* | GVW lbs. | Vehicle Type | Test Mileage | Emissions Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2-1-73 | PO41001 | P.O.D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Van | 17,497 | 260 | 1.61 | 2353 | 1807 | 1 |
| 2 | 2-5-73 | PO40999 | P.O.D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Van | 16,873 | 338 | 1.92 | 1679 | 1595 | 2 |
| 3 | 2-2-73 | PO40997 | P.O.D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Van | 19,195 | 318 | 1.94 | 1976 | 1539 | 3 |
| 4 | 2-2-73 | PO41000 | P.O.D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Van | 20,695 | 306 | 2.44 | 1753 | 1366 | 4 |
| 5 | 2-1-73 | PO41002 | P.O.D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Van | 11,826 | 274 | 1.82 | 1276 | 980 | 5 |
| 6 | 2-12-73 | 353 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 36,409 | 154 | 1.52 | 2023 | 1938 | 6 |
| 7 | 2-13-73 | 349 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 35,114 | 187 | 3.95 | 1170 | 984 | 7 |
| 8 | 2-12-73 | 351 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 35,874 | 237 | 2.54 | 2323 | 2225 | 8 |
| 9 | 2-13-73 | 350 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 34,999 | 161 | 2.62 | 1962 | 1670 | 9 |
| 10 | 3-8-73 | 352 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 37,971 | 170 | 3.26 | 1762 | 1811 | 10 |
| 11 | 6-25-73 | 24340 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 56,313 | 319 | 1.78 | 1446 | 1486 | 11 |
| 12 | 3-26-73 | 24341K | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 44,863 | 173 | 1.06 | 1143 | 949 | 12 |
| 13 | 3-27-73 | 24343 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 45,967 | 417 | 2.77 | 1101 | 1042 | 13 |
| 14 | 3-27-73 | 24342 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 48,629 | 339 | 2.60 | 957 | 905 | 14 |
| 15 | 2-6-73 | 56 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 50,481 | 291 | 1.55 | 1606 | 1606 | 15 |
| 16 | 2-14-73 | 53 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 52,762 | 343 | 2.15 | 2060 | 1648 | 16 |
| 17 | 2-6-73 | 55 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 3,620 | 219 | 1.26 | 1805 | 1805 | 17 |
| 18 | 2-7-73 | 6 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 22,000 | School Bus | 27,364 | 172 | 1.51 | 2387 | 2413 | 18 |
| 19 | 2-7-73 | 54 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 22,000 | School Bus | 33,347 | 217 | 1.62 | 1659 | 1677 | 19 |
| 20 | 3-12-73 | 72341 | Hertz | 1970 | Ford | 300 | 6 | 3-auto | 10,000 | Stake | 24,342 | 161 | 1.13 | 2613 | 2762 | 20 |
| 21 | 3-29-73 | 72218 | Hertz | 1970 | Ford | 240 | 6 | 3-auto | 7,500 | Pick-up | 37,915 | 205 | 0.65 | 1909 | 1894 | 21 |
| 22 | 2-15-73 | 5131 | C.P.S.B. | 1971 | IHC | 392 | V8 | 3-auto | 25,500 | Line | 22,960 | 249 | 2.61 | 1808 | 1464 | 22 |
| 23 | 2-23-73 | 5132 | C.P.S.B. | 1970 | IHC | 392 | V8 | 3-auto | 25,500 | Line | 14,517 | 326 | 2.13 | 466 | 392 | 23 |
| 24 | 2-15-73 | 5136 | C.P.S.B. | 1971 | IHC | 392 | V8 | 3-auto | 25,500 | Line | 20,935 | 320 | 2.34 | 2147 | 1827 | 24 |
| 25 | 3-6-73 | 5141 | C.P.S.B. | 1971 | IHC | 392 | V8 | 3-auto | 25,500 | Line | 4,894 | 332 | 2.38 | 1773 | 1473 | 25 |
| 26 | 2-19-73 | 4952 | C.P.S.B. | 1971 | IHC | 304 | V8 | 4 | 14,000 | Van | 22,711 | 270 | 1.26 | 2889 | 2646 | 26 |
| 27 | 2-16-73 | 6615 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 15,949 | 225 | 0.67 | 3164 | 2547 | 27 |
| 28 | 2-16-73 | 6616 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 18,359 | 238 | 0.57 | 3055 | 2459 | 28 |
| 29 | 2-20-73 | 4824 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 2,103 | 151 | 0.35 | 3265 | 2645 | 29 |
| 30 | 3-2-73 | 4726 | C.P.S.B. | 1970 | Chev. | 292 | 6 | 4 | 9,000 | Service | 35,124 | 252 | 1.17 | 2885 | 2537 | 30 |
| 31 | 3-1-73 | 4728 | C.P.S.B. | 1970 | Chev. | 250 | 6 | 4 | 7,500 | Service | 45,359 | 228 | 1.53 | 2951 | 2623 | 31 |
| 32 | 2-27-73 | 47290 | C.P.S.B. | 1970 | Chev. | 250 | 6 | 4 | 7,500 | Service | 20,084 | 295 | 1.57 | 2409 | 2279 | 32 |
| 33 | | 671 | Brown Exp. | 1971 | Ford | 300 | 6 | 5 | 24,000 | Van | Transferred to another city | | | | | 33 |
| 34 | | 672 | Brown Exp. | 1971 | Ford | 300 | 6 | 5 | 24,000 | Van | Transferred to another city | | | | | 34 |
| 35 | | 673 | Brown Exp. | 1971 | Ford | 300 | 6 | 5 | 24,000 | Van | Transferred to another city | | | | | 35 |
| 36 | 2-27-73 | 4727 | C.P.S.B. | 1970 | Chev. | 250 | 6 | 4 | 7,500 | Service | 16,772 | 266 | 2.02 | 2118 | 1853 | 36 |
| 37 | 3-1-73 | 4730 | C.P.S.B. | 1970 | Chev. | 250 | 6 | 4 | 7,500 | Service | 22,579 | 229 | 1.08 | 2911 | 2588 | 37 |
| 38 | 2-19-73 | 4951 | C.P.S.D. | 1970 | IHC | 304 | V8 | 4 | 14,000 | Service | 33,532 | 283 | 1.18 | 2546 | 2332 | 38 |
| 39 | 2-23-73 | 8810 | C.P.S.B | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 35,604 | 216 | 0.60 | 2733 | 2298 | 39 |
| 40 | 2-22-73 | 8811 | C P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 31,686 | 179 | 0.39 | 3667 | 3311 | 40 |
| 41 | 2-22-73 | 6855 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 29,942 | 204 | 0.66 | 3266 | 2949 | 41 |
| 42 | 2-21-73 | 6617 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Wrecker | 7,881 | 192 | 0.40 | 2956 | 2669 | 42 |
| 43 | 2-21-73 | 6856 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 24,065 | 131 | 0.40 | 3514 | 3173 | 43 |
| 44 | 3-6-73 | 4671 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Stake | 16,459 | 210 | 1.04 | 3001 | 2494 | 44 |
| 45 | 2-26-73 | 6857 | C.P.S.B | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 28,906 | 253 | 3.65 | 2186 | 2040 | 45 |
| 46 | 3-5-73 | 4950 | C.P.S.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Bucket Truck | 51,372 | 300 | 2.26 | 2394 | 2461 | 46 |
| 47 | 3-19-73 | 312 | C.W.B | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 35,643 | 742 | 1.73 | 1768 | 1571 | 47 |
| 48 | 6-20-73 | 314 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 16,767 | 233 | 1.93 | 2204 | 2213 | 48 |
| 49 | 3-13-73 | 301 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 10,000 | Crew Truck | 17,760 | 253 | 1.82 | 1528 | 1528 | 49 |
| 50 | 6-20-73 | 302 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 10,000 | Crew Truck | 19,100 | 231 | 2.18 | 2017 | 2073 | 50 |

* Hi-lo means two-speed rear axle.

TABLE D-6 (Cont'd). VEHICLE DESCRIPTION AND SIXTH ROUND EMISSION RESULTS
"24" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF AUGUST 1, 1973)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans. Speeds* | GVW lbs. | Vehicle Type | Test Mileage | Emissions Results: HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 | 3-2-73 | 93 | Pearl | 1970 | IHC | 304 | V8 | 3 | 7,500 | Delivery | 27,268 | 268 | 1.90 | 2548 | 2240 | 51 |
| 52 | | 105 | Pearl | 1970 | GMC | 292 | 6 | 3 | 7,500 | Pickup | Over 50,000 miles | | | | | 52 |
| 53 | 2-28-73 | 106 | Pearl | 1970 | Dodge | 318 | V8 | 3 | 7,500 | Delivery | 25,655 | 284 | 1.51 | 2687 | 2426 | 53 |
| 54 | | 122 | Pearl | 1970 | Ford | 300 | 6 | 3 | 7,500 | Pickup | Over 50,000 miles | | | | | 54 |
| 55 | 3-14-73 | 311 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 15,370 | 270 | 1.80 | 1453 | 1392 | 55 |
| 56 | 3-15-73 | 313 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 6,116 | 203 | 1.35 | 1548 | 1294 | 56 |
| 57 | 3-19-73 | 315 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 15,911 | 192 | 2.01 | 2400 | 2133 | 57 |
| 58 | 3-15-73 | 316 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 9,532 | 704 | 1.81 | 1604 | 1543 | 58 |
| 59 | 3-15-73 | 317 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 14,800 | 234 | 2.00 | 2283 | 2196 | 59 |
| 60 | 3-12-73 | 253 | C. W. B. | 1970 | Chev | 307 | V8 | 4 | 7,500 | Service | 12,166 | 2082 | 2.74 | 559 | 591 | 60 |
| 61 | 3-13-73 | 254 | C. W. B. | 1970 | Chev | 307 | V8 | 4 | 7,500 | Service | 19,731 | 2006 | 2.83 | 856 | 856 | 61 |
| 62 | 3-15-73 | 391 | C. W. B. | 1970 | Chev | 366 | V8 | 5 | 3,200 | Crane | 5,636 | 202 | 1.25 | 894 | 860 | 62 |
| 63 | 3-14-73 | 392 | C. W. B. | 1970 | Chev | 366 | V8 | 5 | 3,200 | Crane | 4,635 | 184 | 2.19 | 406 | 389 | 63 |
| 64 | 3-8-73 | 582 | Red Arrow | 1970 | Dodge | 318 | V8 | 4 | 24,000 | Freight | 52,981 | 2857 | 1.73 | 1989 | 2045 | 64 |
| 65 | 3-8-73 | 581 | Red Arrow | 1970 | Dodge | 318 | V8 | 4 | 24,000 | Freight | 29,287 | 1487 | 1.86 | 1952 | 2007 | 65 |
| 66 | 3-12-73 | 251 | C. W. B. | 1970 | Dodge | 318 | V8 | 3-auto | 7,500 | Meter | 19,634 | 265 | 2.05 | 1902 | 2010 | 66 |
| 67 | 3-12-73 | 252 | C. W. B. | 1970 | Dodge | 318 | V8 | 3-auto | 7,500 | Service | 15,108 | 327 | 2.16 | 1792 | 1894 | 67 |
| 68 | 3-14-73 | 360 | C. W. B. | 1970 | Ford | 361 | V8 | 5 | 25,500 | Dump | 12,015 | 242 | 2.65 | 1504 | 1440 | 68 |
| 69 | 3-6-73 | 5133 | C. P. S. B. | 1970 | IHC | 392 | V8 | 6-auto | 25,500 | Line | 23,258 | 190 | 1.31 | 2316 | 1925 | 69 |
| 70 | 3-5-73 | 5140 | C. P. S. B. | 1970 | IHC | 392 | V8 | 6-auto | 25,500 | Line | 40,370 | 291 | 3.17 | 1467 | 1493 | 70 |
| 71 | 3-6-73 | 5097 | C. P. S. B. | 1971 | IHC | 345 | V8 | 5 | 25,000 | Digger | 24,177 | 242 | 1.74 | 2679 | 2226 | 71 |
| 72 | 3-6-73 | 5106 | C. P. S. B. | 1971 | IHC | 345 | V8 | 5 | 25,000 | Digger | 25,777 | 228 | 0.99 | 2752 | 2287 | 72 |
| 73 | 2-20-73 | 5130 | C. P. S. B. | 1970 | IHC | 392 | V8 | 6-auto | 25,500 | Line | 30,051 | 285 | 2.96 | 1429 | 1157 | 73 |
| 74 | 2-26-73 | 5135 | C. P. S. B. | 1970 | IHC | 392 | V8 | 6-auto | 25,500 | Line | 23,910 | 2062 | 2.26 | 1388 | 1295 | 74 |
| 75 | 3-13-73 | M-78 | State Hos. | 1969 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 9,643 | 247 | 2.25 | 2373 | 1849 | 75 |
| 76 | 3-31-73 | M-80 | State Hos. | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 4,196 | 213 | 2.03 | 2048 | 1628 | 76 |
| 77 | 3-31-73 | M-98 | State Hos. | 1969 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 4,806 | 220 | 1.82 | 2494 | 1983 | 77 |
| 78 | 3-31-73 | SH-680 | State Hos. | 1970 | Ford | 302 | V8 | 3-auto | 6,800 | Van | 12,765 | 235 | 1.05 | 2216 | 1761 | 78 |
| 79 | 6-26-73 | SH-699 | State Hos. | 1970 | GMC | 401 | V6 | 5 | 27,000 | Bus | 21,490 | 346 | 5.60 | 1097 | 1076 | 79 |
| 80 | | 1029 | Lone Star | 1970 | Chev | 307 | V8 | 4 | 6,600 | Pickup | Over 50,000 miles | | | | | 80 |
| 81 | | 134 | Herder | 1970 | Ford | 300 | 6 | 5 | 21,000 | Freight | Over 50,000 miles | | | | | 81 |
| 82 | 3-7-73 | 135 | Herder | 1970 | Ford | 300 | 6 | 5 | 21,000 | Freight | 28,291 | 143 | 0.35 | 2360 | 2152 | 82 |
| 83 | 3-7-73 | 239 | Herder | 1970 | Ford | 361 | V8 | 5 | 22,000 | Freight | 28,973 | 291 | 1.69 | 2425 | 2212 | 83 |
| 84 | 3-7-73 | 240 | Herder | 1970 | Ford | 361 | V8 | 5 | 22,000 | Freight | 34,916 | 364 | 2.79 | 1919 | 1750 | 84 |
| 85 | | 250 | C. W. B. | 1970 | Chev | 307 | V8 | 2-auto | 7,500 | Service | Wrecked | | | | | 85 |
| 86 | 3-31-73 | L-41 | State Hos. | 1970 | Dodge | 225 | 6 | 3-auto | 10,000 | Laundry | 6,462 | 196 | 2.09 | 1874 | 1491 | 86 |
| 87 | 6-26-73 | M-77 | State Hos. | 1970 | Dodge | 225 | 6 | 3-auto | 10,000 | Grounds | 6,605 | 268 | 2.30 | 2233 | 2331 | 87 |
| 88 | 4-7-73 | M-87 | State Hos. | 1970 | Dodge | 225 | 6 | 3-auto | 7,500 | Service | 13,925 | 237 | 2.09 | 2140 | 2049 | 88 |
| 89 | 6-26-73 | M-90 | State Hos. | 1970 | Dodge | 225 | 6 | 3-auto | 10,000 | Maint. | 10,316 | 328 | 2.53 | 2332 | 2435 | 89 |
| 90 | 3-31-73 | M-95 | State Hos. | 1970 | Dodge | 225 | 6 | 3-auto | 10,000 | Grounds | 5,830 | 187 | 1.96 | 2223 | 1732 | 90 |
| 91 | 3-23-73 | 2179 | City P&R | 1970 | IHC | 345 | V8 | 4 | 19,000 | Water truck | 2,732 | 192 | 1.01 | 1891 | 1931 | 91 |
| 92 | 3-21-73 | 2120 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maint. | 11,819 | 220 | 2.04 | 1675 | 1457 | 92 |
| 93 | 3-9-73 | 27 | B. M. W. | 1970 | Ford | 360 | V8 | 4 | 6,100 | Repair | 30,084 | 335 | 3.37 | 1341 | 1425 | 93 |
| 94 | 3-20-73 | 2073 | City P&R | 1970 | Chev | 292 | 6 | 3-auto | 14,000 | Maint. | 6,534 | 150 | 0.58 | 3180 | 2544 | 94 |
| 95 | 3-21-73 | 2121 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maint. | 6,179 | 277 | 2.71 | 1886 | 1641 | 95 |
| 96 | 3-28-73 | 4T1 | B. C. R. D. | 1970 | Ford | 240 | 6 | 3 | 7,500 | Maint. | 30,748 | 302 | 2.37 | 1607 | 1526 | 96 |
| 97 | 3-28-73 | 4T16 | B. C. R. D. | 1970 | Ford | 240 | 6 | 3 | 7,500 | Maint. | 18,272 | 318 | 2.42 | 1364 | 1295 | 97 |
| 98 | 3-29-73 | 1T22 | B. C. R. D. | 1970 | Ford | 330 | V8 | 5 | 21,000 | Water truck | 29,582 | 213 | 0.88 | 2656 | 2636 | 98 |
| 99 | 3-29-73 | 2T9 | B. C. R. D. | 1970 | Ford | 330 | V8 | 4 | 21,000 | Water truck | 18,272 | 272 | 1.04 | 2968 | 2946 | 99 |
| 100 | 3-29-73 | 2T12 | B. C. R. D. | 1970 | Ford | 330 | V8 | 4 | 21,000 | Water truck | 25,999 | 311 | 1.61 | 1952 | 1938 | 100 |

*Hi-lo means two-speed rear axle.

TABLE D-6 (Cont'd). VEHICLE DESCRIPTION AND SIXTH ROUND EMISSION RESULTS
"24" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF AUGUST 1, 1973)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans. Speeds* | GVW lbs. | Vehicle Type | Test Mileage | Emission Results: HC, ppm | Emission Results: CO, % | Emission Results: NO, ppm Obs. | Emission Results: NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 101 | 3-28-73 | 4T23 | B. C. R. D. | 1970 | Ford | 330 | V8 | 5 | 21,000 | Water truck | 34,812 | 547 | 4.57 | 1032 | 980 | 101 |
| 102 | 3-9-73 | 7 | B. M. W. | 1970 | Ford | 360 | V8 | 4 | 6,100 | Maint. | 33,362 | 283 | 3.37 | 1053 | 1119 | 102 |
| 103 | | 34 | Southern | 1970 | GMC | 427 | V8 | 5 | 32,500 | Tractor | Over 50,000 miles | | | | | 103 |
| 104 | 3-22-73 | 2085 | City P&R | 1970 | Chev. | 307 | V8 | 3 | 7,500 | Maint. | 24,317 | 208 | 2.60 | 2195 | 2153 | 104 |
| 105 | 3-26-73 | 2122 | City P&R | 1970 | IHC | 392 | V8 | 5 | 25,500 | Maint. | 9,454 | 266 | 2.36 | 1712 | 1431 | 105 |
| 106 | 3-21-73 | 2119 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maint. | 8,809 | 164 | 2.74 | 1610 | 1400 | 106 |
| 107 | 3-23-73 | 2123 | City P&R | 1970 | Chev. | 307 | V8 | 3 | 7,500 | Maint. | 8,885 | 200 | 2.03 | 1108 | 1132 | 107 |
| 108 | 3-22-73 | 2168 | City P&R | 1970 | Chev. | 307 | V8 | 4 | 10,000 | Maint. | 13,801 | 203 | 3.25 | 1561 | 1531 | 108 |
| 109 | 3-26-73 | 2169 | City P&R | 1970 | Chev. | 307 | V8 | 4 | 10,000 | Maint. | 7,128 | 224 | 2.40 | 1615 | 1342 | 109 |
| 110 | 3-20-73 | 2081 | City P&R | 1970 | Chev. | 307 | V8 | 3 | 7,500 | Maint. | 13,431 | 224 | 2.42 | 1789 | 1431 | 110 |
| 111 | 3-20-73 | 2082 | City P&R | 1970 | Chev. | 307 | V8 | 3 | 7,500 | Maint. | 12,230 | 170 | 2.25 | 1973 | 1578 | 111 |
| 112 | 3-22-73 | 2170 | City P&R | 1970 | Chev. | 307 | V8 | 4 | 10,000 | Maint. | 28,860 | 315 | 3.04 | 1813 | 1779 | 112 |
| 113 | 4-3-73 | 51346 | C. P. S. B. | 1971 | IHC | 392 | V8 | 6-auto | 24,000 | Const. | 10,804 | 291 | 2.79 | 1380 | 1082 | 113 |
| 114 | 4-3-73 | 51375 | C. P. S. B. | 1971 | IHC | 392 | V8 | 6-auto | 25,500 | Const. | 26,186 | 182 | 1.88 | 1513 | 1186 | 114 |
| 115 | 4-3-73 | 51383 | C. P. S. B. | 1971 | IHC | 392 | V8 | 6-auto | 25,500 | Const. | 29,036 | 244 | 2.09 | 1480 | 1162 | 115 |
| 116 | | 17 | Elmore | 1970 | GMC | 350 | V8 | 4 | 14,000 | Moving | No sixth round test | | | | | 116 |
| 117 | 6-28-73 | 16 | Elmore | 1970 | GMC | 350 | V8 | 4 | 10,000 | Moving | 10,600 | 174 | 1.18 | 1634 | 1641 | 117 |
| 118 | 4-4-73 | 043247 | U. S. P. O. | 1970 | Dodge | 318 | V8 | 3-auto | 7,000 | Mail | 14,461 | 225 | 1.61 | 1518 | 1141 | 118 |
| 119 | 6-21-73 | 043144 | U. S. P. O. | 1970 | Dodge | 318 | V8 | 3-auto | 7,000 | Mail | 22,075 | 258 | 2.17 | 1467 | 1473 | 119 |
| 120 | 4-4-73 | 043327 | U. S. P. O. | 1970 | Dodge | 318 | V8 | 3-auto | 7,000 | Mail | 15,521 | 308 | 2.09 | 1223 | 979 | 120 |
| 121 | 7-16-73 | 98 | FACS | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 41,371 | 265 | 4.63 | 1045 | 1111 | 121 |
| 122 | 7-17-73 | 101 | FACS | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 36,071 | 239 | 1.57 | 2692 | 2777 | 122 |
| 123 | | 102 | FACS | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | No sixth round test | | | | | 123 |
| 124 | 7-18-73 | 105 | FACS | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 29,341 | 104 | 0.796 | 1137 | 1137 | 124 |
| 125 | 4-4-73 | PO043221 | P. O. D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Delivery | 16,179 | 307 | 2.24 | 1309 | 984 | 125 |
| 126 | 4-5-73 | 042519 | U. S. P. O. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Delivery | 11,397 | 236 | 1.87 | 1457 | 1166 | 126 |
| 127 | 4-7-73 | 1085 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 15,626 | 240 | 1.50 | 2639 | 2527 | 127 |
| 128 | 6-20-73 | 1086 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 29,993 | 845 | 1.48 | 2549 | 2645 | 128 |
| 129 | 4-7-73 | 1088 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 18,209 | 313 | 2.81 | 1833 | 1755 | 129 |
| 130 | | 1353 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | Converted to LPG | | | | | 130 |
| 131 | 5-3-73 | 1347 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 22,875 | 258 | 3.85 | 1291 | 1110 | 131 |
| 132 | 5-4-73 | 1355 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 21,571 | 450 | 8.04 | 317 | 285 | 132 |
| 133 | | 1340 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | Converted to LPG | | | | | 133 |
| 134 | 5-4-73 | 1348 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 23,906 | 237 | 4.96 | 815 | 806 | 134 |
| 135 | 7-5-73 | 1345 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 24,205 | 519 | 8.23 | 367 | 399 | 135 |
| 136 | 5-3-73 | 1349 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 19,613 | 232 | 1.74 | 2333 | 2006 | 136 |
| 137 | 5-2-73 | 1365 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 19,910 | 367 | 2.45 | 2190 | 2124 | 137 |
| 138 | 5-2-73 | 1346 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 23,524 | 254 | 4.54 | 1223 | 1186 | 138 |
| 139 | 7-5-73 | 1364 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 23,178 | 233 | 1.93 | 1804 | 1959 | 139 |
| 140 | 5-2-73 | 1363 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 17,401 | 350 | 3.71 | 1342 | 1302 | 140 |
| 141 | 4-7-73 | 1087 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 24,688 | 393 | 4.53 | 1379 | 1274 | 141 |
| 142 | | 496 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Tractor | Over 50,000 miles | | | | | 142 |
| 143 | 6-19-73 | 497 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Tractor | 53,560 | 324 | 2.65 | 1143 | 1148 | 143 |
| 144 | 7-2-73 | 503 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Tractor | 47,282 | 319 | 1.84 | 2373 | 2382 | 144 |
| 145 | 5-7-73 | 3 | JFC | 1971 | Chev. | 350 | V8 | 4 | 24,000 | Delivery | 38,190 | 360 | 1.52 | 2575 | 2585 | 145 |
| 146 | 6-18-73 | 1 | JFC | 1971 | Chev. | 350 | V8 | 4 | 24,000 | Delivery | 42,632 | 318 | 3.63 | 823 | 838 | 146 |
| 147 | 5-7-73 | 5 | JFC | 1971 | Chev. | 350 | V8 | 4 | 24,000 | Delivery | 40,756 | 246 | 1.97 | 1160 | 1082 | 147 |
| 148 | 6-25-73 | 2 | JFC | 1971 | Chev. | 350 | V8 | 4 | 24,000 | Delivery | 50,560 | 344 | 1.49 | 1323 | 1351 | 148 |
| 149 | 5-7-73 | 7 | JFC | 1971 | Chev. | 350 | V8 | 4 | 24,000 | Delivery | 39,855 | 892 | 2.52 | 1047 | 921 | 149 |
| 150 | 6-19-73 | 4 | JFC | 1971 | Chev. | 350 | V8 | 4 | 24,000 | Delivery | 37,814 | 375 | 1.86 | 1364 | 1369 | 150 |
| 151 | | 15T | Southern | 1971 | Chev. | 427 | V8 | 5 | 32,500 | Moving | No sixth round test | | | | | 151 |
| 152 | 5-7-73 | 6 | JFC | 1971 | Chev. | 350 | V8 | 4 | 24,000 | Delivery | 39,976 | 322 | 1.94 | 2646 | 2657 | 152 |

*Hi-lo means two-speed rear axle.

TABLE D-7. VEHICLE DESCRIPTION AND SEVENTH ROUND EMISSION RESULTS
"30" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF FEBRUARY 1, 1974)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans. Speeds* | GVW lbs. | Vehicle Type | Test Mileage | Emission Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9-12-73 | PO41001 | P. O. D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Van | 21,930 | 443 | 2.18 | 1122 | 1126 | 1 |
| 2 | 9-12-73 | PO40999 | P. O. D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Van | 20,771 | 338 | 1.95 | 1732 | 1732 | 2 |
| 3 | 9-11-73 | PO40997 | P. O. D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Van | 24,079 | 313 | 1.87 | 941 | 951 | 3 |
| 4 | 9-13-73 | PO41000 | P. O. D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Van | 26,915 | 323 | 2.81 | 1137 | 1141 | 4 |
| 5 | 9-13-73 | PO41002 | P. O. D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Van | 14,413 | 377 | 1.99 | 752 | 755 | 5 |
| 6 | 9-24-73 | 353 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 47,459 | 253 | 1.77 | 1928 | 1936 | 6 |
| 7 | 9-25-73 | 349 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 44,057 | 295 | 4.23 | 1067 | 1067 | 7 |
| 8 | 9-11-73 | 351 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 45,548 | 303 | 3.11 | 1920 | 1955 | 8 |
| 9 | 9-17-73 | 350 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 44,916 | 352 | 4.42 | 1343 | 1317 | 9 |
| 10 | 9-24-73 | 352 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 47,464 | 228 | 3.85 | 1134 | 1134 | 10 |
| 11 | | 24340 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | Over 50,000 mi. | | | | | 11 |
| 12 | 11-6-73 | 24341K | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 51,197 | 220 | 1.32 | 1340 | 1364 | 12 |
| 13 | 11-6-73 | 24343 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 55,472 | 1901 | 1.83 | 1513 | 1540 | 13 |
| 14 | 11-2-73 | 24342 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 56,181 | 670 | 2.74 | 998 | 1009 | 14 |
| 15 | | 56 | N. S. S. D | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | Over 50,000 mi. | | | | | 15 |
| 16 | | 53 | N. S. S. D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | Over 50,000 mi. | | | | | 16 |
| 17 | | 55 | N. S. S. D | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | Over 50,000 mi. | | | | | 17 |
| 18 | 9-14-73 | 6 | N. S. S. D. | 1970 | IHC | 345 | V8 | 5 | 22,000 | School Bus | 34,340 | 2016 | 1.53 | 1994 | 2002 | 18 |
| 19 | 9-14-73 | 54 | N. S. S. D. | 1970 | IHC | 345 | V8 | 5 | 22,000 | School Bus | 43,309 | 313 | 1.67 | 2028 | 2035 | 19 |
| 20 | | 72341 | Hertz | 1970 | Ford | 300 | 6 | 3 auto | 10,000 | Stake | Transferred to another city | | | | | 20 |
| 21 | | 72218 | Hertz | 1970 | Ford | 240 | 6 | 3 auto | 7,500 | Pickup | Transferred to another city | | | | | 21 |
| 22 | 9-21-73 | 5131 | C. P. S. B. | 1971 | IHC | 392 | V8 | 3-auto | 25,500 | Line | 28,756 | 365 | 3.38 | 1403 | 1403 | 22 |
| 23 | 10-10-73 | 5132 | C. P. S. B. | 1970 | IHC | 392 | V8 | 3-auto | 25,500 | Line | 18,415 | 271 | 6.46 | 294 | 300 | 23 |
| 24 | 9-21-73 | 5136 | C. P. S. B. | 1971 | IHC | 392 | V8 | 3-auto | 25,500 | Line | 29,758 | 267 | 2.60 | 651 | 654 | 24 |
| 25 | 10-8-73 | 5141 | C. P. S. B. | 1971 | IHC | 392 | V8 | 3-auto | 25,500 | Line | 5,945 | 175 | 2.09 | 1041 | 1045 | 25 |
| 26 | 10-1-73 | 4952 | C. P. S. B. | 1971 | IHC | 304 | V8 | 4 | 14,000 | Van | 26,522 | 361 | 1.61 | 2500 | 2528 | 26 |
| 27 | 9-27-73 | 6615 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 20,742 | 306 | 1.13 | 2669 | 2669 | 27 |
| 28 | 9-27-73 | 6616 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 23,420 | 262 | 0.54 | 2722 | 2722 | 28 |
| 29 | 9-20-73 | 4824 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 26,435 | 235 | 0.41 | 3228 | 3328 | 29 |
| 30 | 10-2-73 | 4726 | C. P. S. B. | 1970 | Chev | 292 | 6 | 4 | 9,000 | Service | 44,770 | 251 | 2.28 | 2234 | 2218 | 30 |
| 31 | 9-20-73 | 4728 | C. P. S. B. | 1970 | Chev | 250 | 6 | 4 | 7,500 | Service | 59,194 | 308 | 2.08 | 2084 | 2149 | 31 |
| 32 | 9-17-73 | 4729 | C. P. S. B. | 1970 | Chev | 250 | 6 | 4 | 7,500 | Service | 24,972 | 277 | 1.45 | 2294 | 2372 | 32 |
| 33 | | 671 | Brown Exp. | 1971 | Ford | 300 | 6 | 5 | 24,000 | Van | Transferred to another city | | | | | 33 |
| 34 | | 672 | Brown Exp. | 1971 | Ford | 300 | 6 | 5 | 24,000 | Van | Transferred to another city | | | | | 34 |
| 35 | | 673 | Brown Exp. | 1971 | Ford | 300 | 6 | 5 | 24,000 | Van | Transferred to another city | | | | | 35 |
| 36 | 9-17-73 | 4727 | C. P. S. B. | 1970 | Chev | 250 | 6 | 4 | 7,500 | Service | 19,952 | 290 | 2.08 | 1876 | 1940 | 36 |
| 37 | | 4730 | C. P. S. B. | 1970 | Chev | 250 | 6 | 4 | 7,500 | Service | Wrecked | | | | | 37 |
| 38 | 9-18-73 | 4951 | C. P. S. B. | 1970 | IHC | 304 | V8 | 4 | 14,000 | Service | 37,925 | 367 | 1.63 | 2056 | 2099 | 38 |
| 39 | 9-25-73 | 8810 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 45,731 | 286 | 0.70 | 3391 | 3391 | 39 |
| 40 | 9-19-73 | 8811 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 40,878 | 261 | 0.84 | 2928 | 3139 | 40 |
| 41 | 10-9-73 | 6855 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 36,003 | 222 | 0.55 | 2674 | 2722 | 41 |
| 42 | 9-28-73 | 6617 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Wrecker | 11,688 | 235 | 0.53 | 3017 | 3029 | 42 |
| 43 | 10-11-73 | 6856 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 31,283 | 217 | 0.52 | 3576 | 3769 | 43 |
| 44 | 10-11-73 | 4671 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Stake | 21,724 | 210 | 0.87 | 2230 | 2275 | 44 |
| 45 | 9-19-73 | 6857 | C. P. S. B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 35,640 | 212 | 0.62 | 3168 | 3396 | 45 |
| 46 | | 4950 | C. P. S. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Bucket Tr. | Over 50,000 miles | | | | | 46 |
| 47 | 10-17-73 | 312 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 45,541 | 248 | 1.54 | 2130 | 2002 | 47 |
| 48 | 10-18-73 | 314 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 17,967 | 267 | 1.66 | 2155 | 1918 | 48 |
| 49 | 10-15-73 | 301 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 10,000 | Crew Truck | 22,486 | 240 | 2.43 | 1719 | 1822 | 49 |
| 50 | 10-15-73 | 302 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 10,000 | Crew Truck | 21,919 | 501 | 4.96 | 1060 | 1124 | 50 |

*Hi-lo means two-speed rear axle.

TABLE D-7 (Cont'd). VEHICLE DESCRIPTION AND SEVENTH ROUND EMISSION RESULTS
"30" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF FEBRUARY 1, 1974)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans. Speeds* | GVW lbs. | Vehicle Type | Test Mileage | Emissions Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 | 10-22-73 | 93 | Pearl | 1970 | IHC | 304 | V8 | 3 | 7,500 | Delivery | 38,100 | 249 | 1.79 | 1906 | 1778 | 51 |
| 52 | | 105 | Pearl | 1970 | GMC | 292 | 6 | 3 | 7,500 | Pickup | Over 50,000 miles | | | | | 52 |
| 53 | 10-22-73 | 106 | Pearl | 1970 | Dodge | 318 | V8 | 3 | 7,500 | Delivery | 32,375 | 292 | 1.63 | 2536 | 2366 | 53 |
| 54 | | 122 | Pearl | 1970 | Ford | 300 | 6 | 3 | 7,500 | Pickup | Over 50,000 miles | | | | | 54 |
| 55 | 10-15-73 | 311 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 20,610 | 296 | 1.66 | 1920 | 2035 | 55 |
| 56 | 10-17-73 | 313 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 28,461 | 267 | 2.42 | 1683 | 1582 | 56 |
| 57 | 11-9-73 | 315 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 19,684 | 244 | 1.75 | 2271 | 2228 | 57 |
| 58 | 10-16-73 | 316 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 11,858 | 249 | 1.45 | 2217 | 2150 | 58 |
| 59 | 10-16-73 | 317 | C. W. B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 18,270 | 254 | 1.32 | 2652 | 2572 | 59 |
| 60 | 10-18-73 | 253 | C. W. B. | 1970 | Chev | 307 | V8 | 4 | 7,500 | Service | 15,104 | 213 | 3.09 | 1659 | 1609 | 60 |
| 61 | 10-18-73 | 254 | C. W. B. | 1970 | Chev | 307 | V8 | 4 | 7,500 | Service | 24,762 | 236 | 3.22 | 1543 | 1497 | 61 |
| 62 | 10-17-73 | 391 | C. W. B. | 1970 | Chev | 366 | V8 | 5 | 32,000 | Crane | 7,455 | 143 | 1.18 | 995 | 1065 | 62 |
| 63 | 10-16-73 | 392 | C. W. B. | 1970 | Chev | 366 | V8 | 5 | 32,000 | Crane | 6,120 | 280 | 5.56 | 636 | 617 | 63 |
| 64 | | 582 | Red Arrow | 1970 | Dodge | 318 | V8 | 4 | 24,000 | Freight | Over 50,000 miles | | | | | 64 |
| 65 | 11-1-73 | 581 | Red Arrow | 1970 | Dodge | 318 | V8 | 4 | 24,000 | Freight | 36,594 | 2106 | 2.19 | 1634 | 1616 | 65 |
| 66 | 10-12-73 | 251 | C. W. B. | 1970 | Dodge | 318 | V8 | 3-auto | 7,500 | Meter | 23,042 | 302 | 2.23 | 1609 | 1644 | 66 |
| 67 | | 252 | C. W. B. | 1970 | Dodge | 318 | V8 | 3-auto | 7,500 | Service | 16,659 | 210 | 2.03 | 1053 | 1000 | 67 |
| 68 | 11-9-73 | 360 | C. W. B. | 1970 | Ford | 361 | V8 | 5 | 25,500 | Dump | 32,272 | 312 | 2.84 | 1938 | 1901 | 68 |
| 69 | 10-5-73 | 5133 | C. P. S. B. | 1970 | IHC | 392 | V8 | 6-auto | 25,500 | Line | 32,383 | 203 | 1.21 | 1878 | 1931 | 69 |
| 70 | 10-9-73 | 5140 | C. P. S. B. | 1970 | IHC | 392 | V8 | 6-auto | 25,500 | Line | 55,485 | 214 | 2.62 | 703 | 715 | 70 |
| 71 | 10-10-73 | 5097 | C. P. S. B. | 1971 | IHC | 345 | V8 | 5 | 25,000 | Digger | 30,359 | 351 | 1.90 | 1879 | 1918 | 71 |
| 72 | 10-4-73 | 5106 | C. P. S. B. | 1971 | IHC | 345 | V8 | 5 | 25,000 | Digger | 33,216 | 261 | 1.33 | 2291 | 2392 | 72 |
| 73 | 10-3-73 | 5130 | C. P. S. B. | 1970 | IHC | 392 | V8 | 6-auto | 25,500 | Line | 40,085 | 352 | 3.48 | 990 | 983 | 73 |
| 74 | 10-5-73 | 5135 | C. P. S. B. | 1970 | IHC | 392 | V8 | 6-auto | 25,500 | Line | 33,160 | 138 | 1.95 | 937 | 963 | 74 |
| 75 | 11-19-73 | M-78 | State Hosp. | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 13,081 | 289 | 2.53 | 2139 | 2220 | 75 |
| 76 | 11-16-73 | M-80 | State Hosp. | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 5,535 | 203 | 1.91 | 1970 | 1941 | 76 |
| 77 | 11-16-73 | M-98 | State Hosp. | 1970 | Dodge | 225 | 6 | 4 | 7,500 | Pickup | 6,223 | 251 | 1.72 | 2568 | 2270 | 77 |
| 78 | 11-15-73 | SH-680 | State Hosp. | 1970 | Ford | 302 | V8 | 3-auto | 6,800 | Van | 15,481 | 256 | 1.13 | 2777 | 2430 | 78 |
| 79 | 11-15-73 | SH-699 | State Hosp. | 1970 | GMC | 401 | V6 | 5 | 27,000 | Bus | 26,213 | 292 | 5.75 | 1136 | 994 | 79 |
| 80 | | 1029 | Lone Star | 1970 | Chev | 307 | V8 | 4 | 6,600 | Pickup | Over 50,000 miles | | | | | 80 |
| 81 | | 134 | Herder | 1970 | Ford | 300 | 6 | 5 | 21,000 | Freight | Over 50,000 miles | | | | | 81 |
| 82 | 10-19-73 | 135 | Herder | 1970 | Ford | 300 | 6 | 5 | 21,000 | Freight | 36,174 | 155 | 0.70 | 2881 | 2795 | 82 |
| 83 | 10-19-73 | 239 | Herder | 1970 | Ford | 361 | V8 | 5 | 22,000 | Freight | 39,232 | 220 | 2.10 | 1509 | 1470 | 83 |
| 84 | 10-19-73 | 240 | Herder | 1970 | Ford | 361 | V8 | 5 | 22,000 | Freight | 43,980 | 263 | 2.92 | 1490 | 1445 | 84 |
| 85 | | 250 | C. W. B. | 1970 | Chev. | 307 | V8 | 2-auto | 7,500 | Service | Wrecked | | | | | 85 |
| 86 | 11-20-73 | 1-41 | State Hosp. | 1970 | Dodge | 225 | 6 | 3-auto | 10,000 | Laundry | 8,454 | 268 | 2.46 | 2535 | 2132 | 86 |
| 87 | 11-20-73 | M-77 | State Hosp. | 1970 | Dodge | 225 | 6 | 3-auto | 10,000 | Grounds | 8,142 | 287 | 2.30 | 2416 | 2032 | 87 |
| 88 | 11-19-73 | M-87 | State Hosp. | 1970 | Dodge | 225 | 6 | 3-auto | 7,500 | Service | 17,952 | 274 | 2.20 | 2139 | 2220 | 88 |
| 89 | 11-21-73 | M-90 | State Hosp. | 1970 | Dodge | 225 | 6 | 3-auto | 10,000 | Maint. | 11,886 | 284 | 2.38 | 1843 | 1780 | 89 |
| 90 | 11-21-73 | M-95 | State Hosp. | 1970 | Dodge | 225 | 6 | 3-auto | 10,000 | Grounds | 7,543 | 199 | 1.95 | 2657 | 2567 | 90 |
| 91 | 10-27-73 | 2179 | City P&R | 1970 | IHC | 345 | V8 | 4 | 19,000 | Water truck | 3,155 | 164 | 1.08 | 2204 | 2189 | 91 |
| 92 | 10-23-73 | 2120 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maint. | 15,008 | 249 | 2.15 | 1851 | 1773 | 92 |
| 93 | 11-2-73 | 27 | B. M. W. | 1970 | Ford | 360 | V8 | 4 | 7,500 | Repair | 40,282 | 309 | 3.56 | 1313 | 1327 | 93 |
| 94 | 10-24-73 | 2073 | City P&R | 1970 | Chev | 292 | 6 | 3 | 14,000 | Maint. | 8,934 | 202 | 0.62 | 3183 | 3196 | 94 |
| 95 | | 2121 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maint. | 9,126 | 301 | 2.56 | 1909 | 1829 | 95 |
| 96 | 10-29-73 | 4T1 | B. C. R. D. | 1970 | Ford | 240 | 6 | 3 | 7,500 | Maint. | 39,024 | 280 | 1.96 | 1971 | 1888 | 96 |
| 97 | 10-29-73 | 4T16 | B. C. R. D. | 1970 | Ford | 240 | 6 | 3 | 7,500 | Welder | 26,802 | 328 | 1.38 | 1974 | 1891 | 97 |
| 98 | 10-30-73 | 1T22 | B. C. R. D. | 1970 | Ford | 330 | V8 | 5 | 21,000 | Water truck | 40,106 | 260 | 0.71 | 2583 | 2738 | 98 |
| 99 | 10-30-73 | 2T9 | B. C. R. D. | 1970 | Ford | 330 | V8 | 4 | 21,000 | Water truck | 35,002 | 342 | 1.14 | 2885 | 3058 | 99 |
| 100 | 10-30-73 | 2T12 | B. C. R. D. | 1970 | Ford | 330 | V8 | 4 | 21,000 | Water truck | 30,808 | 309 | 1.24 | 2371 | 2513 | 100 |

*Hi-lo means two-speed rear axle.

TABLE D-7 (Cont'd). VEHICLE DESCRIPTION AND SEVENTH ROUND EMISSION RESULTS
"30" MONTHS HEAVY-DUTY GASOLINE SURVEILLANCE (AS OF FEBRUARY 1, 1974)

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans. Speeds* | GVW lbs. | Vehicle Type | Test Mileage | Emission Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 101 | 10-23-73 | 4T23 | B. C. R. D. | 1970 | Ford | 330 | V8 | 5 | 21,000 | Water Truck | 42,023 | 602 | 4.87 | 1289 | 1235 | 101 |
| 102 | 11-2-73 | 7 | B. M. W. | 1970 | Ford | 360 | V8 | 4 | 6,000 | Maint. | 44,646 | 310 | 3.82 | 1455 | 1471 | 102 |
| 103 | | 34 | Southern | 1970 | GMC | 427 | V8 | 5 | 32,500 | Tractor | Over 50,000 miles | | | | | 103 |
| 104 | 10-23-73 | 2085 | City P&R | 1970 | Chev | 307 | V8 | 3 | 7,500 | Maint. | 31,335 | 268 | 2.76 | 2243 | 2149 | 104 |
| 105 | 10-25-73 | 2122 | City P&R | 1970 | IHC | 392 | V8 | 5 | 25,500 | Maint. | 12,707 | 242 | 4.75 | 673 | 687 | 105 |
| 106 | 10-27-73 | 2119 | City P&R | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maint. | 12,504 | 282 | 2.82 | 1724 | 1712 | 106 |
| 107 | 10-24-73 | 2123 | City P&R | 1970 | Chev | 307 | V8 | 3 | 7,500 | Maint. | 11,980 | 205 | 2.23 | 1908 | 1902 | 107 |
| 108 | 10-24-73 | 2168 | City P&R | 1970 | Chev | 307 | V8 | 4 | 10,000 | Maint. | 18,422 | 2151 | 2.21 | 1677 | 1672 | 108 |
| 109 | 10-25-73 | 2169 | City P&R | 1970 | Chev | 307 | V8 | 4 | 10,000 | Maint. | 17,463 | 288 | 2.97 | 1965 | 2006 | 109 |
| 110 | 10-27-73 | 2081 | City P&R | 1970 | Chev | 307 | V8 | 3 | 7,500 | Maint. | 18,014 | 290 | 2.80 | 1949 | 1935 | 110 |
| 111 | 10-27-73 | 2082 | City P&R | 1970 | Chev | 307 | V8 | 3 | 7,500 | Maint. | 16,204 | 247 | 2.78 | 1879 | 1866 | 111 |
| 112 | 10-25-73 | 2170 | City P&R | 1970 | Chev | 307 | V8 | 4 | 10,000 | Maint. | 36,764 | 1974 | 2.61 | 1720 | 1756 | 112 |
| 113 | 11-5-73 | 51346 | C. P. S. B. | 1971 | IHC | 392 | V8 | 6-auto | 24,000 | Const. | 13,894 | | | | | 113 |
| 114 | 11-5-73 | 51375 | C. P. S. B. | 1971 | IHC | 392 | V8 | 6-auto | 25,500 | Const. | 35,451 | 159 | 1.65 | 1329 | 1257 | 114 |
| 115 | 11-5-73 | 51383 | C. P. S. B. | 1971 | IHC | 392 | V8 | 6-auto | 25,500 | Const. | 38,578 | 259 | 2.69 | 1496 | 1415 | 115 |
| 116 | 11-9-73 | 4364 | Elmore | 1970 | GMC | 350 | V8 | 4 | 14,000 | Moving | 15,767 | 1851 | 1.72 | 1997 | 1945 | 116 |
| 117 | 11-8-73 | 16 | Elmore | 1970 | GMC | 350 | V8 | 4 | 14,000 | Moving | 13,232 | 250 | 1.14 | 2557 | 2567 | 117 |
| 118 | 11-6-73 | 043247 | P. O. D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Mail | 18,096 | 235 | 2.02 | 1369 | 1393 | 118 |
| 119 | 11-6-73 | 043144 | P. O. D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Mail | 25,813 | 295 | 2.22 | 1438 | 1464 | 119 |
| 120 | 11-7-73 | 043327 | P. O. D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Mail | 20,763 | 255 | 2.12 | 1032 | 1067 | 120 |
| 121 | 11-13-73 | 98 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 47,708 | 266 | 4.62 | 1328 | 1333 | 121 |
| 122 | 11-13-73 | 101 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 41,422 | 225 | 1.94 | 2733 | 2744 | 122 |
| 123 | 11-14-73 | 102 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 52,677 | 172 | 1.77 | 1422 | 1406 | 123 |
| 124 | 11-14-73 | 105 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 20,125 | 323 | 2.55 | 1114 | 1134 | 124 |
| 125 | 11-6-73 | 043221 | P. O. D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Delivery | 20,125 | 323 | 2.55 | 1114 | 1134 | 125 |
| 126 | | 042519 | P. O. D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Delivery | 14,993 | 228 | 2.23 | 928 | 960 | 126 |
| 127 | 11-17-73 | 1085 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 20,500 | 297 | 3.83 | 1562 | 1651 | 127 |
| 128 | 11-17-73 | 1086 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 35,447 | 266 | 1.49 | 2792 | 2951 | 128 |
| 129 | 11-17-73 | 1088 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 33,802 | 324 | 2.65 | 2267 | 2396 | 129 |
| 130 | | 1353 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | Converted to LPG | | | | | 130 |
| 131 | | 1347 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 27,876 | 281 | 4.04 | 1637 | 1310 | 131 |
| 132 | | 1355 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 27,642 | 510 | 8.36 | 459 | 367 | 132 |
| 133 | | 1340 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | Converted to LPG | | | | | 133 |
| 134 | | 1348 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 29,435 | 183 | 4.97 | 622 | 523 | 134 |
| 135 | | 1345 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | Converted to LPG | | | | | 135 |
| 136 | | 1349 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 26,009 | 302 | 6.69 | 552 | 442 | 136 |
| 137 | 11-27-73 | 1365 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 25,316 | 308 | 3.82 | 1639 | 1328 | 137 |
| 138 | | 1346 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 29,185 | 269 | 2.58 | 1998 | 1660 | 138 |
| 139 | | 1364 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 28,110 | 323 | 7.68 | 384 | 319 | 139 |
| 140 | | 1363 | S. A. P. W. | 1971 | IHC | 392 | V8 | 6-auto | 34,000 | Garbage | 29,048 | 277 | 4.96 | 906 | 725 | 140 |
| 141 | 11-17-73 | 1087 | Lone Star | 1971 | Ford | 391 | V8 | 5 | 27,500 | Delivery | 31,293 | 293 | 3.44 | 1629 | 1722 | 141 |
| 142 | | 496 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Tractor | Over 50,000 miles | | | | | 142 |
| 143 | | 497 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | | Over 50,000 miles | | | | | 143 |
| 144 | | 503 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | | Over 50,000 miles | | | | | 144 |
| 145 | | 3 | JFC | 1971 | Chev | 350 | V8 | 4 | 24,000 | Delivery | 48,908 | 166 | 0.75 | 1980 | 1584 | 145 |
| 146 | | 1 | JFC | 1971 | Chev | 350 | V8 | 4 | 24,000 | Delivery | 54,446 | 290 | 6.08 | 625 | 500 | 146 |
| 147 | | 5 | JFC | 1971 | Chev | 350 | V8 | 4 | 24,000 | Delivery | 50,514 | 162 | 1.57 | 1285 | 1094 | 147 |
| 148 | | 2 | JFC | 1971 | Chev | 350 | V8 | 4 | 24,000 | Delivery | Over 50,000 miles | | | | | 148 |
| 149 | | 7 | JFC | 1971 | Chev | 350 | V8 | 4 | 24,000 | Delivery | 55,175 | 240 | 1.97 | 981 | 867 | 149 |
| 150 | | 4 | JFC | 1971 | Chev | 350 | V8 | 4 | 24,000 | Delivery | 43,163 | 186 | 1.14 | 1798 | 1530 | 150 |
| 151 | | 276-15T | So. Moving | 1971 | Chev | 427 | V8 | 4 | 32,500 | Tractor | 71,913 | 393 | 4.40 | 659 | 647 | 151 |
| 152 | | 6 | JFC | 1971 | Chev | 350 | V8 | 4 | 24,000 | Delivery | 48,463 | 153 | 1.03 | 2036 | 1629 | 152 |

*Hi-lo means two-speed rear axle.

## TABLE D-8. ROUND 1 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - HYDROCARBONS

| Manufacturer | CID | Cyl. | Number In Group | Mean | Min | Max | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet&GMC | 427 | V8 | 2 | 151 | 63 | 238 | 124 |
| White | 400 | 6 | 5 | 154 | 96 | 189 | 38 |
| Ford | 302 | V8 | 1 | 164 | - | - | - |
| Ford | 300 | 6 | 17 | 177 | 132 | 223 | 26 |
| Chevrolet | 366 | V8 | 2 | 177 | 170 | 184 | 10 |
| GMC | 350 | V8 | 2 | 189 | 154 | 223 | 49 |
| Dodge | 225 | 6 | 8 | 206 | 181 | 255 | 25 |
| Chevrolet | 292 | 6 | 2 | 209 | 173 | 244 | 50 |
| GMC | 292 | 6 | 5 | 217 | 170 | 254 | 41 |
| GMC | 401 | V6 | 1 | 229 | - | | - |
| Ford | 360 | V8 | 5 | 232 | 209 | 260 | 18 |
| Chevrolet | 350 | V8 | 7 | 241 | 84 | 362 | 94 |
| IHC | 392 | V8 | 23 | 246 | 148 | 310 | 43 |
| Dodge | 318 | V8 | 15 | 247 | 173 | 328 | 43 |
| Chevrolet | 307 | V8 | 11 | 257 | 158 | 615 | 129 |
| Ford | 240 | 6 | 3 | 261 | 261 | 262 | 1 |
| Chevrolet | 250 | 6 | 4 | 263 | 249 | 273 | 10 |
| Ford | 391 | V8 | 4 | 264 | 189 | 317 | 54 |
| IHC | 345 | V8 | 8 | 273 | 230 | 345 | 37 |
| IHC | 478 | V8 | 7 | 275 | 229 | 307 | 29 |
| Ford | 361 | V8 | 3 | 279 | 232 | 322 | 45 |
| IHC | 304 | V8 | 13 | 297 | 252 | 352 | 37 |
| Ford | 330 | V8 | 4 | 315 | 253 | 407 | 68 |

TABLE D-9. ROUND 1 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - CARBON MONOXIDE

| Manufacturer | CID | Cyl. | Number In Group | Mean | Min | Max | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Ford | 300 | 6 | 17 | 0.57 | 0.26 | 0.83 | 0.18 |
| Ford | 240 | 6 | 3 | 1.00 | 0.45 | 1.62 | 0.59 |
| Chevrolet | 292 | 6 | 2 | 1.02 | 0.89 | 1.15 | 0.18 |
| Ford | 391 | V8 | 4 | 1.07 | 0.54 | 1.70 | 0.56 |
| Ford | 302 | V8 | 1 | 1.07 | - | - | - |
| Chevrolet | 366 | V8 | 2 | 1.15 | 1.14 | 1.16 | 0.01 |
| Chevrolet | 350 | V8 | 7 | 1.16 | 0.88 | 1.71 | 0.28 |
| IHC | 345 | V8 | 8 | 1.18 | 0.89 | 1.57 | 0.21 |
| IHC | 304 | V8 | 13 | 1.30 | 0.78 | 2.24 | 0.37 |
| GMC | 292 | 6 | 5 | 1.37 | 0.86 | 2.27 | 0.55 |
| Chevrolet | 250 | 6 | 4 | 1.40 | 1.19 | 1.69 | 0.22 |
| Chevrolet&GMC | 427 | V8 | 2 | 1.42 | 1.32 | 1.52 | 0.14 |
| Ford | 361 | V8 | 3 | 1.45 | 1.18 | 1.76 | 0.29 |
| IHC | 478 | V8 | 7 | 1.57 | 1.15 | 1.88 | 0.29 |
| Dodge | 225 | 6 | 8 | 1.78 | 1.57 | 2.13 | 0.20 |
| Ford | 360 | V8 | 5 | 1.79 | 1.20 | 2.06 | 0.34 |
| Dodge | 318 | V8 | 15 | 1.96 | 1.44 | 2.69 | 0.38 |
| GMC | 401 | V6 | 1 | 2.04 | - | - | - |
| GMC | 350 | V8 | 2 | 2.05 | 0.47 | 3.62 | 2.23 |
| Ford | 330 | V8 | 4 | 2.10 | 0.71 | 5.51 | 2.28 |
| Chevrolet | 307 | V8 | 11 | 2.33 | 1.61 | 3.79 | 0.67 |
| IHC | 392 | V8 | 23 | 2.28 | 1.10 | 4.24 | 0.60 |
| White | 400 | 6 | 5 | 2.49 | 1.46 | 4.40 | 1.18 |

TABLE D-10. ROUND 1 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - OBSERVED NITRIC OXIDE

| Manufacturer | CID | Cyl. | Number In Group | Mean | Min | Max | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet | 366 | V8 | 2 | 882 | 481 | 1282 | 566 |
| Chevrolet&GMC | 427 | V8 | 2 | 909 | 593 | 1224 | 466 |
| IHC | 392 | V8 | 23 | 1059 | 423 | 2346 | 396 |
| Chevrolet | 350 | V8 | 7 | 1187 | 979 | 1384 | 156 |
| Dodge | 318 | V8 | 15 | 1457 | 656 | 2519 | 563 |
| GMC | 350 | V8 | 2 | 1575 | 1311 | 1839 | 373 |
| IHC | 478 | V8 | 7 | 1662 | 1419 | 2148 | 254 |
| White | 400 | 6 | 5 | 1742 | 1213 | 2221 | 369 |
| GMC | 401 | V6 | 1 | 1760 | - | - | |
| Ford | 360 | V8 | 5 | 1783 | 1419 | 2052 | 254 |
| Ford | 302 | V8 | 1 | 1795 | - | - | - |
| Ford | 361 | V8 | 3 | 1943 | 1658 | 2212 | 277 |
| Chevrolet | 307 | V8 | 11 | 1962 | 1102 | 2655 | 491 |
| GMC | 292 | 6 | 5 | 2059 | 1140 | 3241 | 917 |
| Ford | 240 | 6 | 3 | 2036 | 1853 | 2356 | 278 |
| IHC | 345 | V8 | 8 | 2118 | 1585 | 2477 | 295 |
| IHC | 304 | V8 | 13 | 2146 | 1784 | 2916 | 313 |
| Dodge | 225 | 6 | 8 | 2162 | 1651 | 2452 | 234 |
| Ford | 391 | V8 | 4 | 2201 | 1410 | 3068 | 696 |
| Chevrolet | 292 | 6 | 2 | 2203 | 2184 | 2222 | 27 |
| Ford | 300 | 6 | 17 | 2272 | 1112 | 3984 | 690 |
| Chevrolet | 250 | 6 | 4 | 2333 | 2189 | 2462 | 111 |
| Ford | 330 | V8 | 4 | 2430 | 806 | 3025 | 1084 |

TABLE D-11. ROUND 1 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - CORRECTED NITRIC OXIDE

| Manufacturer | CID | Cyl. | Number In Group | Mean | Min | Max | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet | 366 | V8 | 2 | 712 | 390 | 1033 | 454 |
| Chevrolet&GMC | 427 | V8 | 2 | 945 | 600 | 1290 | 488 |
| IHC | 392 | V8 | 23 | 1040 | 378 | 2276 | 385 |
| Chevrolet | 350 | V8 | 7 | 1238 | 1022 | 1432 | 159 |
| Dodge | 318 | V8 | 15 | 1306 | 552 | 2308 | 527 |
| GMC | 350 | V8 | 2 | 1568 | 1302 | 1834 | 376 |
| GMC | 401 | V6 | 1 | 1656 | - | - | - |
| White | 400 | 6 | 5 | 1683 | 1316 | 2387 | 450 |
| Ford | 360 | V8 | 5 | 1698 | 1497 | 1981 | 181 |
| IHC | 478 | V8 | 7 | 1713 | 1474 | 2187 | 237 |
| Chevrolet | 307 | V8 | 11 | 1767 | 1150 | 2384 | 361 |
| Ford | 361 | V8 | 3 | 1785 | 1540 | 2093 | 282 |
| Ford | 302 | V8 | 1 | 1803 | - | - | - |
| GMC | 292 | 6 | 5 | 1856 | 998 | 2803 | 770 |
| Ford | 391 | V8 | 4 | 1925 | 1340 | 2424 | 461 |
| IHC | 304 | V8 | 13 | 1932 | 1612 | 2363 | 226 |
| Dodge | 225 | 6 | 8 | 2076 | 1512 | 2599 | 318 |
| Ford | 240 | 6 | 3 | 2050 | 1840 | 2445 | 343 |
| Ford | 300 | 6 | 17 | 2186 | 1065 | 3957 | 708 |
| IHC | 345 | V8 | 8 | 2168 | 1671 | 2572 | 306 |
| Chevrolet | 292 | 6 | 2 | 2238 | 2193 | 2284 | 64 |
| Chevrolet | 250 | 6 | 4 | 2358 | 2228 | 2455 | 101 |
| Ford | 330 | V8 | 4 | 2376 | 801 | 3188 | 1098 |

TABLE D-12. ROUND 2 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - HYDROCARBONS

| Manufacturer | CID | Cyl. | Number In Group | Mean | Min | Max | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet | 366 | V8 | 2 | 163 | 139 | 186 | 33 |
| GMC | 350 | V8 | 2 | 203 | 197 | 208 | 8 |
| Ford | 300 | 6 | 17 | 204 | 150 | 262 | 31 |
| White | 400 | 6 | 5 | 213 | 174 | 249 | 27 |
| Chevrolet | 292 | 6 | 2 | 233 | 208 | 257 | 35 |
| Ford | 302 | V8 | 1 | 236 | - | - | - |
| Chevrolet&GMC | 427 | V8 | 2 | 239 | 236 | 242 | 4 |
| Ford | 391 | V8 | 4 | 255 | 202 | 314 | 48 |
| Chevrolet | 307 | V8 | 11 | 255 | 192 | 369 | 48 |
| IHC | 345 | V8 | 8 | 260 | 190 | 282 | 30 |
| GMC | 292 | 6 | 5 | 262 | 198 | 317 | 47 |
| Dodge | 225 | 6 | 8 | 262 | 230 | 319 | 29 |
| IHC | 478 | V8 | 7 | 264 | 182 | 399 | 67 |
| IHC | 304 | V8 | 13 | 267 | 206 | 325 | 36 |
| Chevrolet | 350 | V8 | 7 | 274 | 196 | 420 | 85 |
| IHC | 392 | V8 | 23 | 280 | 187 | 375 | 45 |
| Chevrolet | 250 | 6 | 4 | 281 | 260 | 294 | 15 |
| Dodge | 318 | V8 | 15 | 282 | 207 | 341 | 42 |
| Ford | 360 | V8 | 5 | 290 | 274 | 304 | 12 |
| Ford | 240 | 6 | 3 | 311 | 261 | 344 | 44 |
| GMC | 401 | V6 | 1 | 329 | | - | |
| Ford | 361 | V8 | 3 | 334 | 293 | 377 | 42 |
| Ford | 330 | V8 | 4 | 349 | 300 | 388 | 37 |

TABLE D-13. ROUND 2 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - CARBON MONOXIDE

| Manufacturer | CID | Cyl. | Number In Group | Mean | Min | Max | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Ford | 300 | 6 | 17 | 0.54 | 0.31 | 1.04 | 0.19 |
| Chevrolet | 292 | 6 | 2 | 0.86 | 0.84 | 0.88 | 0.03 |
| Ford | 330 | V8 | 4 | 0.87 | 0.52 | 1.22 | 0.29 |
| Chevrolet | 366 | V8 | 2 | 0.94 | 0.76 | 1.11 | 0.25 |
| GMC | 350 | V8 | 2 | 1.03 | 0.65 | 1.40 | 0.53 |
| Ford | 302 | V8 | 1 | 1.03 | - | - | - |
| Ford | 240 | 6 | 3 | 1.07 | 0.54 | 1.54 | 0.50 |
| IHC | 345 | V8 | 8 | 1.11 | 0.81 | 1.61 | 0.23 |
| Chevrolet | 250 | 6 | 4 | 1.16 | 0.94 | 1.45 | 0.24 |
| GMC | 292 | 6 | 5 | 1.34 | 0.56 | 1.99 | 0.55 |
| IHC | 304 | V8 | 13 | 1.45 | 1.07 | 2.60 | 0.38 |
| IHC | 478 | V8 | 7 | 1.54 | 0.87 | 1.82 | 0.31 |
| Ford | 391 | V8 | 4 | 1.59 | 0.77 | 2.74 | 0.87 |
| Ford | 361 | V8 | 3 | 1.82 | 1.41 | 2.12 | 0.37 |
| Dodge | 225 | 6 | 8 | 1.84 | 1.53 | 2.40 | 0.27 |
| Dodge | 318 | V8 | 15 | 1.86 | 1.40 | 2.42 | 0.28 |
| Chevrolet | 350 | V8 | 7 | 1.89 | 1.09 | 2.55 | 0.48 |
| Ford | 360 | V8 | 5 | 2.20 | 1.73 | 2.55 | 0.30 |
| White | 400 | 6 | 5 | 2.35 | 0.94 | 3.81 | 1.03 |
| Chevrolet&GMC | 427 | V8 | 2 | 2.39 | 2.18 | 2.59 | 0.29 |
| Chevrolet | 307 | V8 | 11 | 2.55 | 1.91 | 3.39 | 0.45 |
| IHC | 392 | V8 | 23 | 2.63 | 1.71 | 6.56 | 1.00 |
| GMC | 401 | V6 | 1 | 4.75 | - | - | - |

TABLE D-14. ROUND 2 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - OBSERVED NITRIC OXIDE

| Manufacturer | CID | Cyl. | Number In Group | Mean | Min | Max | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet | 366 | V8 | 2 | 784 | 483 | 1084 | 425 |
| GMC | 401 | V6 | 1 | 855 | - | - | - |
| Chevrolet&GMC | 427 | V8 | 2 | 1158 | 927 | 1389 | 327 |
| Chevrolet | 350 | V8 | 7 | 1312 | 996 | 1729 | 261 |
| IHC | 392 | V8 | 23 | 1403 | 434 | 2173 | 431 |
| Dodge | 318 | V8 | 15 | 1591 | 948 | 2457 | 405 |
| IHC | 478 | V8 | 7 | 1630 | 1312 | 2289 | 387 |
| Ford | 360 | V8 | 5 | 1750 | 1451 | 2172 | 277 |
| White | 400 | 6 | 5 | 1838 | 1512 | 2241 | 306 |
| Chevrolet | 307 | V8 | 11 | 1838 | 1199 | 2336 | 314 |
| GMC | 350 | V8 | 2 | 1854 | 1807 | 1900 | 66 |
| Ford | 361 | V8 | 3 | 1867 | 1651 | 2088 | 219 |
| Ford | 240 | 6 | 3 | 1936 | 1703 | 2241 | 276 |
| Ford | 302 | V8 | 1 | 2001 | - | - | - |
| IHC | 304 | V8 | 13 | 2121 | 1257 | 2711 | 371 |
| GMC | 292 | 6 | 5 | 2200 | 1221 | 3136 | 695 |
| Ford | 300 | 6 | 17 | 2262 | 1075 | 3488 | 736 |
| Ford | 391 | V8 | 4 | 2287 | 1947 | 2638 | 321 |
| Dodge | 225 | 6 | 8 | 2308 | 2117 | 2479 | 125 |
| IHC | 345 | V8 | 8 | 2321 | 1897 | 2770 | 293 |
| Chevrolet | 292 | 6 | 2 | 2539 | 2499 | 2579 | 57 |
| Chevrolet | 250 | 6 | 4 | 2663 | 2628 | 2732 | 48 |
| Ford | 330 | V8 | 4 | 2953 | 2734 | 3331 | 283 |

TABLE D-15. ROUND 2 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - CORRECTED NITRIC OXIDE

| Manufacturer | CID | Cyl. | Number In Group | Mean | Min | Max | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet | 366 | V8 | 2 | 815 | 483 | 1146 | 469 |
| GMC | 401 | V6 | 1 | 858 | - | - | - |
| Chevrolet&GMC | 427 | V8 | 2 | 1155 | 921 | 1386 | 331 |
| Chevrolet | 350 | V8 | 7 | 1323 | 989 | 1677 | 259 |
| IHC | 392 | V8 | 23 | 1431 | 429 | 2173 | 438 |
| Dodge | 318 | V8 | 15 | 1603 | 881 | 2550 | 425 |
| IHC | 478 | V8 | 7 | 1611 | 1246 | 2346 | 382 |
| Ford | 360 | V8 | 5 | 1735 | 1481 | 2131 | 260 |
| White | 400 | 6 | 5 | 1741 | 1458 | 2079 | 270 |
| Chevrolet | 307 | V8 | 11 | 1891 | 1260 | 2504 | 325 |
| GMC | 350 | V8 | 2 | 1902 | 1845 | 1959 | 81 |
| Ford | 240 | 6 | 3 | 1939 | 1734 | 2184 | 228 |
| Ford | 361 | V8 | 3 | 1965 | 1745 | 2194 | 225 |
| Ford | 302 | V8 | 1 | 2009 | - | | - |
| IHC | 304 | V8 | 13 | 2117 | 1233 | 2683 | 391 |
| Ford | 300 | 6 | 17 | 2162 | 980 | 3314 | 675 |
| GMC | 292 | 6 | 5 | 2217 | 1226 | 3114 | 688 |
| Ford | 391 | V8 | 4 | 2322 | 1947 | 2693 | 368 |
| IHC | 345 | V8 | 8 | 2332 | 1958 | 2663 | 292 |
| Chevrolet | 250 | 6 | 4 | 2338 | 2218 | 2445 | 100 |
| Dodge | 225 | 6 | 8 | 2354 | 2161 | 2548 | 122 |
| Chevrolet | 292 | 6 | 2 | 2487 | 2394 | 2579 | 131 |
| Ford | 330 | V8 | 4 | 2950 | 2686 | 3268 | 266 |

TABLE D-16. ROUND 3 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - HYDROCARBONS (PPM HEX.)

| Manufacturer | CID | Cyl. | Number In Group | Mean | Min | Max | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet | 366 | V8 | 2 | 126 | 115 | 137 | 16 |
| GMC | 292 | 6 | 5 | 172 | 95 | 219 | 47 |
| GMC | 350 | V8 | 2 | 177 | 139 | 215 | 54 |
| Ford | 300 | 6 | 14 | 179 | 102 | 251 | 42 |
| Chevrolet | 292 | 6 | 2 | 191 | 170 | 212 | 30 |
| White | 400 | 6 | 5 | 205 | 140 | 306 | 68 |
| Dodge | 225 | 6 | 8 | 205 | 182 | 245 | 25 |
| Ford | 302 | V8 | 1 | 214 | | - | - |
| Ford | 360 | V8 | 5 | 231 | 163 | 274 | 43 |
| IHC | 304 | V8 | 13 | 238 | 198 | 273 | 25 |
| Ford | 391 | V8 | 4 | 253 | 190 | 316 | 61 |
| Chevrolet | 307 | V8 | 10 | 253 | 185 | 426 | 74 |
| Chevrolet | 350 | V8 | 7 | 255 | 167 | 364 | 69 |
| IHC | 345 | V8 | 8 | 256 | 193 | 339 | 46 |
| Chevrolet | 250 | 6 | 4 | 259 | 222 | 293 | 34 |
| Ford | 240 | 6 | 3 | 281 | 274 | 289 | 8 |
| IHC | 478 | V8 | 7 | 288 | 231 | 506 | 99 |
| IHC | 392 | V8 | 23 | 294 | 185 | 539 | 85 |
| Dodge | 318 | V8 | 15 | 294 | 221 | 378 | 43 |
| Ford | 361 | V8 | 3 | 309 | 305 | 312 | 4 |
| GMC | 401 | V6 | 1 | 312 | - | - | - |
| Ford | 330 | V8 | 4 | 337 | 278 | 406 | 60 |
| Chevrolet&GMC | 427 | V8 | 2 | 1042 | 245 | 1838 | 1126 |

TABLE D-17. ROUND 3 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - CARBON MONOXIDE (PERCENT)

| Manufacturer | CID | Cyl. | Number In Group | Mean | Min | Max | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet | 292 | 6 | 2 | 0.89 | 0.84 | 0.93 | 0.06 |
| Ford | 300 | 6 | 14 | 1.10 | 0.19 | 4.55 | 1.28 |
| GMC | 292 | 6 | 5 | 1.12 | 0.63 | 1.91 | 0.53 |
| IHC | 345 | V8 | 8 | 1.20 | 0.92 | 1.52 | 0.21 |
| IHC | 304 | V8 | 13 | 1.39 | 0.86 | 2.14 | 0.36 |
| GMC | 350 | V8 | 2 | 1.45 | 1.07 | 1.83 | 0.54 |
| Chevrolet | 250 | 6 | 4 | 1.47 | 1.09 | 1.84 | 0.31 |
| Ford | 391 | V8 | 4 | 1.50 | 0.72 | 2.41 | 0.83 |
| Chevrolet | 366 | V8 | 2 | 1.50 | 1.18 | 1.81 | 0.45 |
| Ford | 330 | V8 | 4 | 1.52 | 0.83 | 3.05 | 1.05 |
| Ford | 302 | V8 | 1 | 1.67 | - | - | |
| IHC | 478 | V8 | 7 | 1.69 | 1.28 | 2.78 | 0.52 |
| Chevrolet | 350 | V8 | 7 | 1.74 | 1.06 | 2.49 | 0.53 |
| Dodge | 318 | V8 | 15 | 1.77 | 1.39 | 2.24 | 0.24 |
| Dodge | 225 | 6 | 8 | 1.89 | 1.60 | 2.19 | 0.21 |
| Ford | 361 | V8 | 3 | 2.11 | 1.54 | 2.41 | 0.49 |
| Ford | 360 | V8 | 5 | 2.24 | 1.76 | 2.50 | 0.28 |
| Ford | 240 | 6 | 3 | 2.32 | 0.85 | 3.41 | 1.32 |
| Chevrolet | 307 | V8 | 10 | 2.56 | 1.97 | 3.1 | 0.38 |
| IHC | 392 | V8 | 23 | 2.76 | 1.38 | 11.92 | 2.11 |
| Chevrolet&GMC | 427 | V8 | 2 | 2.88 | 2.07 | 3.68 | 1.14 |
| White | 400 | 6 | 5 | 2.89 | 1.67 | 4.23 | 1.02 |
| GMC | 401 | V6 | 1 | 5.07 | - | - | - |

TABLE D-18. ROUND 3 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - OBSERVED NITRIC OXIDE (PPM)

| Manufacturer | CID | Cyl. | Number In Group | Mean | Min | Max | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet & GMC | 427 | V8 | 2 | 695 | 627 | 763 | 96 |
| GMC | 401 | V6 | 1 | 899 | - | - | - |
| Chevrolet | 366 | V8 | 2 | 948 | 775 | 1121 | 245 |
| Chevrolet | 350 | V8 | 7 | 1458 | 1010 | 1829 | 268 |
| Ford | 240 | 6 | 3 | 1515 | 1106 | 2258 | 645 |
| IHC | 392 | V8 | 23 | 1585 | 272 | 2233 | 498 |
| Dodge | 318 | V8 | 15 | 1744 | 805 | 2632 | 439 |
| IHC | 478 | V8 | 7 | 1756 | 1325 | 2414 | 363 |
| Ford | 360 | V8 | 5 | 1761 | 1521 | 1913 | 155 |
| White | 400 | 6 | 5 | 1766 | 717 | 2515 | 682 |
| Chevrolet | 307 | V8 | 10 | 1866 | 1642 | 2425 | 228 |
| Ford | 361 | V8 | 3 | 1873 | 1786 | 1929 | 76 |
| Ford | 302 | V8 | 1 | 1956 | - | - | |
| GMC | 350 | V8 | 2 | 1988 | 1896 | 2080 | 130 |
| IHC | 345 | V8 | 8 | 2219 | 1939 | 2461 | 166 |
| Ford | 300 | 6 | 14 | 2293 | 1140 | 3811 | 837 |
| Ford | 391 | V8 | 4 | 2306 | 1954 | 2655 | 384 |
| Dodge | 225 | 6 | 8 | 2326 | 1912 | 2755 | 265 |
| IHC | 304 | V8 | 13 | 2353 | 1771 | 2884 | 344 |
| Chevrolet | 250 | 6 | 4 | 2400 | 2295 | 2492 | 103 |
| GMC | 292 | 6 | 5 | 2422 | 1280 | 3445 | 770 |
| Ford | 330 | V8 | 4 | 2582 | 1883 | 2973 | 511 |
| Chevrolet | 292 | 6 | 2 | 2586 | 2452 | 2719 | 189 |

## TABLE D-19. ROUND 3 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - CORRECTED NITRIC OXIDE (PPM)

| Manufacturer | CID | Cyl. | Number In Group | Mean | Min | Max | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet&GMC | 427 | V8 | 2 | 687 | 625 | 749 | 87.7 |
| Chevrolet | 366 | V8 | 2 | 885 | 784 | 985 | 142.1 |
| GMC | 401 | V6 | 1 | 899 | - | - | - |
| Chevrolet | 350 | V8 | 7 | 1377 | 884 | 1599 | 249.7 |
| Ford | 240 | 6 | 3 | 1496 | 1110 | 2242 | 646.2 |
| IHC | 392 | V8 | 23 | 1538 | 266 | 2332 | 482.4 |
| IHC | 478 | V8 | 7 | 1669 | 1353 | 2202 | 301.4 |
| Dodge | 318 | V8 | 15 | 1671 | 799 | 2521 | 425.1 |
| Ford | 360 | V8 | 5 | 1743 | 1504 | 1934 | 161.8 |
| White | 400 | 6 | 5 | 1773 | 720 | 2543 | 688.2 |
| GMC | 350 | V8 | 2 | 1865 | 1816 | 1914 | 69.3 |
| Chevrolet | 307 | V8 | 10 | 1879 | 1532 | 2333 | 214.3 |
| Ford | 361 | V8 | 3 | 1888 | 1859 | 1915 | 28.1 |
| Ford | 391 | V8 | 4 | 1952 | 1680 | 2206 | 293.1 |
| Ford | 302 | V8 | 1 | 1956 | - | - | - |
| Ford | 300 | 6 | 14 | 2285 | 1168 | 3879 | 825.2 |
| IHC | 345 | V8 | 8 | 2310 | 2066 | 2616 | 204.5 |
| Dodge | 225 | 6 | 8 | 2346 | 1946 | 2628 | 245.9 |
| IHC | 304 | V8 | 13 | 2373 | 1790 | 2843 | 316.7 |
| Chevrolet | 250 | 6 | 4 | 2378 | 2279 | 2475 | 101.8 |
| GMC | 292 | 6 | 5 | 2386 | 1226 | 3672 | 871.0 |
| Chevrolet | 292 | 6 | 2 | 2582 | 2435 | 2730 | 208.6 |
| Ford | 330 | V8 | 4 | 2586 | 1827 | 3006 | 546.8 |

TABLE D-20. ROUND 4 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - HYDROCARBONS (PPM HEX.)

| Manufacturer | CID | Cyl. | Number In Group | Mean | Min | Max | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet | 366 | V8 | 2 | 152 | 121 | 182 | 62 |
| Ford | 300 | 6 | 14 | 192 | 120 | 272 | 40 |
| GMC | 350 | V8 | 2 | 196 | 181 | 211 | 21 |
| Chevrolet | 350 | V8 | 7 | 200 | 121 | 290 | 62 |
| GMC | 292 | 6 | 5 | 200 | 125 | 291 | 65 |
| White | 400 | 6 | 5 | 202 | 129 | 311 | 74 |
| Chevrolet | 292 | 6 | 2 | 202 | 179 | 225 | 33 |
| Chevrolet | 307 | V8 | 10 | 207 | 161 | 259 | 11 |
| Chevrolet&GMC | 427 | V8 | 2 | 232 | 231 | 232 | 1 |
| Ford | 302 | V8 | 1 | 235 | | - | |
| Dodge | 225 | 6 | 8 | 238 | 175 | 300 | 44 |
| IHC | 304 | V8 | 13 | 242 | 166 | 324 | 34 |
| IHC | 345 | V8 | 8 | 248 | 186 | 302 | 42 |
| Ford | 240 | 6 | 3 | 250 | 211 | 288 | 54 |
| Ford | 360 | V8 | 5 | 251 | 237 | 272 | 13 |
| Chevrolet | 250 | 6 | 4 | 251 | 223 | 272 | 20 |
| IHC | 392 | V8 | 21 | 266 | 177 | 483 | 66 |
| Ford | 391 | V8 | 4 | 281 | 224 | 340 | 65 |
| Dodge | 318 | V8 | 15 | 288 | 212 | 355 | 49 |
| GMC | 401 | V6 | 1 | 298 | | - | - |
| Ford | 361 | V8 | 3 | 399 | 282 | 586 | 164 |
| IHC | 478 | V8 | 7 | 572 | 153 | 1922 | 614 |
| Ford | 330 | V8 | 4 | 811 | 253 | 2093 | 860 |

TABLE D-21. ROUND 4 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - CARBON MONOXIDE (PERCENT)

| Manufacturer | CID | Cyl. | Number In Group | Mean | Min | Max | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Ford | 302 | V8 | 1 | 0.97 | | - | |
| Ford | 300 | 6 | 14 | 1.01 | 0.15 | 4.78 | 1.33 |
| Chevrolet | 292 | 6 | 2 | 1.02 | 0.84 | 1.19 | 0.25 |
| GMC | 292 | 6 | 5 | 1.14 | 0.51 | 1.96 | 0 64 |
| Chevrolet | 366 | V8 | 2 | 1.21 | 0.75 | 1.66 | 0.55 |
| Chevrolet | 250 | 6 | 4 | 1.23 | 0.68 | 1.8 | 0 48 |
| IHC | 345 | V8 | 8 | 1.30 | 0.91 | 1.62 | 0 22 |
| IHC | 304 | V8 | 13 | 1 34 | 0.86 | 2.24 | 0 39 |
| IHC | 478 | V8 | 7 | 1.48 | 0.80 | 1.97 | 0 44 |
| Chevrolet | 350 | V8 | 7 | 1.56 | 0.87 | 2.37 | 0.55 |
| Ford | 330 | V8 | 4 | 1.71 | 0.73 | 3.89 | 1.49 |
| GMC | 350 | V8 | 2 | 1.82 | 1.33 | 2.30 | 0.69 |
| Dodge | 318 | V8 | 15 | 1.83 | 1.45 | 2.23 | 0.25 |
| Ford | 240 | 6 | 3 | 1.85 | 1.82 | 1.87 | 0.04 |
| Ford | 361 | V8 | 3 | 1.87 | 1.55 | 2.48 | 0.53 |
| Ford | 391 | V8 | 4 | 1.93 | 0.74 | 3.36 | 1.29 |
| Dodge | 225 | 6 | 8 | 1.96 | 1 44 | 2.17 | 0.26 |
| Ford | 360 | V8 | 5 | 2.24 | 1 55 | 2.90 | 0.52 |
| Chevrolet&GMC | 427 | V8 | 2 | 2.34 | 1 82 | 2.85 | 0.73 |
| IHC | 392 | V8 | 21 | 2.38 | 1.65 | 3.96 | 0.55 |
| Chevrolet | 307 | V8 | 10 | 2.55 | 1.94 | 3.24 | 0.13 |
| White | 400 | 6 | 5 | 2.64 | 1.44 | 3.35 | 0 73 |
| GMC | 401 | V6 | 1 | 4.90 | - | - | - |

TABLE D-22. ROUND 4 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - OBSERVED NITRIC OXIDE (PPM)

| Manufacturer | CID | Cyl. | Number In Group | Mean | Min | Max | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet | 366 | V8 | 2 | 690 | 439 | 941 | 185 |
| GMC | 401 | V6 | 1 | 904 | - | - | |
| Chevrolet&GMC | 427 | V8 | 2 | 1020 | 591 | 1448 | 606 |
| Chevrolet | 350 | V8 | 7 | 1118 | 844 | 1438 | 185 |
| IHC | 392 | V8 | 21 | 1397 | 717 | 2143 | 368 |
| IHC | 478 | V8 | 7 | 1404 | 1035 | 1755 | 260 |
| GMC | 350 | V8 | 2 | 1498 | 1437 | 1559 | 86 |
| Ford | 240 | 6 | 3 | 1627 | 1088 | 2165 | 762 |
| Dodge | 318 | V8 | 15 | 1634 | 946 | 2408 | 396 |
| Ford | 360 | V8 | 5 | 1659 | 1537 | 1853 | 128 |
| Chevrolet | 307 | V8 | 10 | 1730 | 1071 | 2328 | 109 |
| Ford | 361 | V8 | 3 | 1816 | 1120 | 2364 | 635 |
| White | 400 | 6 | 5 | 1850 | 1484 | 2363 | 355 |
| Ford | 391 | V8 | 4 | 1932 | 1438 | 2302 | 435 |
| Ford | 330 | V8 | 4 | 2047 | 1553 | 2780 | 529 |
| Dodge | 225 | 6 | 8 | 2100 | 1454 | 2565 | 347 |
| IHC | 304 | V8 | 13 | 2377 | 1492 | 2950 | 505 |
| IHC | 345 | V8 | 8 | 2429 | 1829 | 2862 | 335 |
| GMC | 292 | 6 | 5 | 2456 | 1064 | 3681 | 1298 |
| Ford | 302 | V8 | 1 | 2469 | - | | - |
| Ford | 300 | 6 | 14 | 2478 | 1256 | 4008 | 849 |
| Chevrolet | 250 | 6 | 4 | 2608 | 2026 | 3134 | 228 |
| Chevrolet | 292 | 6 | 2 | 2659 | 2635 | 2683 | 34 |

TABLE D-23. ROUND 4 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - CORRECTED NITRIC OXIDE (PPM)

| Manufacturer | CID | Cyl. | Number In Group | Mean | Min | Max | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet | 366 | V8 | 2 | 628 | 378 | 878 | 189 |
| GMC | 401 | V6 | 1 | 795 | - | - | - |
| Chevrolet&GMC | 427 | V8 | 2 | 981 | 591 | 1370 | 550 |
| Chevrolet | 350 | V8 | 7 | 1142 | 819 | 1415 | 189 |
| IHC | 478 | V8 | 7 | 1274 | 1011 | 1517 | 175 |
| IHC | 392 | V8 | 21 | 1300 | 720 | 1865 | 324 |
| Ford | 240 | 6 | 3 | 1301 | 870 | 1732 | 610 |
| Ford | 360 | V8 | 5 | 1478 | 1371 | 1629 | 109 |
| Dodge | 318 | V8 | 15 | 1509 | 918 | 2072 | 311 |
| GMC | 350 | V8 | 2 | 1517 | 1421 | 1613 | 136 |
| White | 400 | 6 | 5 | 1521 | 1140 | 1928 | 306 |
| Chevrolet | 307 | V8 | 10 | 1578 | 1071 | 1969 | 86 |
| Ford | 361 | V8 | 3 | 1599 | 1054 | 2090 | 520 |
| Ford | 391 | V8 | 4 | 1910 | 1411 | 2269 | 425 |
| Ford | 330 | V8 | 4 | 1944 | 1267 | 2727 | 607 |
| IHC | 345 | V8 | 8 | 2008 | 1648 | 2274 | 228 |
| Dodge | 225 | 6 | 8 | 2034 | 1460 | 2447 | 342 |
| IHC | 304 | V8 | 13 | 2138 | 1482 | 2582 | 373 |
| Chevrolet | 250 | 6 | 4 | 2145 | 1653 | 2698 | 214 |
| Ford | 302 | V8 | 1 | 2262 | - | | - |
| Ford | 300 | 6 | 14 | 2293 | 1150 | 3172 | 780 |
| GMC | 292 | 6 | 5 | 2307 | 1001 | 3696 | 1164 |
| Chevrolet | 292 | 6 | 2 | 2455 | 2385 | 2524 | 98 |

TABLE D-24. ROUND 5 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - HYDROCARBONS

| Manufacturer | CID | Cyl. | Number in Group | Mean | Min. | Max. | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet | 366 | V8 | 2 | 160 | 139 | 180 | 29 |
| Chevrolet | 427 | V8 | 1 | 193 | --- | ---- | ---- |
| GMC | 350 | V8 | 2 | 208 | 192 | 223 | 22 |
| White | 400 | 6 | 5 | 208 | 117 | 298 | 66 |
| Ford | 300 | 6 | 14 | 212 | 137 | 314 | 56 |
| Dodge | 225 | 6 | 8 | 227 | 106 | 297 | 35 |
| IHC | 478 | V8 | 7 | 228 | 165 | 273 | 36 |
| Chevrolet | 250 | 6 | 4 | 249 | 210 | 288 | 55 |
| Ford | 302 | V8 | 1 | 252 | --- | ---- | ---- |
| GMC | 401 | V6 | 1 | 252 | --- | ---- | ---- |
| IHC | 345 | V8 | 8 | 262 | 142 | 439 | 97 |
| IHC | 392 | V8 | 21 | 263 | 119 | 696 | 116 |
| Chevrolet | 292 | 6 | 2 | 269 | 214 | 371 | 71 |
| Dodge | 318 | V8 | 15 | 282 | 218 | 485 | 69 |
| Ford | 360 | V8 | 5 | 285 | 171 | 476 | 115 |
| Chevrolet | 350 | V8 | 7 | 294 | 206 | 547 | 119 |
| GMC | 292 | 6 | 1 | 316 | --- | ---- | ---- |
| Ford | 240 | 6 | 3 | 321 | 304 | 347 | 23 |
| Ford | 330 | V8 | 4 | 351 | 268 | 531 | 121 |
| Ford | 391 | V8 | 4 | 375 | 229 | 604 | 160 |
| IHC | 304 | V8 | 13 | 380 | 189 | 2031 | 498 |
| Ford | 361 | V8 | 3 | 386 | 256 | 566 | 161 |
| Chevrolet | 307 | V8 | 9 | 841 | 174 | 3906 | 1313 |

TABLE D-25. ROUND 5 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - CARBON MONOXIDE

| Manufacturer | CID | Cyl. | Number in Group | Mean | Min. | Max. | Standard Deviation |
|---|---|---|---|---|---|---|---|
| GMC | 292 | 6 | 1 | 0.64 | ---- | ---- | ---- |
| Chevrolet | 250 | 6 | 4 | 0.90 | 0.88 | 0.92 | 0.03 |
| Ford | 302 | V8 | 1 | 0.98 | ---- | ---- | ---- |
| Ford | 300 | 6 | 14 | 1.01 | 0.22 | 4.80 | 1.31 |
| IHC | 345 | V8 | 8 | 1.39 | 2.07 | 2.07 | 0.38 |
| Chevrolet | 366 | V8 | 2 | 1.40 | 1.00 | 1.79 | 0.56 |
| IHC | 304 | V8 | 13 | 1.45 | 0.72 | 2.20 | 0.37 |
| Chevrolet | 292 | 6 | 2 | 1.47 | 1.08 | 2.09 | 0.46 |
| Chevrolet | 427 | V8 | 1 | 1.56 | ---- | ---- | ---- |
| IHC | 478 | V8 | 7 | 1.82 | 1.04 | 2.63 | 0.64 |
| Ford | 330 | V8 | 4 | 1.82 | 0.67 | 4.46 | 1.78 |
| Dodge | 318 | V8 | 15 | 1.85 | 1.36 | 2.43 | 0.33 |
| Chevrolet | 350 | V8 | 7 | 1.96 | 1.28 | 2.94 | 0.67 |
| Dodge | 225 | 6 | 8 | 1.97 | 0.39 | 1.76 | 0.14 |
| Ford | 391 | V8 | 4 | 2.01 | 0.56 | 3.95 | 1.56 |
| Ford | 361 | V8 | 3 | 2.11 | 1.50 | 2.46 | 0.53 |
| Chevrolet | 307 | V8 | 9 | 2.43 | 1.86 | 3.00 | 0.44 |
| Ford | 360 | V8 | 5 | 2.51 | 1.74 | 3.28 | 0.64 |
| Ford | 240 | 6 | 3 | 2.55 | 2.45 | 2.63 | 0.09 |
| GMC | 350 | V8 | 2 | 2.57 | 2.14 | 2.99 | 0.60 |
| White | 400 | 6 | 5 | 2.63 | 1.61 | 3.80 | 0.86 |
| IHC | 392 | V8 | 21 | 2.76 | 1.34 | 7.07 | 1.34 |
| GMC | 401 | V6 | 1 | 5.03 | ---- | ---- | ---- |

TABLE D-26. ROUND 5 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - OBSERVED NITRIC OXIDE

| Manufacturer | CID | Cyl. | Number in Group | Mean | Min. | Max. | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet | 366 | V8 | 2 | 913 | 701 | 1125 | 300 |
| GMC | 401 | V6 | 1 | 1162 | ---- | ---- | --- |
| GMC | 350 | V8 | 2 | 1303 | 1680 | 1680 | 533 |
| Ford | 240 | 6 | 3 | 1467 | 1215 | 1827 | 320 |
| Chevrolet | 350 | V8 | 7 | 1500 | 468 | 2279 | 597 |
| Dodge | 318 | V8 | 15 | 1518 | 603 | 2366 | 494 |
| Ford | 360 | V8 | 5 | 1519 | 1198 | 1698 | 196 |
| IHC | 392 | V8 | 21 | 1559 | 428 | 2948 | 598 |
| IHC | 478 | V8 | 7 | 1659 | 1344 | 2040 | 290 |
| Chevrolet | 307 | V8 | 9 | 1680 | 923 | 2217 | 407 |
| White | 400 | 6 | 5 | 1753 | 1101 | 2393 | 538 |
| Ford | 361 | V8 | 3 | 1945 | 1623 | 2258 | 318 |
| Dodge | 225 | 6 | 8 | 1990 | 1089 | 1352 | 387 |
| IHC | 345 | V8 | 8 | 2144 | 2779 | 2779 | 488 |
| IHC | 304 | V8 | 13 | 2242 | 1761 | 2786 | 328 |
| Chevrolet | 292 | 6 | 2 | 2266 | 1917 | 2740 | 357 |
| Ford | 330 | V8 | 4 | 2304 | 837 | 3129 | 999 |
| Chevrolet | 427 | V8 | 1 | 2308 | ---- | ---- | --- |
| Ford | 391 | V8 | 4 | 2324 | 1572 | 2824 | 540 |
| Ford | 300 | 6 | 14 | 2487 | 978 | 4047 | 869 |
| Ford | 302 | V8 | 1 | 2501 | ---- | ---- | --- |
| Chevrolet | 250 | 6 | 4 | 2645 | 2217 | 3073 | 605 |
| GMC | 292 | 6 | 1 | 3337 | ---- | ---- | --- |

TABLE D-27. ROUND 5 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - CORRECTED NITRIC OXIDE

| Manufacturer | CID | Cyl. | Number in Group | Mean | Min. | Max. | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet | 366 | V8 | 2 | 953 | 732 | 1175 | 313 |
| GMC | 401 | V6 | 1 | 1027 | ---- | ---- | ---- |
| GMC | 350 | V8 | 2 | 1143 | 1361 | 1361 | 308 |
| Chevrolet | 350 | V8 | 7 | 1224 | 374 | 1860 | 484 |
| Ford | 240 | 6 | 3 | 1373 | 1117 | 1772 | 350 |
| Dodge | 318 | V8 | 15 | 1458 | 633 | 2357 | 503 |
| IHC | 392 | V8 | 21 | 1488 | 433 | 2518 | 515 |
| Ford | 360 | V8 | 5 | 1525 | 1194 | 1750 | 214 |
| Chevrolet | 307 | V8 | 9 | 1550 | 820 | 1970 | 375 |
| IHC | 478 | V8 | 7 | 1577 | 1087 | 1837 | 269 |
| White | 400 | 6 | 5 | 1720 | 1092 | 2321 | 519 |
| Ford | 361 | V8 | 3 | 1862 | 1623 | 2125 | 252 |
| Chevrolet | 427 | V8 | 1 | 1895 | ---- | ---- | ---- |
| Dodge | 225 | 6 | 8 | 1933 | 1114 | 1337 | 363 |
| Ford | 391 | V8 | 4 | 2065 | 1397 | 2510 | 479 |
| IHC | 345 | V8 | 8 | 2145 | 2827 | 2827 | 528 |
| IHC | 304 | V8 | 13 | 2220 | 1649 | 2755 | 382 |
| Chevrolet | 292 | 6 | 2 | 2266 | 1925 | 2721 | 347 |
| Ford | 330 | V8 | 4 | 2287 | 803 | 3129 | 1033 |
| Ford | 302 | V8 | 1 | 2473 | ---- | ---- | ---- |
| Ford | 300 | 6 | 14 | 2473 | 1003 | 3940 | 847 |
| Chevrolet | 250 | 6 | 4 | 2520 | 2201 | 2840 | 452 |
| GMC | 292 | 6 | 1 | 3249 | ---- | ---- | ---- |

## TABLE D-28. ROUND 6 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - HYDROCARBONS

| Manufacturer | CID | Cyl. | Number in Group | Mean | Min. | Max. | Standard Deviation |
|---|---|---|---|---|---|---|---|
| GMC | 350 | V8 | 1 | 174 | - | - | - |
| White | 400 | I6 | 5 | 182 | 154 | 237 | 33 |
| Ford | 300 | I6 | 12 | 192 | 131 | 253 | 39 |
| Chevrolet | 366 | V8 | 2 | 193 | 184 | 202 | 13 |
| Chevrolet | 292 | I6 | 2 | 201 | 150 | 252 | 72 |
| GMC | 292 | I6 | 3 | 203 | 104 | 265 | 86 |
| Ford | 302 | V8 | 1 | 235 | - | - | - |
| Dodge | 225 | I6 | 8 | 237 | 187 | 328 | 45 |
| IHC | 345 | V8 | 8 | 238 | 172 | 343 | 55 |
| Chevrolet | 250 | I6 | 4 | 255 | 228 | 295 | 32 |
| Ford | 360 | V8 | 5 | 256 | 164 | 335 | 66 |
| Ford | 240 | I6 | 3 | 275 | 205 | 318 | 61 |
| Ford | 361 | V8 | 3 | 299 | 242 | 364 | 61 |
| IHC | 478 | V8 | 6 | 315 | 173 | 417 | 79 |
| IHC | 304 | V8 | 13 | 322 | 192 | 742 | 181 |
| Ford | 330 | V8 | 4 | 336 | 213 | 547 | 146 |
| GMC | 401 | V6 | 1 | 346 | - | - | - |
| IHC | 392 | V8 | 21 | 383 | 182 | 2062 | 393 |
| Chevrolet | 350 | V8 | 7 | 408 | 246 | 892 | 217 |
| Ford | 391 | V8 | 4 | 448 | 240 | 845 | 272 |
| Dodge | 318 | V8 | 15 | 537 | 225 | 2857 | 713 |
| Chevrolet | 307 | V8 | 9 | 626 | 170 | 2082 | 805 |
| Chevrolet | 427 | V8 | 1 | (Not Available for Test) | | | |

TABLE D-29. ROUND 6 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - CARBON MONOXIDE

| Manufacturer | CID | Cyl. | Number in Group | Mean | Min. | Max. | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Ford | 300 | I6 | 12 | .851 | 0.35 | 3.65 | 0.919 |
| Chevrolet | 292 | I6 | 2 | .875 | 0.58 | 1.17 | 0.417 |
| Ford | 302 | V8 | 1 | 1.05 | - | - | - |
| GMC | 350 | V8 | 1 | 1.18 | - | - | - |
| IHC | 345 | V8 | 8 | 1.48 | 0.99 | 2.15 | 0.388 |
| Chevrolet | 250 | I6 | 4 | 1.55 | 1.08 | 2.02 | 0.384 |
| Chevrolet | 366 | V8 | 2 | 1.72 | 1.25 | 2.19 | 0.665 |
| IHC | 304 | V8 | 13 | 1.79 | 1.18 | 2.26 | 0.335 |
| Ford | 240 | I6 | 3 | 1.81 | 0.65 | 2.42 | 1.010 |
| Dodge | 318 | V8 | 15 | 1.93 | 1.51 | 2.44 | 0.260 |
| Ford | 330 | V8 | 4 | 2.02 | 0.88 | 4.57 | 1.720 |
| IHC | 478 | V8 | 6 | 2.12 | 1.06 | 2.77 | 0.671 |
| Chevrolet | 350 | V8 | 7 | 2.13 | 1.49 | 3.63 | 0.744 |
| Dodge | 225 | I6 | 8 | 2.13 | 1.82 | 2.53 | 0.221 |
| GMC | 292 | I6 | 3 | 2.33 | 0.80 | 4.63 | 2.020 |
| Ford | 361 | V8 | 3 | 2.38 | 1.69 | 2.79 | 0.599 |
| Ford | 391 | V8 | 4 | 2.58 | 1.48 | 4.53 | 1.440 |
| Chevrolet | 307 | V8 | 9 | 2.62 | 2.03 | 3.25 | 0.388 |
| White | 400 | I6 | 5 | 2.78 | 1.52 | 3.95 | 0.904 |
| Ford | 360 | V8 | 5 | 2.85 | 2.04 | 3.37 | 0.554 |
| IHC | 392 | V8 | 21 | 3.23 | 1.31 | 8.23 | 1.870 |
| GMC | 401 | V6 | 1 | 5.60 | - | - | - |
| Chevrolet | 427 | V8 | 1 | (Not Available for Test) | | | |

TABLE D-30. ROUND 6 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - OBSERVED NITRIC OXIDE

| Manufacturer | CID | Cyl. | Number in Group | Mean | Min. | Max. | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet | 366 | V8 | 2 | 650 | 406 | 894 | 345 |
| GMC | 401 | V6 | 1 | 1097 | - | - | - |
| IHC | 478 | V8 | 6 | 1361 | 957 | 2373 | 521 |
| IHC | 392 | V8 | 21 | 1458 | 317 | 2333 | 588 |
| Chevrolet | 307 | V8 | 9 | 1497 | 559 | 2195 | 543 |
| Ford | 360 | V8 | 5 | 1513 | 1053 | 1886 | 322 |
| Chevrolet | 350 | V8 | 7 | 1563 | 823 | 2646 | 738 |
| GMC | 292 | I6 | 3 | 1625 | 1045 | 2692 | 925 |
| Ford | 240 | I6 | 3 | 1627 | 1364 | 1909 | 273 |
| GMC | 350 | V8 | 1 | 1634 | - | - | - |
| Dodge | 318 | V8 | 15 | 1756 | 1223 | 2687 | 409 |
| White | 400 | I6 | 5 | 1848 | 1170 | 2323 | 429 |
| Ford | 361 | V8 | 3 | 1949 | 1504 | 2425 | 461 |
| IHC | 304 | V8 | 13 | 2091 | 1453 | 2889 | 470 |
| Ford | 391 | V8 | 4 | 2100 | 1379 | 2639 | 601 |
| IHC | 345 | V8 | 8 | 2105 | 1606 | 2752 | 449 |
| Ford | 330 | V8 | 4 | 2152 | 1032 | 2968 | 859 |
| Dodge | 225 | I6 | 8 | 2215 | 1874 | 2494 | 195 |
| Ford | 302 | V8 | 1 | 2216 | - | - | - |
| Chevrolet | 250 | I6 | 4 | 2597 | 2118 | 2951 | 404 |
| Ford | 300 | I6 | 12 | 2982 | 2186 | 3667 | 444 |
| Chevrolet | 292 | I6 | 2 | 3033 | 2885 | 3180 | 209 |
| Chevrolet | 427 | V8 | 1 | (Not Available for Test) | | | |

## TABLE D-31. ROUND 6 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - CORRECTED NITRIC OXIDE

| Manufacturer | CID | Cyl. | Number in Group | Mean | Min. | Max. | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet | 366 | V8 | 2 | 625 | 389 | 860 | 333 |
| GMC | 401 | V6 | 1 | 1076 | - | - | - |
| IHC | 392 | V8 | 21 | 1229 | 285 | 2124 | 522 |
| IHC | 478 | V8 | 6 | 1319 | 905 | 2382 | 561 |
| Chevrolet | 307 | V8 | 9 | 1337 | 591 | 2153 | 472 |
| Ford | 360 | V8 | 5 | 1408 | 1119 | 1641 | 187 |
| Chevrolet | 350 | V8 | 7 | 1543 | 838 | 2657 | 763 |
| Dodge | 318 | V8 | 15 | 1561 | 979 | 2426 | 459 |
| Ford | 240 | I6 | 3 | 1572 | 1295 | 1894 | 302 |
| GMC | 350 | V8 | 1 | 1641 | - | | - |
| GMC | 292 | I6 | 3 | 1675 | 1111 | 2777 | 954 |
| White | 400 | I6 | 5 | 1725 | 984 | 2225 | 462 |
| Ford | 302 | V8 | 1 | 1761 | | | - |
| Ford | 361 | V8 | 3 | 1801 | 1440 | 2212 | 388 |
| Dodge | 225 | I6 | 8 | 1937 | 1491 | 2435 | 330 |
| IHC | 345 | V8 | 8 | 1949 | 1606 | 2413 | 318 |
| IHC | 304 | V8 | 13 | 1971 | 1294 | 2646 | 445 |
| Ford | 391 | V8 | 4 | 2050 | 1274 | 2645 | 651 |
| Ford | 330 | V8 | 4 | 2125 | 980 | 2946 | 872 |
| Chevrolet | 250 | I6 | 4 | 2336 | 1853 | 2623 | 357 |
| Chevrolet | 292 | I6 | 2 | 2541 | 2537 | 2544 | 5 |
| Ford | 300 | I6 | 12 | 2625 | 2040 | 3311 | 384 |
| Chevrolet | 427 | V8 | 1 | (Not Available for Test) | | | |

TABLE D-32. ROUND 7 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - HYDROCARBONS

| Manufacturer | CID | Cyl. | Number in Group | Mean | Min. | Max. | Standard Deviation |
|---|---|---|---|---|---|---|---|
| GMC | 292 | I6 | 4 | 199 | 134 | 266 | 58.08 |
| Chevrolet | 350 | V8 | 6 | 200 | 153 | 290 | 54.23 |
| Chevrolet | 366 | V8 | 2 | 212 | 143 | 280 | 96.87 |
| Chevrolet | 292 | I6 | 2 | 227 | 202 | 251 | 34.65 |
| Ford | 300 | I6 | 11 | 236 | 155 | 306 | 41.32 |
| Ford | 302 | V8 | 1 | 256 | - | - | - |
| Dodge | 225 | I6 | 8 | 257 | 199 | 289 | 36.60 |
| Ford | 361 | V8 | 3 | 265 | 220 | 312 | 46.03 |
| IHC | 392 | V8 | 20 | 268 | 138 | 510 | 83.86 |
| White | 400 | I6 | 5 | 286 | 228 | 352 | 47.90 |
| Ford | 360 | V8 | 5 | 290 | 249 | 310 | 25.63 |
| Chevrolet | 250 | I6 | 3 | 292 | 277 | 308 | 15.57 |
| GMC | 401 | V6 | 1 | 292 | - | - | - |
| Ford | 391 | V8 | 4 | 295 | 266 | 324 | 23.73 |
| IHC | 304 | V8 | 12 | 295 | 240 | 501 | 78.21 |
| Ford | 240 | I6 | 2 | 304 | 280 | 328 | 33.94 |
| Ford | 330 | V8 | 4 | 378 | 260 | 602 | 152.9 |
| Chevrolet | 427 | V8 | 1 | 393 | - | - | - |
| Dodge | 318 | V8 | 14 | 431 | 210 | 2106 | 485.8 |
| IHC | 345 | V8 | 5 | 621 | 164 | 2016 | 783.0 |
| Chevrolet | 307 | V8 | 9 | 652 | 205 | 2151 | 801.2 |
| IHC | 478 | V8 | 3 | 930 | 220 | 1901 | 870.2 |
| GMC | 350 | V8 | 2 | 1051 | 250 | 1851 | 1132 |

TABLE D-33. ROUND 7 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - CORRECTED NITRIC OXIDE

| Manufacturer | CID | Cyl. | Number in Group | Mean | Min. | Max. | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet | 427 | V8 | 1 | 647 | - | - | - |
| Chevrolet | 366 | V8 | 2 | 841 | 617 | 1065 | 316.8 |
| IHC | 392 | V8 | 20 | 946 | 300 | 1931 | 466.3 |
| GMC | 401 | V6 | 1 | 994 | - | - | - |
| Chevrolet | 350 | V8 | 6 | 1201 | 500 | 1629 | 458.8 |
| IHC | 478 | V8 | 3 | 1304 | 1009 | 1540 | 270.5 |
| Dodge | 318 | V8 | 14 | 1311 | 755 | 2366 | 424.0 |
| White | 400 | I6 | 5 | 1482 | 1067 | 1955 | 433.1 |
| Ford | 361 | V8 | 3 | 1605 | 1445 | 1901 | 256.4 |
| Ford | 360 | V8 | 5 | 1622 | 1327 | 1826 | 213.5 |
| Chevrolet | 307 | V8 | 9 | 1821 | 4197 | 2149 | 206.1 |
| Ford | 240 | I6 | 2 | 1890 | 1888 | 1891 | 2.12 |
| IHC | 304 | V8 | 12 | 1987 | 1124 | 2572 | 395.3 |
| GMC | 292 | I6 | 4 | 2006 | 1333 | 2744 | 740.0 |
| IHC | 345 | V8 | 5 | 2107 | 1918 | 2392 | 187.0 |
| Dodge | 225 | I6 | 8 | 2145 | 1780 | 2567 | 236.9 |
| Chevrolet | 250 | I6 | 3 | 2154 | 1940 | 2372 | 216.0 |
| Ford | 391 | V8 | 4 | 2180 | 1651 | 2951 | 613.9 |
| GMC | 350 | V8 | 2 | 2256 | 1945 | 2567 | 440.0 |
| Ford | 330 | V8 | 4 | 2386 | 1235 | 3058 | 799.3 |
| Ford | 302 | V8 | 1 | 2430 | - | - | - |
| Chevrolet | 292 | I6 | 2 | 2707 | 2218 | 3196 | 691.6 |
| Ford | 300 | I6 | 11 | 3021 | 2275 | 3769 | 430.8 |

TABLE D-34. ROUND 7 AVERAGE EMISSION INSPECTION RESULTS BY ENGINE MODEL - CARBON MONOXIDE

| Manufacturer | CID | Cyl. | Number in Group | Mean | Min. | Max. | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Ford | 300 | I6 | 11 | 0.67 | 0.41 | 1.13 | 0.206 |
| Ford | 302 | V8 | 1 | 1.13 | - | - | |
| GMC | 350 | V8 | 2 | 1.43 | 1.14 | 1.72 | 0.410 |
| Chevrolet | 292 | I6 | 2 | 1.45 | 0.62 | 2.28 | 1.174 |
| IHC | 345 | V8 | 5 | 1.50 | 1.08 | 1.90 | 0.314 |
| Ford | 240 | I6 | 2 | 1.67 | 1.38 | 1.96 | 0.410 |
| Chevrolet | 250 | I6 | 3 | 1.87 | 1.45 | 2.08 | 0.364 |
| IHC | 478 | V8 | 3 | 1.96 | 1.32 | 2.74 | 0.719 |
| Ford | 330 | V8 | 4 | 1.99 | 0.71 | 4.87 | 1.934 |
| IHC | 304 | V8 | 12 | 2.02 | 1.32 | 4.96 | 0.987 |
| Chevrolet | 350 | V8 | 6 | 2.09 | 0.75 | 6.08 | 2.00 |
| Dodge | 318 | V8 | 14 | 2.14 | 1.63 | 2.81 | 0.286 |
| Dodge | 225 | I6 | 8 | 2.18 | 1.72 | 2.53 | 0.291 |
| GMC | 292 | I6 | 4 | 2.33 | 0.980 | 4.62 | 1.585 |
| Ford | 361 | V8 | 3 | 2.62 | 2.10 | 2.92 | 0.452 |
| Chevrolet | 307 | V8 | 9 | 2.74 | 2.21 | 3.22 | 0.348 |
| Ford | 391 | V8 | 4 | 2.85 | 1.49 | 3.83 | 1.033 |
| Ford | 360 | V8 | 5 | 2.98 | 2.15 | 3.82 | 0.695 |
| Chevrolet | 366 | V8 | 2 | 3.37 | 1.18 | 5.56 | 3.097 |
| White | 400 | I6 | 5 | 3.48 | 1.77 | 4.42 | 1.078 |
| IHC | 392 | V8 | 20 | 3.95 | 1.21 | 8.36 | 2.036 |
| Chevrolet | 427 | V8 | 1 | 4.40 | | - | - |
| GMC | 401 | V6 | 1 | 5.75 | - | - | - |

TABLE D-35. ROUND 7 AVERAGE EMISSION INSPECTION RESULTS
BY ENGINE MODEL - OBSERVED NITRIC OXIDE

| Manufacturer | CID | Cyl. | Number in Group | Mean | Min. | Max. | Standard Deviation |
|---|---|---|---|---|---|---|---|
| Chevrolet | 427 | V8 | 1 | 659 | - | - | - |
| Chevrolet | 366 | V8 | 2 | 816 | 636 | 995 | 253.9 |
| IHC | 392 | V8 | 20 | 1027 | 294 | 1998 | 509.5 |
| GMC | 401 | V6 | 1 | 1136 | - | - | - |
| IHC | 478 | V8 | 3 | 1284 | 998 | 1513 | 262.1 |
| Dodge | 318 | V8 | 14 | 1314 | 752 | 2536 | 458.7 |
| Chevrolet | 350 | V8 | 6 | 1451 | 578.5 | 2036 | 578.5 |
| White | 400 | I6 | 5 | 1478 | 1067 | 1928 | 419.3 |
| Ford | 361 | V8 | 3 | 1646 | 1490 | 1938 | 253.3 |
| Ford | 360 | V8 | 5 | 1650 | 1313 | 1909 | 257.2 |
| Chevrolet | 307 | V8 | 9 | 1838 | 1543 | 2243 | 211.5 |
| Ford | 240 | I6 | 2 | 1973 | 1971 | 1974 | 2.121 |
| GMC | 292 | I6 | 4 | 2013 | 1328 | 2733 | 740.5 |
| IHC | 304 | V8 | 12 | 2022 | 1060 | 2652 | 416.9 |
| Ford | 391 | V8 | 4 | 2063 | 1562 | 2792 | 580.9 |
| IHC | 345 | V8 | 5 | 2079 | 1879 | 2291 | 166.1 |
| Chevrolet | 250 | I6 | 3 | 2085 | 1876 | 2294 | 209.0 |
| GMC | 350 | V8 | 2 | 2277 | 1997 | 2557 | 396.0 |
| Ford | 330 | V8 | 4 | 2282 | 1289 | 2885 | 694.8 |
| Dodge | 225 | I6 | 8 | 2283 | 1843 | 2657 | 301.3 |
| Chevrolet | 292 | 16 | 2 | 2709 | 2234 | 3183 | 671.0 |
| Ford | 302 | V8 | 1 | 2777 | - | | - |
| Ford | 300 I6 | | 11 | 2953 | 2230 | 3576 | 380.3 |

TABLE D-36. MEISSION RESULTS FOR VEHICLES REQUIRING TIMING OR IDLE SPEED ADJUSTMENTS
HEAVY-DUTY GASOLINE SURVEILLANCE - FOUR MONTHS INSPECTION

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans. Speeds* | GVW, lbs | Vehicle Type | Test Miles | Condition | Emission Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 | 5-26-71 | 24342 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 4,261 | As received | 239 | 1.53 | 1450 | 1495 | 14 |
| | | | | | | | | | | Idle speed 150 rpm high | | Adjusted | 241 | 1.53 | 1439 | 1484 | |
| 22 | 6-14-71 | 5131 | C.P.S.B. | 1971 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 1,499 | As received | 288 | 2.77 | 1137 | 1157 | 22 |
| | | | | | | | | Timing 14° early, | | Idle speed 200 rpm high | | Adjusted | 250 | 2.71 | 651 | 663 | |
| 23 | 6-11-71 | 5132 | C.P.S.B. | 1970 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 827 | As received | 365 | 2.27 | 1642 | 1704 | 23 |
| | | | | | | | | Timing 15° early, | | | | Adjusted | 296 | 2.19 | 871 | 804 | |
| 24 | 9-7-71 | 5136 | C.P.S.B. | 1971 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 2,958 | As received | 255 | 2.08 | 1493 | 1493 | 24 |
| | | | | | | | | Timing 5" early | | | | Adjusted | 238 | 2.10 | 1507 | 1507 | |
| 25 | 6-15-71 | 5141 | C.P.S.B. | 1971 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 586 | As received | 261 | 2.38 | 879 | 924 | 25 |
| | | | | | | | | | | Idle speed 350 rpm high | | Adjusted | 249 | 2.37 | 747 | 785 | |
| 40 | 4-15-71 | 8811 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 4,174 | As received | 212 | 0.31 | 3347 | 3093 | 40 |
| | | | | | | | | Timing 8° early | | | | Adjusted | 187 | 0.29 | 2770 | 2559 | |
| 43 | 4-13-71 | 6856 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 2,848 | As received | 210 | 0.70 | 2572 | 2366 | 43 |
| | | | | | | | | Timing 6° late | | | | Adjusted | 216 | 0.74 | 3224 | 2966 | |
| 47 | 5-17-71 | 312 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 5,616 | As received | 223 | 1.27 | 2155 | 2114 | 47 |
| | | | | | | | | Timing 6° early | | | | Adjusted | 210 | 1.25 | 1613 | 1582 | |
| 49 | 5-20-71 | 301 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 10,000 | Crew Truck | 2,788 | As received | 264 | 1.45 | 2319 | 2328 | 49 |
| | | | | | | | | Timing 5° early, | | Idle speed 100 rpm low | | Adjusted | 206 | 1.44 | 1966 | 1974 | |
| 50 | 5-20-71 | 302 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 10,000 | Crew Truck | 2,636 | As received | 247 | 2.60 | 1743 | 1749 | 50 |
| | | | | | | | | Timing 5° early | | | | Adjusted | 226 | 2.55 | 1457 | 1463 | |
| 57 | 5-21-71 | 315 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 2,433 | As received | 295 | 1.41 | 2517 | 2683 | 57 |
| | | | | | | | | Timing 5° early | | | | Adjusted | 286 | 1.54 | 2333 | 2487 | |
| 58 | 5-7-71 | 316 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 978 | As received | 240 | 1.30 | 2332 | 2451 | 58 |
| | | | | | | | | Timing 10° early | | | | Adjusted | 195 | 1.27 | 1509 | 1586 | |
| 60 | 5-6-71 | 253 | C.W.B. | 1970 | Chevrolet | 307 | V8 | 4 | 7,500 | Service | 1,311 | As received | 245 | 3.39 | 1539 | 1617 | 60 |
| | | | | | | | | Timing 7° early | | | | Adjusted | 246 | 3.33 | 1172 | 1232 | |
| 61 | 5-6-71 | 254 | C.W.B. | 1970 | Chevrolet | 307 | V8 | 4 | 7,500 | Service | 3,833 | As received | 192 | 2.56 | 1199 | 1260 | 61 |
| | | | | | | | | Timing 8° late | | | | Adjusted | 261 | 3.37 | 1406 | 1478 | |
| 62 | 5-18-71 | 391 | C.W.B. | 1970 | Chevrolet | 366 | V8 | 5 | 32,000 | Crane | 534 | As received | 186 | 0.76 | 1084 | 1146 | 62 |
| | | | | | | | | Timing 8° early | | | | Adjusted | 177 | 0.63 | 1041 | 1100 | |
| 74 | ~~6-10-71~~ | ~~5135~~ | ~~C.P.S.B.~~ | 1970 | ~~IHC~~ | 392 | V8 | 6 | 25,500 | Line | 1,722 | As received | 309 | 1.71 | 1629 | 1691 | 74 |
| | | | | | | | | Timing 5° early | | | | Adjusted | 266 | 1.67 | ~~1409~~ | ~~1546~~ | |
| 80 | 5-26-71 | 1029 | Lone Star | 1970 | Chevrolet | 307 | V8 | 4 | 6,600 | Delivery | 10,511 | As received | 284 | 2.98 | 2336 | 2504 | 80 |
| | | | | | | | | Timing 6° early | | | | Adjusted | 267 | 2.95 | 1691 | 1813 | |
| 82 | 5-27-71 | 135 | Herder | 1970 | Ford | 300 | 6 | 5 | 21,000 | Freight | 4,736 | As received | 150 | 0.65 | 2521 | 2599 | 82 |
| | | | | | | | | Timing 8° early | | | | Adjusted | 158 | 0.65 | 2145 | 2111 | |
| 92 | 6-2-71 | 2120 | P&R Dept. | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maintenance | 2,104 | As received | 280 | 1.73 | 1850 | 1850 | 92 |
| | | | | | | | | Timing 4° late | | | | Adjusted | 275 | 1.94 | 1924 | 1887 | |
| 93 | 6-7-71 | 27 | B.M.W. | 1970 | Ford | 360 | V8 | 4 | 7,500 | Repair | 5,482 | As received | 298 | 2.23 | 1680 | 1648 | 93 |
| | | | | | | | | Timing 4° late | | | | Adjusted | 290 | 2.32 | 1837 | 1802 | |
| 96 | 6-12-71 | 4T1 | B.C.R.D. | 1970 | Ford | 240 | 6 | 3 | 7,500 | Maintenance | 5,392 | As received | 327 | 1.13 | 1703 | 1734 | 96 |
| | | | | | | | | Timing 6° late | | | | Adjusted | 248 | 0.99 | 2336 | 2378 | |
| 97 | 6-11-71 | 4T16 | B.C.R.D. | 1970 | Ford | 240 | 6 | 3 | 7,500 | Welder | 3,849 | As received | 344 | 1.54 | 1865 | 1899 | 97 |
| | | | | | | | | | | Idle speed 250 rpm low | | Adjusted | 237 | 1.53 | 1966 | 2001 | |
| 98 | 6-11-71 | 1T22 | B.C.R.D. | 1970 | Ford | 330 | V8 | 5 | 21,000 | Water Truck | 8,182 | As received | 300 | 0.52 | 3009 | 3063 | 98 |
| | | | | | | | | Timing 4° early | | | | Adjusted | 261 | 0.52 | 2517 | 2562 | |
| 99 | 6-8-71 | 2T9 | B.C.R.D. | 1970 | Ford | 330 | V8 | 4 | 21,000 | Water Truck | 4,932 | As received | 388 | 0.81 | 3331 | 3268 | 99 |
| | | | | | | | | Timing 10° early | | | | Adjusted | 252 | 0.80 | 2838 | 2784 | |
| 100 | 6-8-71 | 2T12 | B.C.R.D. | 1970 | Ford | 330 | V8 | 4 | 21,000 | Water Truck | 3,572 | As received | 349 | 0.91 | 2738 | 2686 | 100 |
| | | | | | | | | | | Idle speed 100 rpm low | | Adjusted | 304 | 0.90 | 2532 | 2484 | |
| 101 | 6-11-71 | 4T23 | B.C.R.D. | 1970 | Ford | 330 | V8 | 5 | 21,000 | Water Truck | 9,154 | As received | 359 | 1.22 | 2734 | 2783 | 101 |
| | | | | | | | | Timing 10° early, | | Idle speed 125 rpm high | | Adjusted | 319 | 1.31 | 2295 | 2336 | |
| 102 | 6-7-71 | 7 | B.M.W. | 1970 | Ford | 360 | V8 | 4 | 6,100 | Maintenance | 4,821 | As received | 292 | 2.19 | 2172 | 2131 | 102 |
| | | | | | | | | Timing 4° early | | | | Adjusted | 269 | 1.84 | 1873 | 1837 | |
| 103 | 6-16-71 | 34 | Southern | 1970 | GMC | 427 | V8 | 5 | 32,500 | Moving | 32,371 | As received | 236 | 2.18 | 1389 | 1389 | 103 |
| | | | | | | | | Timing 4° early, | | Idle speed 200 rpm high | | Adjusted | 274 | 2.11 | 1501 | 1501 | |
| 106 | 6-2-71 | 2119 | P&R Dept. | 1970 | Ford | 360 | V8 | 4 | 8,300 | Maintenance | 958 | As received | 274 | 2.29 | 1597 | 1567 | 106 |
| | | | | | | | | | | Idle speed 100 rpm low | | Adjusted | 268 | 2.33 | 1619 | 1588 | |
| 111 | 6-1-71 | 2082 | P&R Dept. | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 1,909 | As received | 246 | 2.41 | 1797 | 1889 | 111 |
| | | | | | | | | | | Idle speed 100 rpm low | | Adjusted | 241 | 2.28 | 1777 | 1868 | |
| 113 | 6-11-71 | 51346 | C.P.S.B. | 1971 | IHC | 392 | V8 | 6 auto | 24,000 | Construction | 478 | As received | 329 | 3.66 | 920 | 955 | 113 |
| | | | | | | | | Timing 10° early, | | Idle speed 150 rpm high | | Adjusted | 284 | 3.40 | 628 | 652 | |
| 118 | 6-9-71 | 043247 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Mail | 2,076 | As received | 338 | 1.92 | 1804 | 1770 | 118 |
| | | | | | | | | | | Idle speed 135 rpm low | | Adjusted | 313 | 1.99 | 1798 | 1758 | |
| 122 | 6-20-71 | 101 | Face | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 5,392 | As received | 317 | 1.99 | 2445 | 2496 | 122 |
| | | | | | | | | Timing 6° early | | | | Adjusted | 315 | 2.11 | 1890 | 1930 | |
| 125 | 6-8-71 | 043221 | P.O.D. | 1970 | Dodge | 318 | V8 | 3 auto | 10,000 | Delivery | 2,031 | As received | 322 | 2.05 | 1252 | 1316 | 125 |
| | | | | | | | | | | Idle speed 100 rpm high | | Adjusted | 324 | 2.26 | 1261 | 1325 | |
| 134 | 8-13-71 | 1348 | S.A.P.W. | 1971 | IHC | 392 | V8 | 6 auto | 34,000 | Garbage | 3,348 | As received | 229 | 6.56 | 434 | 429 | 134 |
| | | | | | | | | Timing 15° early | | | | Adjusted | 179 | 6.59 | 492 | 506 | |

* Hi-lo means two-speed rear axle.

TABLE D-37. EMISSION RESULTS FOR VEHICLES REQUIRING TIMING OR IDLE SPEED ADJUSTMENTS
HEAVY-DUTY GASOLINE SURVEILLANCE - EIGHT MONTHS INSPECTION

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans Speeds* | GVW lbs. | Vehicle Type | Test Miles | Test Condition | Emission Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 8-20-71 | 353 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 12,906 | As received | 306 | 1.67 | 2515 | 2543 | 6 |
| | | | | | | | | Timing 9° early | | | | Adjusted | 199 | 1.42 | 2277 | 2302 | |
| 10 | 8-18-71 | 352 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 12,250 | As received | 151 | 4.23 | 717 | 720 | 10 |
| | | | | | | | | Timing 16° late, Idle speed 250 rpm low | | | | Adjusted | 154 | 4.08 | 1216 | 1221 | |
| 11 | 7-25-71 | 24340 | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 12,250 | As received | 294 | 1.68 | 1325 | 1353 | 11 |
| | | | | | | | | Idle speed 150 RPM high | | | | Adjusted | 336 | 1.65 | 1362 | 1391 | |
| 12 | 6-12-71 | 24341K | Ryder | 1970 | IHC | 478 | V8 | 5 Hi-Lo | 32,000 | Tractor | 15,087 | As received | 231 | 1.31 | 1838 | 1937 | 12 |
| | | | | | | | | Timing 6° early | | | | Adjusted | 201 | 1.15 | 1712 | 1814 | |
| 15 | 6-1-71 | 56 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 16,628 | As received | 253 | 1.34 | 2116 | 2256 | 15 |
| | | | | | | | | Timing 6° early, Idle speed 400 rpm high | | | | Adjusted | 274 | 1.23 | 1725 | 1839 | |
| 19 | 8-3-71 | 54 | N.S.S.D. | 1970 | IHC | 345 | V8 | 5 | 22,000 | School Bus | 7,750 | As received | 193 | 1.52 | 2348 | 2517 | 19 |
| | | | | | | | | Timing 5° early, Idle speed 250 rpm high | | | | Adjusted | 227 | 1.36 | 2027 | 2130 | |
| 22 | 9-13-71 | 5131 | C.P.S.B. | 1971 | IHC | 392 | V8 | 3 auto | 25,500 | Line | 5,171 | As received | 213 | 2.94 | 1103 | 1061 | 22 |
| | | | | | | | | Timing 13° early | | | | Adjusted | 189 | 2.81 | 696 | 669 | |
| 23 | 9-20-71 | 5132 | C.P.S.B. | 1970 | IHC | 392 | V8 | 3-auto | 25,500 | Line | 3,471 | As received | 315 | 2.26 | 1871 | 1835 | 23 |
| | | | | | | | | Timing 10° early, Idle speed 225 rpm high | | | | Adjusted | 279 | 1.88 | 1815 | 1768 | |
| 24 | 1-20-72 | 5136 | C.P.S.B. | 1971 | IHC | 392 | V8 | 3-auto | 25,500 | Line | 7,414 | As received | 261 | 1.57 | 2230 | 1875 | 24 |
| | | | | | | | | Timing 5° early, Idle speed 150 rpm high | | | | Adjusted | 149 | 1.61 | 1414 | 1175 | |
| 27 | 8-23-71 | 6615 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 4,300 | As received | 120 | 0.56 | 1140 | 1168 | 27 |
| | | | | | | | | Timing 8° late | | | | Adjusted | 183 | 0.68 | 2431 | 2492 | |
| 39 | 9-3-71 | 8810 | C.P.S.B. | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 7,242 | As received | 251 | 3.52 | 1457 | 1457 | 39 |
| | | | | | | | | Timing 4° late, Idle speed 150 rpm low | | | | Adjusted | 247 | 3.63 | 1546 | 1535 | |
| 46 | 8-26-71 | 4950 | C.P.S.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Bucket Truck | 15,597 | As received | 198 | 1.75 | 2113 | 2098 | 46 |
| | | | | | | | | Idle Speed 300 rpm high | | | | Adjusted | 284 | 1.67 | 1997 | 1983 | |
| 47 | 10-10-71 | 312 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 12,014 | As received | 219 | 0.88 | 2884 | 2509 | 47 |
| | | | | | | | | Timing 6° early, Idle speed 125 rpm high | | | | Adjusted | 200 | 0.87 | 2560 | 2179 | |
| 48 | 9-25-71 | 314 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 4,589 | As received | 267 | 1.47 | 2618 | 2599 | 48 |
| | | | | | | | | Timing 11° early | | | | Adjusted | 250 | 1.39 | 2053 | 2039 | |
| 56 | 9-25-71 | 313 | C.W.B. | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 7,311 | As received | 249 | 1.31 | 2793 | 2843 | 56 |
| | | | | | | | | Timing 13° early | | | | Adjusted | 163 | 1.32 | 1804 | 1836 | |
| 67 | 10-3-71 | 252 | C.W.B. | 1970 | Dodge | 318 | V8 | 3-auto | 7,500 | Service | 4,979 | As received | 221 | 1.73 | 1522 | 1511 | 67 |
| | | | | | | | | Timing 5° late | | | | Adjusted | 228 | 1.74 | 1961 | 1947 | |
| 69 | 9-13-71 | 5133 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6-auto | 25,500 | Line | 3,046 | As received | 213 | 1.66 | 1403 | 1350 | 69 |
| | | | | | | | | Timing 5° early | | | | Adjusted | 176 | 1.59 | 1252 | 1204 | |
| 70 | 9-9-71 | 5140 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6-auto | 25,500 | Line | 7,902 | As received | 243 | 1.51 | 1625 | 1585 | 70 |
| | | | | | | | | Timing 5° early | | | | Adjusted | 222 | 1.30 | 1705 | 1686 | |
| 73 | 9-8-71 | 5130 | C.P.S.B. | 1970 | IHC | 392 | V8 | 6-auto | 25,500 | Line | 4,693 | As received | 287 | 2.66 | 1322 | 1288 | 73 |
| | | | | | | | | Timing 19° early, Idle speed 500 rpm high | | | | Adjusted | 277 | 2.49 | 1381 | 1345 | |
| 84 | 9-27-71 | 240 | Herder | 1970 | Ford | 361 | V8 | 5 | 22,000 | Freight | 14,979 | As received | 311 | 2.41 | 1903 | 1890 | 84 |
| | | | | | | | | Timing 12° early | | | | Adjusted | 315 | 2.36 | 1799 | 1786 | |
| 96 | 10-30-71 | 4T1 | B.C.R.D. | 1970 | Ford | 240 | 6 | 3 | 7,500 | Maintenance | 10,882 | As received | 289 | 2.70 | 1181 | 1136 | 96 |
| | | | | | | | | Timing 6° late, Idle speed 150 rpm | | | | Adjusted | 347 | 2.86 | 1610 | 1549 | |
| 99 | 11-17-71 | 2T9 | B.C.R.D. | 1970 | Ford | 330 | V8 | 4 | 21,000 | Water Truck | 11,214 | As received | 298 | 0.88 | 2973 | 3006 | 99 |
| | | | | | | | | Timing 7° early | | | | Adjusted | 264 | 0.92 | 2809 | 2839 | |
| 101 | 10-29-71 | 4T23 | B.C.R.D. | 1970 | Ford | 330 | V8 | 5 | 21,000 | Water Truck | 18,295 | As received | 367 | 3.05 | 1883 | 1827 | 101 |
| | | | | | | | | Timing 7° early | | | | Adjusted | 341 | 3.85 | 1349 | 1309 | |
| 104 | 10-13-71 | 2085 | P&R Dept. | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 7,815 | As received | 204 | 2.15 | 1694 | 1712 | 104 |
| | | | | | | | | Timing 8° late | | | | Adjusted | 200 | 2.22 | 2205 | 2229 | |
| 110 | 10-11-71 | 2081 | C.P.&R. | 1970 | Chevrolet | 307 | V8 | 3 | 7,500 | Maintenance | 3,970 | As received | 426 | 2.30 | 2425 | 2333 | 110 |
| | | | | | | | | Timing 4° early | | | | Adjusted | 860 | 2.05 | 1859 | 1781 | |
| 112 | 10-15-71 | 2170 | C.P.&R. | 1970 | Chevrolet | 307 | V8 | 4 | 10,000 | Maintenance | 9,848 | As received | 207 | 2.32 | 2064 | 2064 | 112 |
| | | | | | | | | Timing 5° late, Idle 150 rpm low | | | | Adjusted | 220 | 2.46 | 2234 | 2234 | |
| 144 | 1-5-72 | 503 | ABC | 1971 | IHC | 478 | V8 | 5 | 32,000 | Rental | 16,893 | As received | 233 | 1.28 | 1803 | 1498 | 144 |
| | | | | | | | | Idle Speed 200 rpm high | | | | Adjusted | 256 | 1.14 | 1927 | 1561 | |
| 150 | 1-24-72 | 4 | JFC | 1971 | Chevrolet | 350 | V8 | 4 | 24,000 | Delivery | 15,475 | As received | 307 | 1.62 | 1594 | 1564 | 150 |
| | | | | | | | | Idle Speed 300 rpm high | | | | Adjusted | 291 | 1.61 | 1821 | 1841 | |
| 151 | 1-19-72 | 15T | Southern | 1971 | Chevrolet | 427 | V8 | 5 | 32,500 | Moving | 16,234 | As received | 1838 | 2.07 | 763 | 749 | 151 |
| | | | | | | | | Timing 10° late | | | | Adjusted | 260 | 2.37 | 1640 | 1640 | |

TABLE D-38. EMISSION RESULTS FOR SURVEILLANCE FLEET VEHICLES REQUIRING TIMING OR IDLE SPEED ADJUSTMENTS FTP USING CONTINUOUS NDIR - TWELVE MONTHS INSPECTION

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans. Speeds* | GVW lbs | Vehicle Type | Test Miles | Condition | Emission Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 1-25-72 | PO40999 | P. O. D. | 1970 | Dodge | 318 | V-8 | 3 auto | 10,000 | Van | 9,659 | As received | 252 | 1.51 | 2019 | 1648 | 2 |
| | | | | | | | | Timing 5° early | | | | Adjusted | 247 | 1.62 | 1538 | 1278 | |
| 4 | 1-26-72 | PO41000 | P. O. D. | 1970 | Dodge | 318 | V-8 | 3 auto | 10,000 | Van | 12,828 | As received | 350 | 2.21 | 1481 | 1497 | 4 |
| | | | | | | | | Timing 10° early | | | | Adjusted | 296 | 2.29 | 1070 | 1089 | |
| 17 | 2-3-72 | 55 | N. S. S. D. | 1970 | IHC | 345 | V-8 | 5 | 25,500 | School Bus | 28,088 | As received | 194 | 1.12 | 2289 | 1648 | 17 |
| | | | | | | | | | | Idle speed 175 rpm high | | Adjusted | 173 | 1.12 | 2308 | 1662 | |
| 22 | 2-7 72 | 5131 | C. P. S. B. | 1971 | IHC | 392 | V-8 | 3 auto | 25,500 | Line | 9,139 | As received | 215 | 2.63 | 1451 | 1114 | 22 |
| | | | | | | | | Timing 10° early | | | | Adjusted | 163 | 2.58 | 937 | 754 | |
| 23 | 2-8-72 | 5132 | C. P. S. B. | 1970 | IHC | 392 | V-8 | 3 auto | 25,500 | Line | 7,710 | As received | 201 | 1.65 | 1873 | 1528 | 23 |
| | | | | | | | | Timing 18° early | | | | Adjusted | 139 | 1.62 | 372 | 317 | |
| 47 | 3-5-72 | 312 | C. W. B. | 1970 | IHC | 304 | V-8 | 4 | 19,700 | Service | 18,271 | As received | 242 | 0.94 | 2950 | 2510 | 47 |
| | | | | | | | | Timing 5° early | | | | Adjusted | 211 | 0.88 | 2848 | 2424 | |
| 56 | 3-5-72 | 313 | C. W. B. | 1970 | IHC | 304 | V-8 | 4 | 19,700 | Service | 11,146 | As received | 225 | 1.22 | 2708 | 2223 | 56 |
| | | | | | | | | Timing 10° early | | | | Adjusted | 191 | 1.16 | 2497 | 2050 | |
| 58 | 3-4-72 | 316 | C. W. B. | 1970 | IHC | 304 | V-8 | 4 | 19,700 | Service | 4,486 | As received | 166 | 1.15 | 1492 | 1482 | 58 |
| | | | | | | | | Timing 7° late | | | | Adjusted | 216 | 1.09 | 2526 | 2508 | |
| 59 | 3-4-72 | 317 | C. W. B. | 1970 | IHC | 304 | V-8 | 4 | 19,700 | Service | 7,469 | As received | 244 | 1.09 | 2537 | 2387 | 59 |
| | | | | | | | | Timing 10° late | | | | Adjusted | 197 | 1.03 | 1803 | 1697 | |
| 64 | 3-1-72 | 582 | Red Arrow | 1970 | Dodge | 318 | V-8 | 4 | 24,000 | Freight | 22,211 | As received | 259 | 1.68 | 1641 | 1682 | 64 |
| | | | | | | | | Timing 11° late | | | | Adjusted | 651 | 1.62 | 2379 | 2438 | |
| 66 | 3-18-72 | 251 | C. W. B. | 1970 | Dodge | 318 | V-8 | 3 auto | 7,500 | Meter | 10,821 | As received | 212 | 1.97 | 1440 | 1218 | 66 |
| | | | | | | | | Timing 5° late | | | | Adjusted | 226 | 1.88 | 1909 | 1615 | |
| 83 | 3-22-72 | 239 | Herder | 1970 | Ford | 361 | V-8 | 5 | 22,000 | Freight | 14,450 | As received | 329 | 1.57 | 1120 | 1054 | 83 |
| | | | | | | | | Timing 5° late | | | | Adjusted | 341 | 1.53 | 1258 | 1184 | |
| 84 | 3-21-72 | 240 | Herder | 1970 | Ford | 361 | V-8 | 5 | 22,000 | Freight | 21,901 | As received | 586 | 2.48 | 2364 | 2090 | 84 |
| | | | | | | | | Timing 9° early | | | | Adjusted | 382 | 2.56 | 1924 | 1701 | |
| 87 | 4-9-72 | M-77 | State Hosp. | 1970 | Dodge | 225 | 6 | 3 auto | 10,000 | Grounds | 3,468 | As received | 230 | 2.06 | 2334 | 2208 | 87 |
| | | | | | | | | Timing 5° early | | | | Adjusted | 194 | 1.96 | 2334 | 2208 | |
| 96 | 3-31-72 | 4T1 | B. C. R. D. | 1970 | Ford | 240 | 6 | 3 | 7,500 | Maint. | 17,218 | As received | 211 | 1.82 | 1088 | 870 | 96 |
| | | | | | | | | Timing 12° late, Idle speed 150 rpm low | | | | Adjusted | 311 | 1.89 | 1929 | 1543 | |
| 99 | 4-3-72 | 2T9 | B. C. R. D. | 1970 | Ford | 330 | V-8 | 4 | 21,000 | Water Tr. | 66,227 | As received | 2093 | 0.81 | 2780 | 2727 | 99 |
| | | | | | | | | Timing 6° early | | | | Adjusted | 1959 | 0.82 | 1089 | 1014 | |
| 103 | 4-6-72 | 34 | Southern | 1970 | GMC | 427 | V-8 | 5 | 32,500 | Moving | 46,976 | As received | 231 | 2.85 | 591 | 591 | 103 |
| | | | | | | | | Timing 6° early, Idle speed 150 rpm high | | | | Adjusted | 229 | 2.84 | 665 | 665 | |
| 106 | 3-9-72 | 2119 | C. P. R. | 1970 | Ford | 360 | V-8 | 4 | 8,300 | Maint. | 3,756 | As received | 250 | 1.97 | 1853 | 1629 | 106 |
| | | | | | | | | Timing 8° late | | | | Adjusted | 154 | 2.10 | 1384 | 1217 | |
| 121 | 5-6-72 | 98 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 18,349 | As received | 208 | 0.51 | 3681 | 3696 | 121 |
| | | | | | | | | Timing 17° early | | | | Adjusted | 132 | 0.46 | 2524 | 2533 | |
| 122 | 5-7-72 | 101 | Facs | 1970 | GMC | 292 | 6 | 4 | 10,000 | Delivery | 18,550 | As received | 224 | 1.96 | 2744 | 2793 | 122 |
| | | | | | | | | Timing 7° early | | | | Adjusted | 198 | 1.98 | 2099 | 2137 | |
| 129 | 5-21-72 | 1088 | Lone Star | 1971 | Ford | 391 | V-8 | 5 | 27,500 | Delivery | 14,034 | As received | 340 | 2.67 | 1694 | 1700 | 129 |
| | | | | | | | | Timing 6° late | | | | Adjusted | 305 | 2.49 | 1979 | 1986 | |
| 135 | 4-19-72 | 1345 | S. A. P. W. | 1971 | IHC | 392 | V-8 | 6 auto | 34,000 | Garbage | 11,691 | As received | 270 | 2.29 | 1791 | 1865 | 135 |
| | | | | | | | | | | Idle speed 400 rpm high | | Adjusted | 345 | 2.71 | 1577 | 1642 | |
| 137 | 4-25-72 | 1365 | S. A. P. W. | 1971 | IHC | 392 | V-8 | 6 auto | 34,000 | Garbage | 11,234 | As received | 321 | 2.68 | 1798 | 1662 | 137 |
| | | | | | | | | Timing 9° early | | | | Adjusted | 342 | 3.09 | 1284 | 1187 | |
| 151 | 5-3-72 | 15T | Southern | 1971 | Chevrolet | 427 | V-8 | 5 | 32,500 | Moving | 24,024 | As received | 232 | 1.82 | 1448 | 1370 | 151 |
| | | | | | | | | Timing 7° late | | | | Adjusted | 249 | 1.67 | 2043 | 1933 | |

*Hi-lo means two-speed rear axle.

TABLE D-39. EMISSION RESULTS FOR VEHICLES REQUIRING TIMING OR IDLE SPEED ADJUSTMENTS
HEAVY-DUTY GASOLINE SURVEILLANCE - EIGHTEEN MONTHS INSPECTION

| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans. Speeds* | GVW, lbs | Vehicle Type | Test Mileage | Test Condition | Emission Results HC, ppm | CO, % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 7-26-72 | P040997 | P. O. D. | 1970 | Dodge | 318 | V8 | 3-auto | 10,000 | Van | 15,745 | As Received | 221 | 1.65 | 847 | 822 | 3 |
| | | | | | | | | Timing 6° early | | | | Adjusted | 260 | 1.83 | 1028 | 997 | |
| 7 | 7-31-72 | 349 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 27,573 | As Received | 228 | 3.80 | 1101 | 1092 | 7 |
| | | | | | | | | Idle speed 150 rpm high | | | | Adjusted | 153 | 3.78 | 1090 | 1082 | |
| 9 | 8-1-72 | 350 | ABC | 1970 | White | 400 | 6 | 5 Hi-Lo | 30,000 | Tractor | 28,311 | As Received | 298 | 2.74 | 2393 | 2321 | 9 |
| | | | | | | | | Timing 26° early | | | | Adjusted | 274 | 2.62 | 1674 | 1624 | |
| 16 | 8-30-72 | 53 | NSSD | 1970 | IHC | 345 | V8 | 5 | 25,500 | School Bus | 40,536 | As Received | 439 | 2.07 | 2779 | 2827 | 16 |
| | | | | | | | | Timing 18° early | | | | Adjusted | 399 | 1.95 | 1434 | 1459 | |
| 19 | 8-29-72 | 54 | NSSD | 1970 | IHC | 345 | V8 | 5 | 22,000 | School Bus | 29,460 | As Received | 290 | 1.51 | 2455 | 2481 | 19 |
| | | | | | | | | Idle speed 150 rpm high | | | | Adjusted | 289 | 1.57 | 2494 | 2521 | |
| 21 | 10-4-72 | 72218 | Hertz | 1970 | Ford | 240 | 6 | 3-auto | 7,500 | Pickup | 30,968 | As Received | 304 | 2.45 | 1827 | 1772 | 21 |
| | | | | | | | | Timing 20° early | | | | Adjusted | 317 | 2.22 | 1775 | 1722 | |
| 23 | 8-4-72 | 5132 | CPSB | 1970 | IHC | 392 | V8 | 3-auto | 25,500 | Line | 11,100 | As Received | 198 | 1.39 | 1557 | 1528 | 23 |
| | | | | | | | | Timing 8° early | | | | Adjusted | 180 | 1.52 | 1304 | 1275 | |
| 24 | 8-9-72 | 5136 | CPSB | 1971 | IHC | 392 | V8 | 3-auto | 25,500 | Line | 14,548 | As Received | 296 | 2.22 | 1486 | 1486 | 24 |
| | | | | | | | | Timing 4° late | | | | Adjusted | 327 | 2.26 | 1646 | 1646 | |
| 28 | 8-16-72 | 6616 | CPSB | 1970 | Ford | 300 | 6 | 4 | 10,000 | Service | 14,386 | As Received | 181 | 0.49 | 2535 | 2545 | 28 |
| | | | | | | | | Timing 4° late | | | | Adjusted | 194 | 0.52 | 2916 | 2928 | |
| 39 | 9-7-72 | 8810 | CPSB | 1970 | Ford | 300 | 6 | 4 | 16,000 | Service | 27,812 | As Received | 283 | 3.09 | 1844 | 1837 | 39 |
| | | | | | | | | Idle speed 175 rpm high | | | | Adjusted | 239 | 3.02 | 1850 | 1844 | |
| 46 | 8-22-72 | 4950 | CPSB | 1970 | IHC | 304 | V8 | 4 | 19,700 | Bucket | 38,930 | As Received | 269 | 1.85 | 2032 | 1861 | 46 |
| | | | | | | | | Timing 4° early | | | | Adjusted | 260 | 1.81 | 1860 | 1704 | |
| 58 | 9-9-72 | 316 | CWB | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 6,547 | As Received | 193 | 1.13 | 1761 | 1780 | 58 |
| | | | | | | | | Idle speed 125 rpm high | | | | Adjusted | 195 | 1.09 | 1775 | 1794 | |
| 59 | 9-9-72 | 317 | CWB | 1970 | IHC | 304 | V8 | 4 | 19,700 | Service | 10,870 | As Received | 254 | 1.14 | 2699 | 2728 | 59 |
| | | | | | | | | Idle speed 150 rpm high | | | | Adjusted | 253 | 1.12 | 2690 | 2719 | |
| 60 | 9-30-72 | 253 | CWB | 1970 | Chev | 307 | V8 | 4 | 7,500 | Service | 9,157 | As Received | 3906 | 1.92 | 923 | 820 | 60 |
| | | | | | | | | Timing 4° late | | | | Adjusted | 3869 | 1.96 | 1043 | 927 | |
| 63 | 9-16-72 | 392 | CWB | 1970 | Chev | 366 | V8 | 5 | 32,000 | Crane | 3,329 | As Received | 139 | 1.79 | 701 | 732 | 63 |
| | | | | | | | | Idle speed 150 rpm high | | | | Adjusted | 148 | 1.62 | 774 | 809 | |
| 64 | 9-14-72 | 582 | Red Arrow | 1970 | Dodge | 318 | V8 | 4 | 24,000 | Freight | 31,003 | As Received | 485 | 1.53 | 1986 | 1985 | 64 |
| | | | | | | | | Idle speed 125 rpm high | | | | Adjusted | 469 | 1.59 | 2141 | 2059 | |
| 84 | 10-4-72 | 240 | Herder | 1970 | Ford | 361 | V8 | 5 | 22,000 | Freight | 29,403 | As Received | 566 | 2.46 | 2258 | 2125 | 84 |
| | | | | | | | | Timing 12° early | | | | Adjusted | 414 | 2.40 | 2044 | 1923 | |
| 88 | 10-14-72 | M-87 | State Hosp. | 1970 | Dodge | 225 | 6 | 3-auto | 7,500 | Service | 11,193 | As Received | 204 | 1.81 | 1352 | 1337 | 88 |
| | | | | | | | | Timing 6° late | | | | Adjusted | 191 | 1.77 | 1619 | 1601 | |

*Hi-lo means two-speed rear axle.

TABLE D-40. EMISSION RESULTS FOR VEHICLES REQUIRING TIMING OR IDLE SPEED ADJUSTMENTS
HEAVY-DUTY GASOLINE SURVEILLANCE - TWENTY-FOUR MONTHS INSPECTION

| | | | | | | | | | | | | | Emission Results | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit No. | Date Tested | Truck No. | Source | Vehicle Year | Make | Engine CID | Cyl. | Trans. Speeds* | GVW, lbs | Vehicle Type | Test Mileage | Test Condition | HC, ppm | CO % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
| 20 | 3-12-73 | 72341 | Hertz | 1970 | Ford | 300 | 6 | 3-auto | 10,000 | Stake | 24,342 | As received | 161 | 1.13 | 2613 | 2762 | 20 |
| | | | | | | | | Timing 17° early | | | | Adjusted | 152 | 0.85 | 1648 | 1742 | |
| 46 | 3-5-73 | 4950 | CPSB | 1970 | IHC | 304 | V8 | 4 | 19,700 | Bucket | 51372 | As received | 300 | 2.26 | 2394 | 2164 | 46 |
| | | | | | | | | Timing 11° early | | | | Adjusted | 283 | 2.20 | 2164 | 2225 | |
| 145 | 5-7-73 | 3 | JFC | 1971 | Chev | 350 | V8 | 4 | 24,000 | Delivery | 38190 | As received | 360 | 1.52 | 2575 | 2585 | 145 |
| | | | | | | | | Timing 9° early | | | | Adjusted | 272 | 1.76 | 1517 | 1523 | |
| 148 | 6-25-73 | 2 | JFC | 1971 | Chev | 350 | V8 | 4 | 24,000 | Delivery | 50560 | As received | 344 | 1.49 | 1323 | 1351 | 148 |
| | | | | | | | | Timing 4° early | | | | Adjusted | 303 | 2.18 | 927 | 899 | |
| 152 | 5-7-73 | 6 | JFC | 1971 | Chev | 350 | V8 | 4 | 24,000 | Delivery | 39976 | As received | 322 | 1.94 | 2646 | 2657 | 152 |
| | | | | | | | | Timing 10° early | | | | Adjusted | 210 | 1.78 | 1393 | 1398 | |

* Hi-lo means two-speed rear axle.

TABLE D-41. EMISSION RESULTS FOR VEHICLES REQUIRING TIMING OR IDLE SPEED ADJUSTMENTS
HEAVY-DUTY GASOLINE SURVEILLANCE - THIRTY MONTHS INSPECTION

| Unit No. | Date Tested | Truck No. | Source | Vehicle No. | Make | Engine CID | Cyl. | Trans. Speeds* | GVW, lbs | Vehicle Type | Test Mileage | Test Condition | Emission Results HC, ppm | CO % | NO, ppm Obs. | NO, ppm Corr. | Unit No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 9-11-73 | 351 | ABC | 1970 | White | 400 | 6 | 5 hi-lo | 30,000 | Tractor | 45548 | As received | 303 | 3.11 | 1920 | 1955 | 8 |
| | | | | | | | | Timing 12° early | | | | Adjusted | 249 | 2.63 | 1534 | 1551 | |
| 9 | 9-17-73 | 350 | ABC | 1970 | White | 400 | 6 | 5 hi-lo | 30,000 | Tractor | 53926 | As received | 352 | 4.42 | 1343 | 1317 | 9 |
| | | | | | | | | Timing 12° early | | | | Adjusted | 265 | 4.41 | 1161 | 1126 | |

* Hi-lo means two-speed rear axle.

TABLE D-42. PERCENT CHANGE IN EMMISSIONS FROM TIMING OR IDLE SPEED ADJUSTMENTS
FOUR MONTHS INSPECTION

ROUND NO. 2

| TRUCK NUMBER | HYDROCARBONS PPM AS RECEIVED | HYDROCARBONS PPM IN SPEC | HYDROCARBONS PPM DIFF. | HYDROCARBONS PPM PCT. DIFF. | CARBON MONOXIDE PCT. AS RECEIVED | CARBON MONOXIDE PCT. IN SPEC | CARBON MONOXIDE PCT. DIFF. | CARBON MONOXIDE PCT. PCT. DIFF. | NITRIC OXIDE PPM AS RECEIVED | NITRIC OXIDE PPM IN SPEC | NITRIC OXIDE PPM DIFF. | NITRIC OXIDE PPM PCT. DIFF. | CORR. NO PPM AS RECEIVED | CORR. NO PPM IN SPEC | CORR. NO PPM DIFF. | CORR. NO PPM PCT. DIFF. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 | 239 | 241 | 2 | .8 | 1.53 | 1.53 | 0.00 | 0.0 | 1450 | 1439 | -11 | -.8 | 1495 | 1484 | -11 | -.7 |
| 22 | 288 | 250 | -38 | -13.2 | 2.77 | 2.71 | -.06 | -2.2 | 1137 | 651 | -486 | -42.7 | 1157 | 663 | -494 | -42.7 |
| 23 | 365 | 296 | -69 | -18.9 | 2.27 | 2.19 | -.08 | -3.5 | 1642 | 871 | -771 | -47.0 | 1704 | 804 | -900 | -52.8 |
| 24 | 255 | 238 | -17 | -6.7 | 2.08 | 2.10 | .02 | 1.0 | 1493 | 1507 | 14 | .9 | 1493 | 1507 | 14 | .9 |
| 25 | 261 | 249 | -12 | -4.6 | 2.38 | 2.37 | -.01 | -.4 | 879 | 747 | -132 | -15.0 | 924 | 785 | -139 | -15.0 |
| 40 | 212 | 187 | -25 | -11.8 | .31 | .29 | -.02 | -6.5 | 3347 | 2770 | -577 | -17.2 | 3093 | 2559 | -534 | -17.3 |
| 43 | 210 | 216 | 6 | 2.9 | .70 | .74 | .04 | 5.7 | 2572 | 3224 | 652 | 25.3 | 2366 | 2966 | 600 | 25.4 |
| 47 | 223 | 210 | -13 | -5.8 | 1.27 | 1.25 | -.02 | -1.6 | 2155 | 1613 | -542 | -25.2 | 2114 | 1582 | -532 | -25.2 |
| 49 | 264 | 206 | -58 | -22.0 | 1.45 | 1.44 | -.01 | -.7 | 2319 | 1966 | -353 | -15.2 | 2328 | 1974 | -354 | -15.2 |
| 50 | 247 | 226 | -21 | -8.5 | 2.60 | 2.55 | -.05 | -1.9 | 1743 | 1457 | -286 | -16.4 | 1749 | 1463 | -286 | -16.4 |
| 57 | 295 | 286 | -9 | -3.1 | 1.41 | 1.54 | .13 | 9.2 | 2517 | 2333 | -184 | -7.3 | 2683 | 2487 | -196 | -7.3 |
| 58 | 240 | 195 | -45 | -18.7 | 1.30 | 1.27 | -.03 | -2.3 | 2332 | 1509 | -823 | -35.3 | 2451 | 1586 | -865 | -35.3 |
| 60 | 245 | 246 | 1 | .4 | 3.39 | 3.33 | -.06 | -1.8 | 1539 | 1172 | -367 | -23.8 | 1617 | 1232 | -385 | -23.8 |
| 61 | 192 | 261 | 69 | 35.9 | 2.56 | 3.37 | .81 | 31.6 | 1199 | 1406 | 207 | 17.3 | 1260 | 1478 | 218 | 17.3 |
| 62 | 186 | 177 | -9 | -4.8 | .76 | .63 | -.13 | -17.1 | 1084 | 1041 | -43 | -4.0 | 1146 | 1100 | -46 | -4.0 |
| 74 | 309 | 266 | -43 | -13.9 | 1.71 | 1.67 | -.04 | -2.3 | 1629 | 1489 | -140 | -8.6 | 1691 | 1546 | -145 | -8.6 |
| 80 | 284 | 267 | -17 | -6.0 | 2.98 | 2.95 | -.03 | -1.0 | 2336 | 1691 | -645 | -27.6 | 2504 | 1813 | -691 | -27.6 |
| 82 | 150 | 158 | 8 | 5.3 | .65 | .65 | 0.00 | 0.0 | 2521 | 2145 | -376 | -14.9 | 2599 | 2111 | -488 | -18.8 |
| 92 | 280 | 275 | -5 | -1.8 | 1.73 | 1.94 | .21 | 12.1 | 1850 | 1924 | 74 | 4.0 | 1850 | 1887 | 37 | 2.0 |
| 93 | 298 | 290 | -8 | -2.7 | 2.23 | 2.32 | .09 | 4.0 | 1680 | 1837 | 157 | 9.3 | 1648 | 1802 | 154 | 9.3 |
| 96 | 327 | 248 | -79 | -24.2 | 1.13 | .99 | -.14 | -12.4 | 1703 | 2336 | 633 | 37.2 | 1734 | 2378 | 644 | 37.1 |
| 97 | 344 | 237 | -107 | -31.1 | 1.54 | 1.53 | -.01 | -.6 | 1865 | 1966 | 101 | 5.4 | 1899 | 2001 | 102 | 5.4 |
| 98 | 300 | 261 | -39 | -13.0 | .52 | .52 | 0.00 | 0.0 | 3009 | 2517 | -492 | -16.4 | 3063 | 2562 | -501 | -16.4 |
| 99 | 388 | 252 | -136 | -35.1 | .81 | .80 | -.01 | -1.2 | 3331 | 2838 | -493 | -14.8 | 3268 | 2784 | -484 | -14.8 |
| 100 | 349 | 304 | -45 | -12.9 | .91 | .90 | -.01 | -1.1 | 2738 | 2532 | -206 | -7.5 | 2686 | 2484 | -202 | -7.5 |
| 101 | 359 | 319 | -40 | -11.1 | 1.22 | 1.31 | .09 | 7.4 | 2734 | 2295 | -439 | -16.1 | 2783 | 2336 | -447 | -16.1 |
| 102 | 292 | 269 | -23 | -7.9 | 2.19 | 1.84 | -.35 | -16.0 | 2172 | 1873 | -299 | -13.8 | 2131 | 1837 | -294 | -13.8 |
| 103 | 236 | 274 | 38 | 16.1 | 2.18 | 2.11 | -.07 | -3.2 | 1389 | 1501 | 112 | 8.1 | 1389 | 1501 | 112 | 8.1 |
| 106 | 274 | 268 | -6 | -2.2 | 2.29 | 2.33 | .04 | 1.7 | 1597 | 1619 | 22 | 1.4 | 1567 | 1588 | 21 | 1.3 |
| 111 | 246 | 241 | -5 | -2.0 | 2.41 | 2.28 | -.13 | -5.4 | 1797 | 1777 | -20 | -1.1 | 1889 | 1868 | -21 | -1.1 |
| 113 | 329 | 284 | -45 | -13.7 | 3.66 | 3.40 | -.26 | -7.1 | 920 | 628 | -292 | -31.7 | 955 | 652 | -303 | -31.7 |
| 118 | 338 | 313 | -25 | -7.4 | 1.92 | 1.99 | .07 | 3.6 | 1804 | 1798 | -6 | -.3 | 1770 | 1758 | -12 | -.7 |
| 122 | 317 | 315 | -2 | -.6 | 1.99 | 2.11 | .12 | 6.0 | 2445 | 1890 | -555 | -22.7 | 2496 | 1930 | -566 | -22.7 |
| 125 | 322 | 324 | 2 | .6 | 2.05 | 2.26 | .21 | 10.2 | 1252 | 1261 | 9 | .7 | 1316 | 1325 | 9 | .7 |
| 134 | 229 | 179 | -50 | -21.8 | 6.56 | 6.59 | .03 | .5 | 434 | 492 | 58 | 13.4 | 429 | 506 | 77 | 17.9 |

AVERAGE PERCENT CHANGE

| | |
|---|---|
| HC | -7.5 |
| CO | .1 |
| NO | -8.6 |
| CORR NO | -8.9 |

TABLE D-43. PERCENT CHANGE IN EMISSIONS FROM TIMING OR IDLE SPEED ADJUSTMENTS
EIGHT MONTHS INSPECTION

ROUND NO. 3

| TRUCK NUMBER | HYDROCARBONS PPM AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. | CARBON MONOXIDE PCT. AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. | NITRIC OXIDE PPM AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. | CORR. NO PPM AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 306 | 199 | -107 | -35.0 | 1.67 | 1.42 | -.25 | -15.0 | 2515 | 2277 | -238 | -9.5 | 2543 | 2302 | -241 | -9.5 |
| 10 | 151 | 154 | 3 | 2.0 | 4.23 | 4.08 | -.15 | -3.5 | 717 | 1216 | 499 | 69.6 | 720 | 1221 | 501 | 69.6 |
| 11 | 294 | 336 | 42 | 14.3 | 1.68 | 1.65 | -.03 | -1.8 | 1325 | 1362 | 37 | 2.8 | 1353 | 1391 | 38 | 2.8 |
| 12 | 231 | 201 | -30 | -13.0 | 1.31 | 1.15 | -.16 | -12.2 | 1838 | 1712 | -126 | -6.9 | 1937 | 1814 | -123 | -6.4 |
| 15 | 253 | 274 | 21 | 8.3 | 1.34 | 1.23 | -.11 | -8.2 | 2116 | 1725 | -391 | -18.5 | 2256 | 1839 | -417 | -18.5 |
| 19 | 193 | 227 | 34 | 17.6 | 1.52 | 1.36 | -.16 | -10.5 | 2348 | 2027 | -321 | -13.7 | 2517 | 2130 | -387 | -15.4 |
| 22 | 213 | 189 | -24 | -11.3 | 2.94 | 2.81 | -.13 | -4.4 | 1103 | 696 | -407 | -36.9 | 1061 | 669 | -392 | -36.9 |
| 23 | 315 | 279 | -36 | -11.4 | 2.26 | 1.88 | -.38 | -16.8 | 1871 | 1815 | -56 | -3.0 | 1835 | 1768 | -67 | -3.7 |
| 24 | 261 | 149 | -112 | -42.9 | 1.57 | 1.61 | .04 | 2.5 | 2230 | 1414 | -816 | -36.6 | 1875 | 1175 | -700 | -37.3 |
| 27 | 120 | 183 | 63 | 52.5 | .56 | .68 | .12 | 21.4 | 1140 | 2431 | 1291 | 113.2 | 1168 | 2492 | 1324 | 113.4 |
| 39 | 251 | 247 | -4 | -1.6 | 3.52 | 3.63 | .11 | 3.1 | 1457 | 1546 | 89 | 6.1 | 1457 | 1535 | 78 | 5.4 |
| 46 | 198 | 284 | 86 | 43.4 | 1.75 | 1.67 | -.08 | -4.6 | 2113 | 1997 | -116 | -5.5 | 2098 | 1983 | -115 | -5.5 |
| 47 | 219 | 200 | -19 | -8.7 | .88 | .87 | -.01 | -1.1 | 2884 | 2560 | -324 | -11.2 | 2509 | 2179 | -330 | -13.2 |
| 48 | 267 | 250 | -17 | -6.4 | 1.47 | 1.39 | -.08 | -5.4 | 2618 | 2053 | -565 | -21.6 | 2599 | 2039 | -560 | -21.5 |
| 56 | 249 | 163 | -86 | -34.5 | 1.31 | 1.32 | .01 | .8 | 2793 | 1804 | -989 | -35.4 | 2843 | 1836 | -1007 | -35.4 |
| 67 | 221 | 228 | 7 | 3.2 | 1.73 | 1.74 | .01 | .6 | 1522 | 1961 | 439 | 28.8 | 1511 | 1947 | 436 | 28.9 |
| 69 | 213 | 176 | -37 | -17.4 | 1.66 | 1.59 | -.07 | -4.2 | 1403 | 1252 | -151 | -10.8 | 1350 | 1204 | -146 | -10.8 |
| 70 | 243 | 222 | -21 | -8.6 | 1.51 | 1.30 | -.21 | -13.9 | 1625 | 1705 | 80 | 4.9 | 1583 | 1686 | 103 | 6.5 |
| 73 | 287 | 277 | -10 | -3.5 | 2.66 | 2.49 | -.17 | -6.4 | 1322 | 1381 | 59 | 4.5 | 1288 | 1345 | 57 | 4.4 |
| 84 | 311 | 315 | 4 | 1.3 | 2.41 | 2.36 | -.05 | -2.1 | 1903 | 1799 | -104 | -5.5 | 1890 | 1786 | -104 | -5.5 |
| 96 | 289 | 347 | 58 | 20.1 | 2.70 | 2.86 | .16 | 5.9 | 1181 | 1610 | 429 | 36.3 | 1136 | 1549 | 413 | 36.4 |
| 99 | 298 | 264 | -34 | -11.4 | .88 | .92 | .04 | 4.5 | 2973 | 2809 | -164 | -5.5 | 3006 | 2839 | -167 | -5.6 |
| 101 | 367 | 341 | -26 | -7.1 | 3.05 | 3.85 | .80 | 26.2 | 1883 | 1349 | -534 | -28.4 | 1827 | 1309 | -518 | -28.4 |
| 104 | 204 | 200 | -4 | -2.0 | 2.15 | 2.22 | .07 | 3.3 | 1694 | 2205 | 511 | 30.2 | 1712 | 2229 | 517 | 30.2 |
| 110 | 426 | 860 | 434 | 101.9 | 2.30 | 2.05 | -.25 | -10.9 | 2425 | 1859 | -566 | -23.3 | 2333 | 1781 | -552 | -23.7 |
| 112 | 207 | 220 | 13 | 6.3 | 2.32 | 2.46 | .14 | 6.0 | 2064 | 2234 | 170 | 8.2 | 2064 | 2234 | 170 | 8.2 |
| 144 | 233 | 256 | 23 | 9.9 | 1.28 | 1.14 | -.14 | -10.9 | 1803 | 1927 | 124 | 6.9 | 1498 | 1561 | 63 | 4.2 |
| 150 | 307 | 291 | -16 | -5.2 | 1.62 | 1.61 | -.01 | -.6 | 1594 | 1821 | 227 | 14.2 | 1564 | 1841 | 277 | 17.7 |
| 151 | 1838 | 260 | -1578 | -85.9 | 2.07 | 2.37 | .30 | 14.5 | 763 | 1640 | 877 | 114.9 | 749 | 1640 | 891 | 119.0 |

| AVERAGE PERCENT CHANGE | | |
|---|---|---|
| | HC | -.9 |
| | CO | -1.5 |
| | NO | 5.8 |
| | CORR NO | 5.8 |

TABLE D-44. PERCENT CHANGE IN SURVEILLANCE FLEET CONTINUOUS NDIR EMISSIONS FROM TIMING OR IDLE SPEED ADJUSTMENTS - TWELVE MONTHS INSPECTION

ROUND NO. 4

| | HYDROCARBONS PPM | | | | CARBON MONOXIDE PCT. | | | | NITRIC OXIDE PPM | | | | CORR. NO PPM | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TRUCK NUMBER | AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. | AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. | AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. | AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. |
| 2 | 252 | 247 | -5 | -2.0 | 1.51 | 1.62 | .11 | 7.3 | 2019 | 1538 | -481 | -23.8 | 1648 | 1278 | -370 | -22.5 |
| 4 | 350 | 296 | -54 | -15.4 | 2.21 | 2.29 | .08 | 3.6 | 1481 | 1070 | -411 | -27.8 | 1497 | 1089 | -408 | -27.3 |
| 17 | 194 | 173 | -21 | -10.8 | 1.12 | 1.12 | 0.00 | 0.0 | 2289 | 2308 | 19 | .8 | 1648 | 1662 | 14 | .8 |
| 22 | 215 | 163 | -52 | -24.2 | 2.63 | 2.58 | -.05 | -1.9 | 1451 | 937 | -514 | -35.4 | 1114 | 754 | -360 | -32.3 |
| 23 | 201 | 139 | -62 | -30.8 | 1.65 | 1.62 | -.03 | -1.8 | 1873 | 372 | -1501 | -80.1 | 1528 | 317 | -1211 | -79.3 |
| 47 | 242 | 211 | -31 | -12.8 | .94 | .88 | -.06 | -6.4 | 2950 | 2848 | -102 | -3.5 | 2510 | 2424 | -86 | -3.4 |
| 56 | 225 | 191 | -34 | -15.1 | 1.22 | 1.16 | -.06 | -4.9 | 2708 | 2497 | -211 | -7.8 | 2223 | 2050 | -173 | -7.8 |
| 58 | 166 | 216 | 50 | 30.1 | 1.15 | 1.09 | -.06 | -5.2 | 1492 | 2526 | 1034 | 69.3 | 1482 | 2508 | 1026 | 69.2 |
| 59 | 244 | 197 | -47 | -19.3 | 1.09 | 1.03 | -.06 | -5.5 | 2537 | 1803 | -734 | -28.9 | 2387 | 1697 | -690 | -28.9 |
| 64 | 259 | 651 | 392 | 151.4 | 1.68 | 1.62 | -.06 | -3.6 | 1641 | 2379 | 738 | 45.0 | 1682 | 2438 | 756 | 44.9 |
| 66 | 212 | 226 | 14 | 6.6 | 1.97 | 1.88 | -.09 | -4.6 | 1440 | 1909 | 469 | 32.6 | 1218 | 1615 | 397 | 32.6 |
| 83 | 329 | 341 | 12 | 3.6 | 1.57 | 1.53 | -.04 | -2.5 | 1120 | 1258 | 138 | 12.3 | 1054 | 1184 | 130 | 12.3 |
| 84 | 586 | 382 | -204 | -34.8 | 2.48 | 2.56 | .08 | 3.2 | 2364 | 1924 | -440 | -18.6 | 2090 | 1701 | -389 | -18.6 |
| 87 | 230 | 194 | -36 | -15.7 | 2.06 | 1.96 | -.10 | -4.9 | 2334 | 2334 | 0 | 0.0 | 2208 | 2208 | 0 | 0.0 |
| 96 | 211 | 311 | 100 | 47.4 | 1.82 | 1.89 | .07 | 3.8 | 1088 | 1929 | 841 | 77.3 | 870 | 1543 | 673 | 77.4 |
| 99 | 2093 | 1959 | -134 | -6.4 | .81 | .82 | .01 | 1.2 | 2780 | 1087 | -1693 | -60.9 | 2727 | 1014 | -1713 | -62.8 |
| 103 | 231 | 229 | -2 | -.9 | 2.85 | 2.84 | -.01 | -.4 | 591 | 665 | 74 | 12.5 | 591 | 665 | 74 | 12.5 |
| 106 | 250 | 154 | -96 | -38.4 | 1.97 | 2.10 | .13 | 6.6 | 1853 | 1384 | -469 | -25.3 | 1629 | 1217 | -412 | -25.3 |
| 121 | 208 | 132 | -76 | -36.5 | .51 | .46 | -.05 | -9.8 | 3681 | 2524 | -1157 | -31.4 | 3696 | 2533 | -1163 | -31.5 |
| 122 | 224 | 198 | -26 | -11.6 | 1.96 | 1.98 | .02 | 1.0 | 2744 | 2099 | -645 | -23.5 | 2793 | 2137 | -656 | -23.5 |
| 129 | 340 | 305 | -35 | -10.3 | 2.67 | 2.49 | -.18 | -6.7 | 1694 | 1979 | 285 | 16.8 | 1700 | 1986 | 286 | 16.8 |
| 135 | 270 | 345 | 75 | 27.8 | 2.29 | 2.71 | .42 | 18.3 | 1791 | 1577 | -214 | -11.9 | 1865 | 1642 | -223 | -12.0 |
| 137 | 321 | 342 | 21 | 6.5 | 2.68 | 3.09 | .41 | 15.3 | 1798 | 1284 | -514 | -28.6 | 1662 | 1187 | -475 | -28.6 |
| 151 | 232 | 249 | 17 | 7.3 | 1.82 | 1.67 | -.15 | -8.2 | 1448 | 2043 | 595 | 41.1 | 1370 | 1933 | 563 | 41.1 |

AVERAGE PERCENT CHANGE

| | | |
|---|---|---|
| AVERAGE PERCENT CHANGE | HC | -.2 |
| | CO | -.2 |
| | NO | -4.2 |
| | CORR NO | -4.0 |

TABLE D-45. PERCENT CHANGE IN EMISSIONS FROM TIMING OR IDLE SPEED ADJUSTMENTS
EIGHTEEN MONTHS INSPECTION

ROUND NO. 5

| | HYDROCARBONS PPM | | | | CARBON MONOXIDE PCT. | | | | NITRIC OXIDE PPM | | | | CORR. NO PPM | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TRUCK NUMBER | AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. | AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. | AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. | AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. |
| 3 | 221 | 260 | 39 | 17.6 | 1.65 | 1.83 | .18 | 10.9 | 847 | 1028 | 181 | 21.4 | 822 | 997 | 175 | 21.3 |
| 7 | 228 | 153 | -75 | -32.9 | 3.80 | 3.78 | -.02 | -.5 | 1101 | 1090 | -11 | -1.0 | 1092 | 1082 | -10 | -.9 |
| 9 | 298 | 274 | -24 | -8.1 | 2.74 | 2.62 | -.12 | -4.4 | 2393 | 1674 | -719 | -30.0 | 2321 | 1624 | -697 | -30.0 |
| 16 | 439 | 399 | -40 | -9.1 | 2.07 | 1.95 | -.12 | -5.8 | 2779 | 1434 | -1345 | -48.4 | 2827 | 1459 | -1368 | -48.4 |
| 19 | 290 | 289 | -1 | -.3 | 1.61 | 1.57 | .06 | 4.0 | 2455 | 2494 | 39 | 1.6 | 2481 | 2521 | 40 | 1.6 |
| 21 | 304 | 317 | 13 | 4.3 | 2.45 | 2.22 | -.23 | -9.4 | 1827 | 1775 | -52 | -2.8 | 1772 | 1722 | -50 | -2.8 |
| 23 | 198 | 180 | -18 | -9.1 | 1.39 | 1.52 | .13 | 9.4 | 1557 | 1304 | -253 | -16.2 | 1528 | 1275 | -253 | -16.6 |
| 24 | 296 | 327 | 31 | 10.5 | 2.22 | 2.26 | .04 | 1.8 | 1486 | 1646 | 160 | 10.8 | 1486 | 1646 | 160 | 10.8 |
| 28 | 181 | 194 | 13 | 7.2 | .49 | .52 | .03 | 6.1 | 2535 | 2916 | 381 | 15.0 | 2545 | 2928 | 383 | 15.0 |
| 39 | 283 | 239 | -44 | -15.5 | 3.09 | 3.02 | -.07 | -2.3 | 1844 | 1850 | 6 | .3 | 1837 | 1844 | 7 | .4 |
| 46 | 269 | 260 | -9 | -3.3 | 1.85 | 1.81 | -.04 | -2.2 | 2032 | 1860 | -172 | -8.5 | 1861 | 1704 | -157 | -8.4 |
| 58 | 193 | 195 | 2 | 1.0 | 1.13 | 1.09 | -.04 | -3.5 | 1761 | 1775 | 14 | .8 | 1780 | 1794 | 14 | .8 |
| 59 | 254 | 253 | -1 | -.4 | 1.14 | 1.12 | -.02 | -1.8 | 2699 | 2690 | -9 | -.3 | 2728 | 2719 | -9 | -.3 |
| 60 | 3906 | 3869 | -37 | -.9 | 1.92 | 1.96 | .04 | 2.1 | 923 | 1043 | 120 | 13.0 | 820 | 927 | 107 | 13.0 |
| 63 | 139 | 148 | 9 | 6.5 | 1.79 | 1.62 | -.17 | -9.5 | 701 | 774 | 73 | 10.4 | 732 | 809 | 77 | 10.5 |
| 64 | 485 | 469 | -16 | -3.3 | 1.53 | 1.59 | .06 | 3.9 | 1986 | 2141 | 155 | 7.8 | 1985 | 2059 | 74 | 3.7 |
| 84 | 566 | 414 | -152 | -26.9 | 2.46 | 2.40 | -.06 | -2.4 | 2258 | 2044 | -214 | -9.5 | 2125 | 1923 | -202 | -9.5 |
| 88 | 204 | 191 | -13 | -6.4 | 1.81 | 1.77 | -.04 | -2.2 | 1352 | 1619 | 267 | 19.7 | 1337 | 1601 | 264 | 19.7 |

AVERAGE PERCENT CHANGE HC -3.8
CO -.3
NO -.9
CORR NO -1.1

TABLE D-46. PERCENT CHANGE IN EMISSIONS FROM TIMING OR IDLE SPEED ADJUSTMENTS
TWENTY-FOUR MONTHS INSPECTION



ROUND NO. 6

| | HYDROCARBONS PPM | | | | CARBON MONOXIDE PCT. | | | | NITRIC OXIDE PPM | | | | CORR. NO PPM | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TRUCK NUMBER | AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. | AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. | AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. | AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. |
| 20 | 161 | 152 | -9 | -5.6 | 1.13 | .85 | -.28 | -24.8 | 2613 | 1648 | -965 | -36.9 | 2762 | 1742 | -1020 | -36.9 |
| 46 | 300 | 283 | -17 | -5.7 | 2.26 | 2.20 | -.06 | -2.7 | 2394 | 2164 | -230 | -9.6 | 2461 | 2225 | -236 | -9.6 |
| 145 | 360 | 272 | -88 | -24.4 | 1.52 | 1.76 | .24 | 15.8 | 2575 | 1517 | -1058 | -41.1 | 2585 | 1523 | -1062 | -41.1 |
| 148 | 344 | 303 | -41 | -11.9 | 1.49 | 2.18 | .69 | 46.3 | 1323 | 927 | -396 | -29.9 | 1351 | 899 | -452 | -33.5 |
| 152 | 322 | 210 | -112 | -34.8 | 1.94 | 1.78 | -.16 | -8.2 | 2646 | 1393 | -1253 | -47.4 | 2657 | 1398 | -1259 | -47.4 |

| | | |
|---|---|---|
| AVERAGE PERCENT CHANGE | HC | -16.5 |
| | CO | 5.3 |
| | NO | -33.0 |
| | CORR NO | -33.7 |

TABLE D-47. PERCENT CHANGE IN EMISSIONS FROM TIMING OR IDLE SPEED ADJUSTMENTS
THIRTY MONTHS INSPECTION

ROUND NO. 7

| | HYDROCARBONS PPM | | | | CARBON MONOXIDE PCT. | | | | NITRIC OXIDE PPM | | | | CORR. NO PPM | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TRUCK NUMBER | AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. | AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. | AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. | AS RECEIVED | IN SPEC | DIFF. | PCT. DIFF. |
| 8 | 303 | 249 | -54 | -17.8 | 3.11 | 2.63 | -.48 | -15.4 | 1920 | 1534 | -386 | -20.1 | 1955 | 1551 | -404 | -20.7 |
| 9 | 352 | 265 | -87 | -24.7 | 4.42 | 4.41 | -.01 | -.2 | 1343 | 1161 | -182 | -13.6 | 1317 | 1126 | -191 | -14.5 |

| AVERAGE PERCENT CHANGE | | |
|---|---|---|
| | HC | -21.3 |
| | CO | -7.8 |
| | NO | -16.8 |
| | CORR NO | -17.6 |

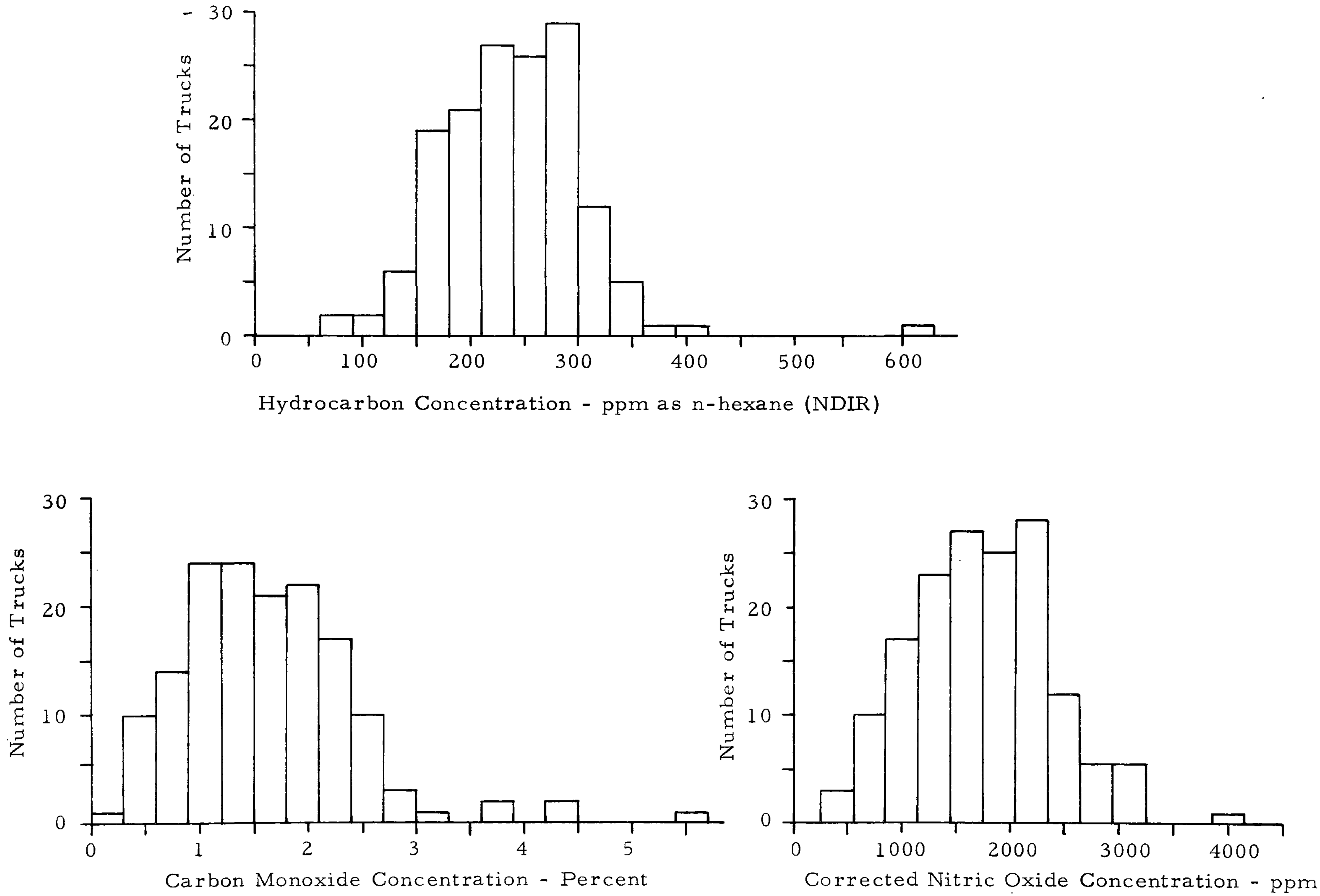



FIGURE D-1. FREQUENCY DISTRIBUTION OF EXHAUST EMISSION LEVELS FOR FIRST ROUND INSPECTIONS (152 TRUCKS)

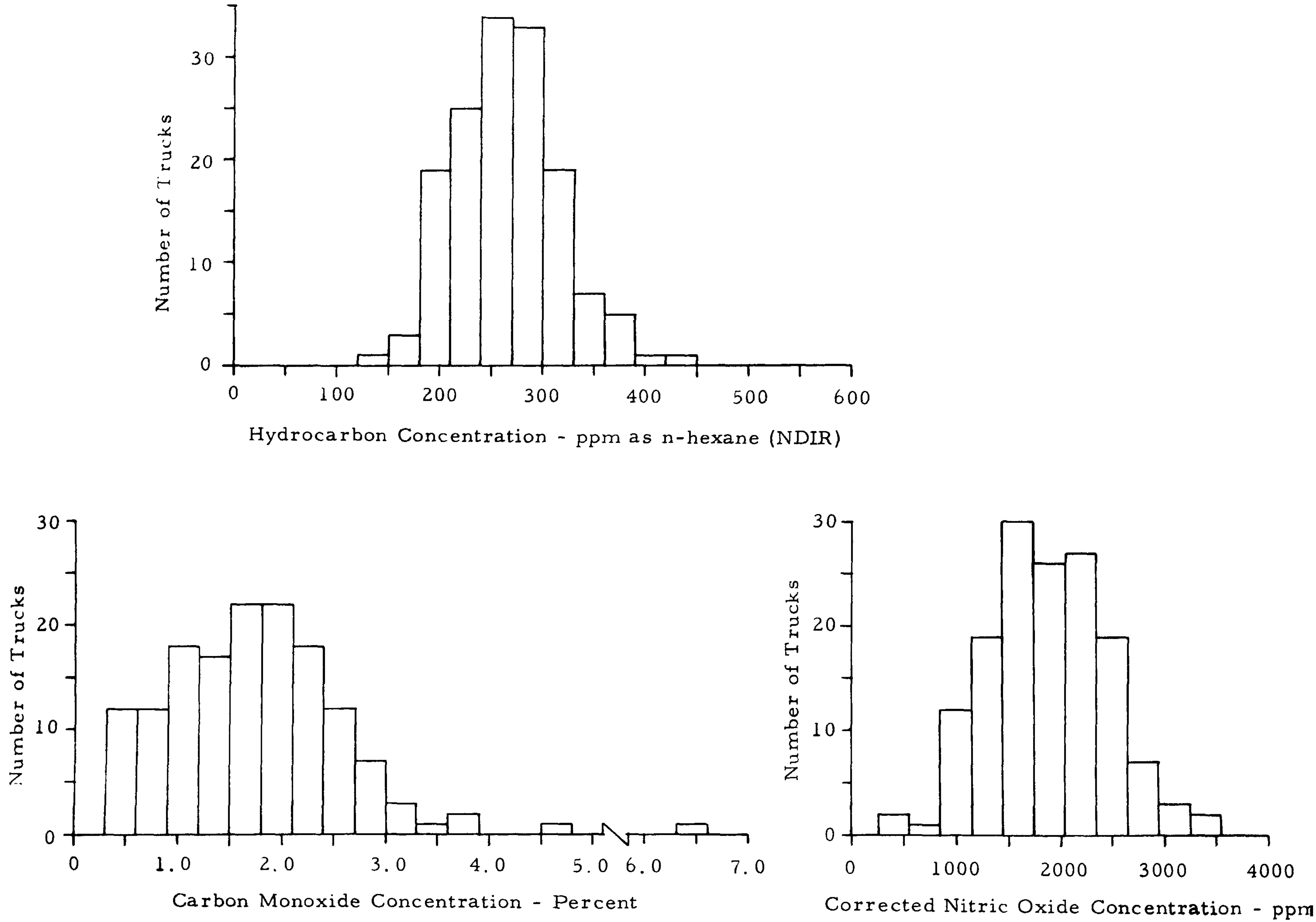



FIGURE D-2. FREQUENCY DISTRIBUTION OF EXHAUST EMISSION LEVELS FOR SECOND ROUND INSPECTIONS (148 TRUCKS)

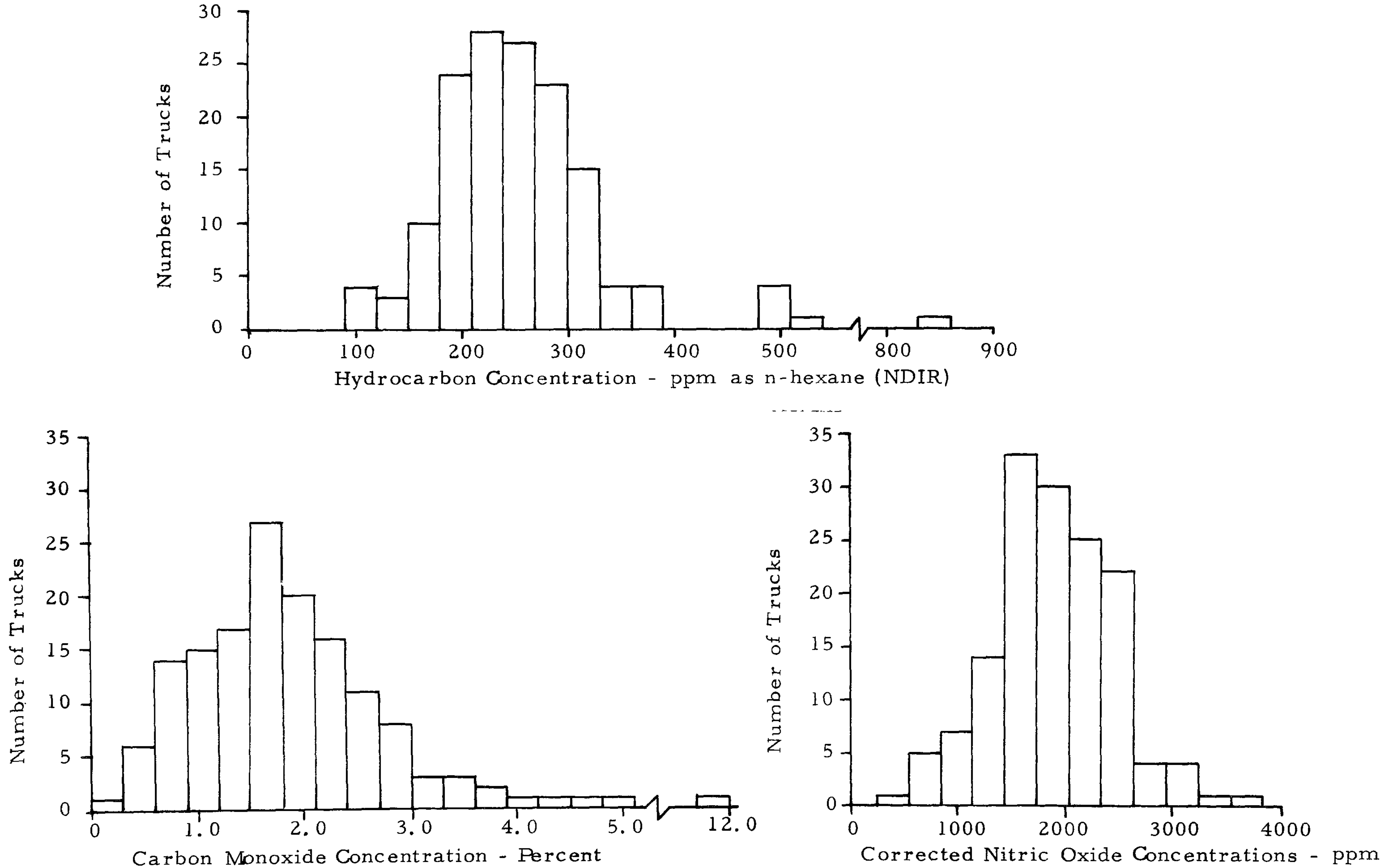



FIGURE D-3. FREQUENCY DISTRIBUTION OF EXHAUST EMISSION LEVELS FOR THIRD ROUND INSPECTIONS (148 TRUCKS)

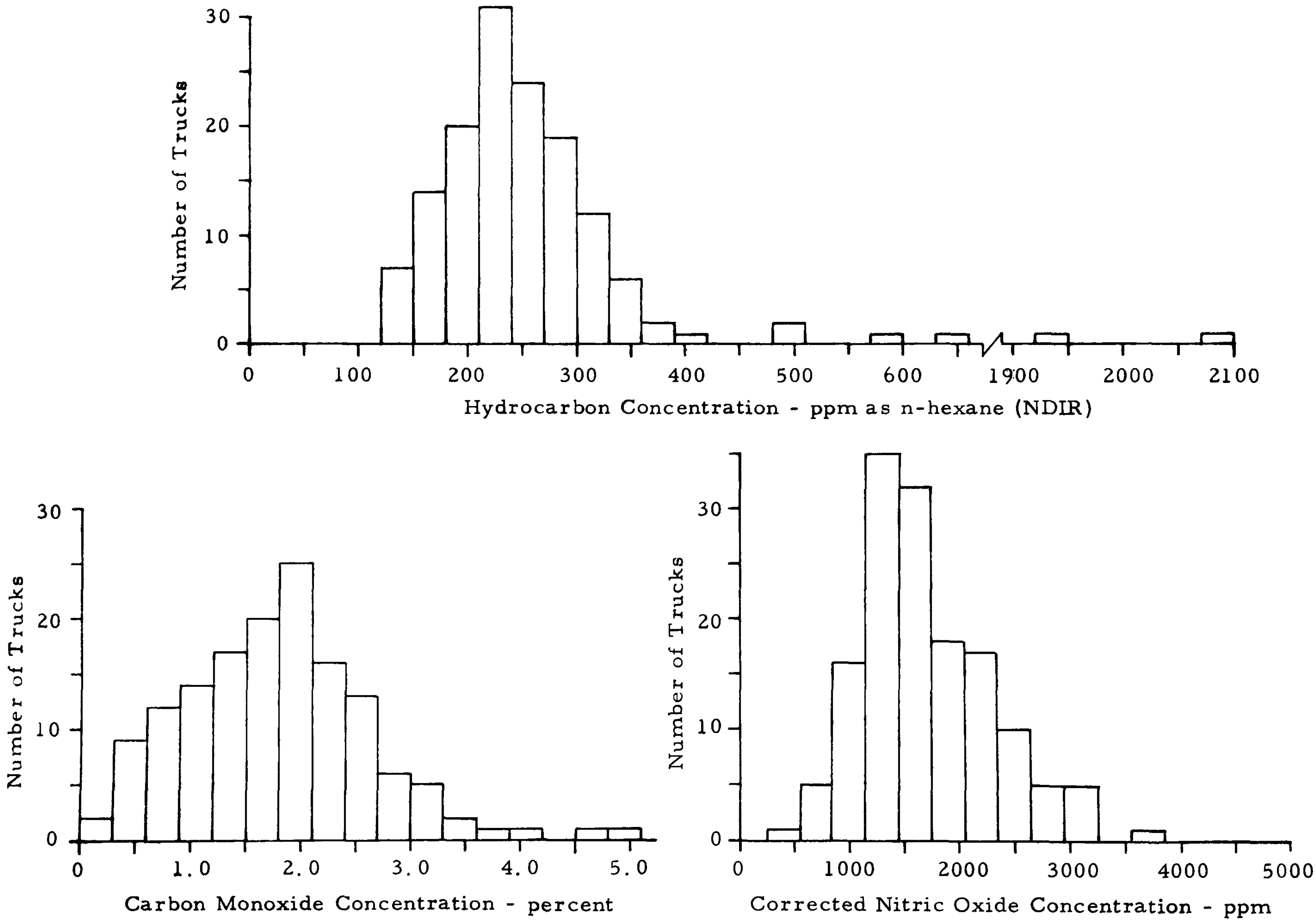



FIGURE D-4. FREQUENCY DISTRIBUTION OF EXHAUST EMISSION LEVELS FOR FOURTH ROUND INSPECTIONS (145 TRUCKS)

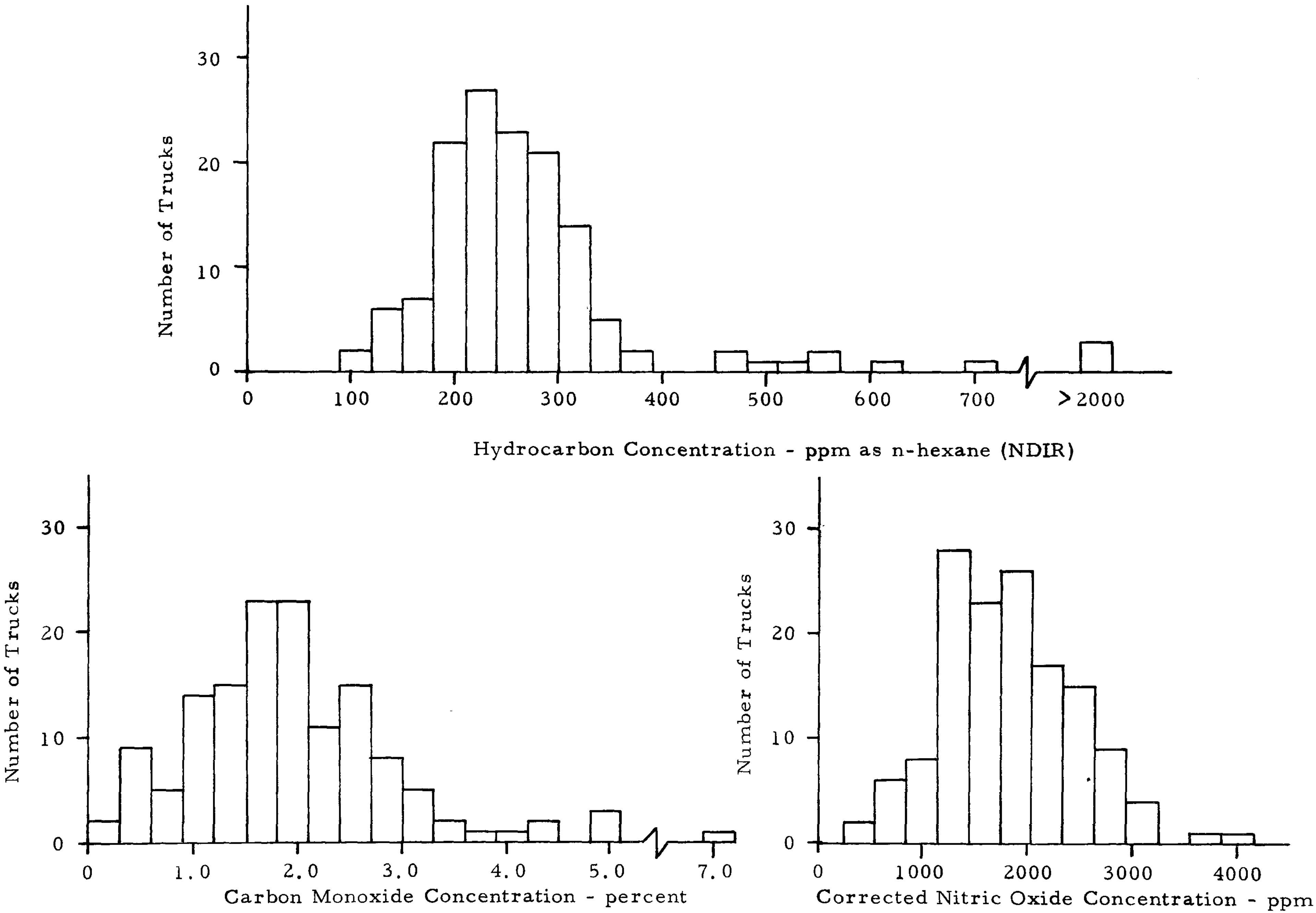



FIGURE D-5. FREQUENCY DISTRIBUTION OF EXHAUST EMISSION LEVELS FOR FIFTH ROUND INSPECTIONS (140 TRUCKS)

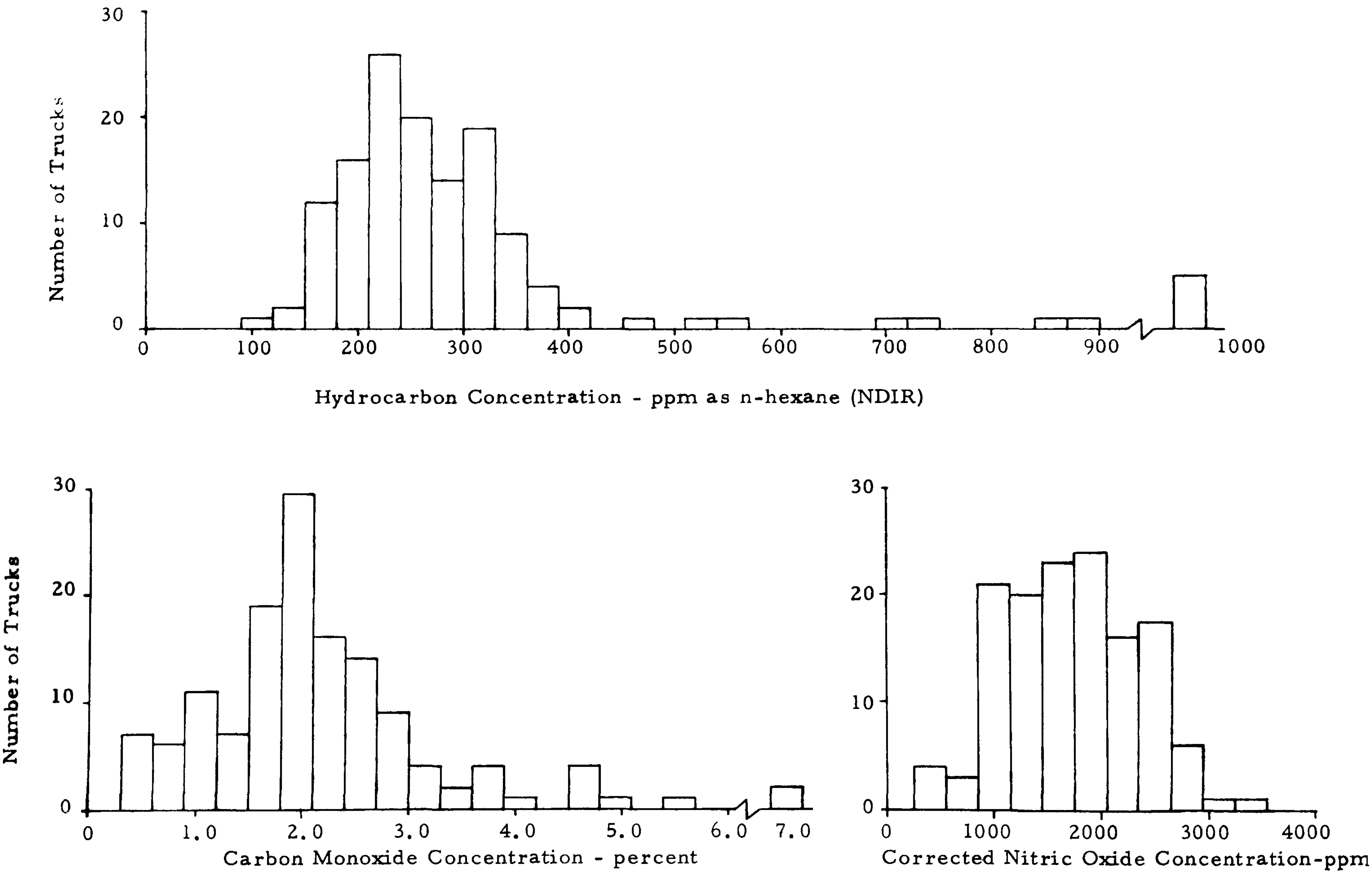



FIGURE D-6. FREQUENCY DISTRIBUTION OF EXHAUST EMISSION LEVELS FOR SIXTH ROUND INSPECTIONS (137 TRUCKS)

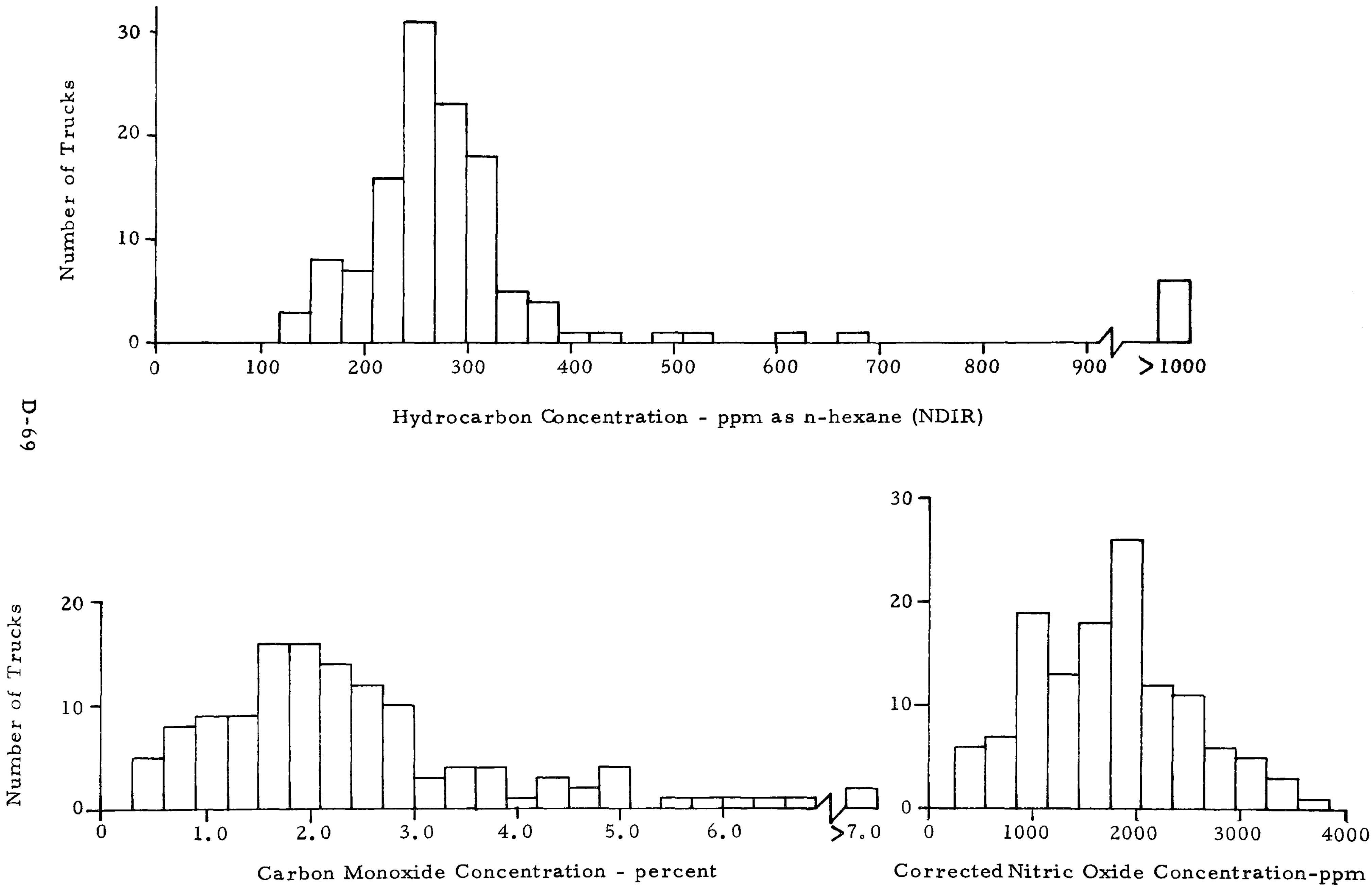



FIGURE D-7. FREQUENCY DISTRIBUTION OF EXHAUST EMISSION LEVELS FOR SEVENTH ROUND INSPECTIONS (127 TRUCKS)

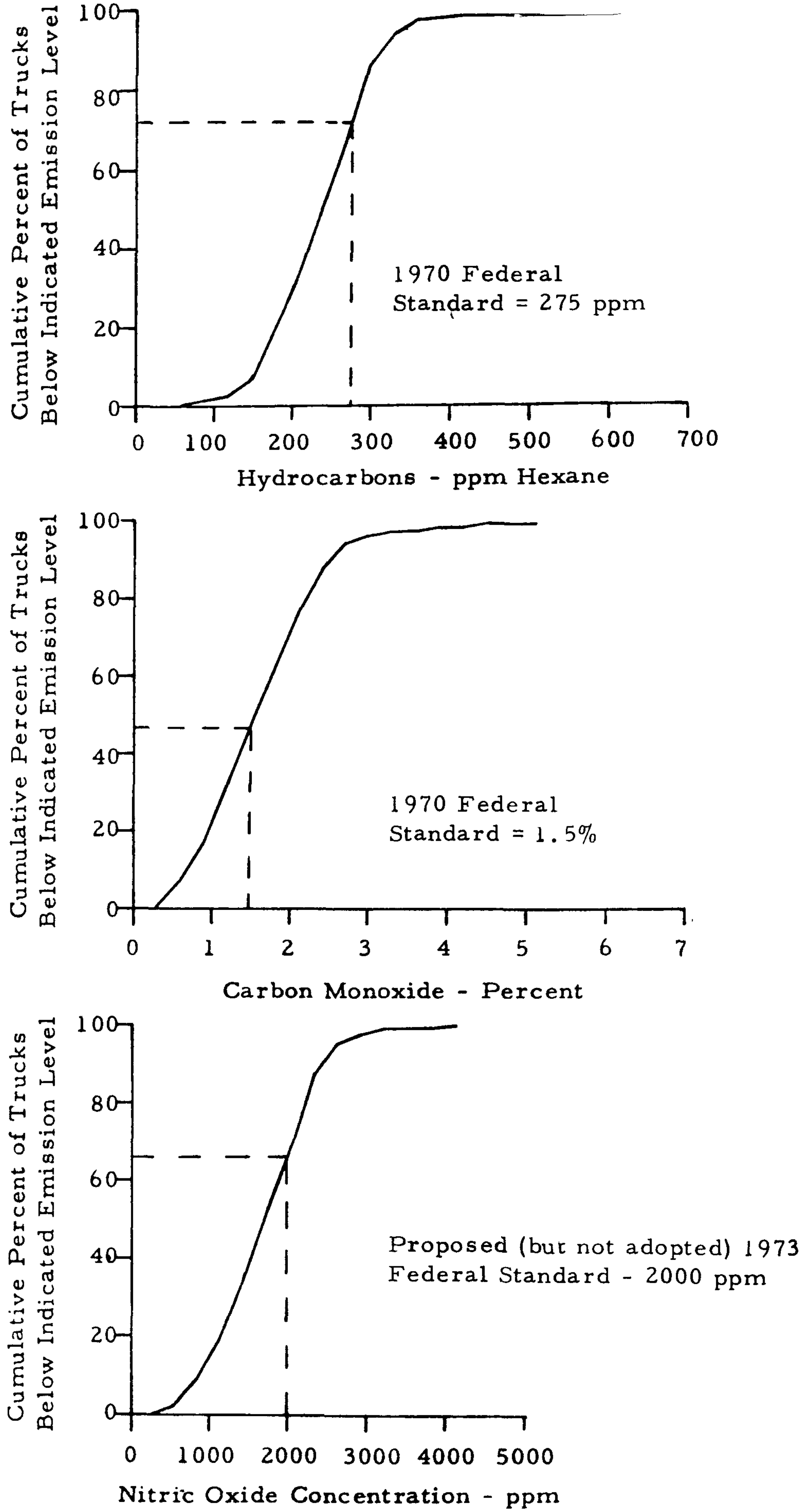
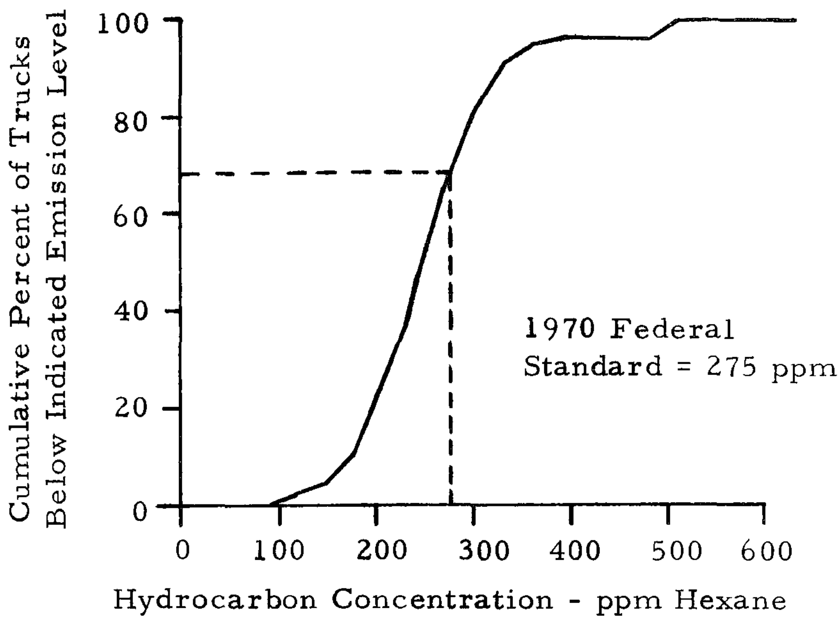
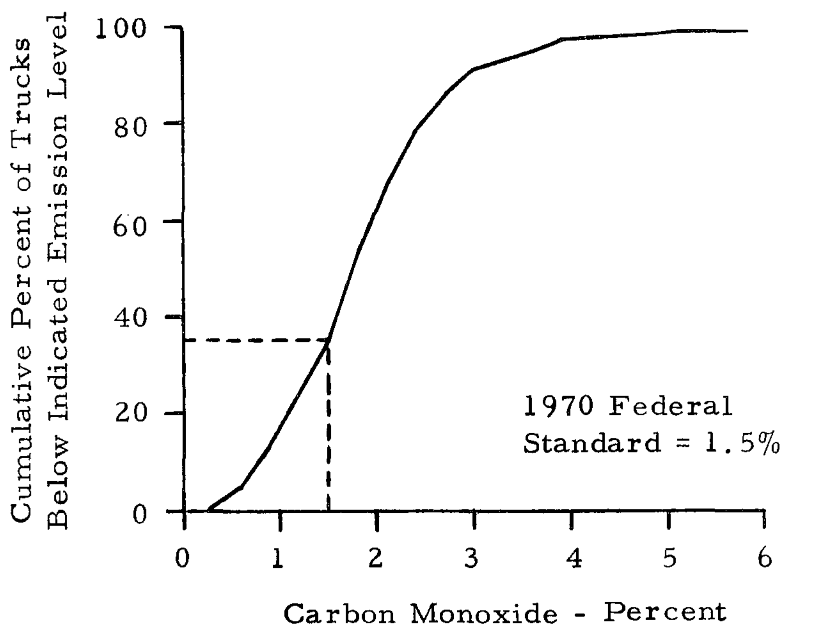



FIGURE D-8 CUMULATIVE FREQUENCY DISTRIBUTION OF EXHAUST EMISSION LEVELS FOR FIRST ROUND INSPECTIONS (152 TRUCKS)



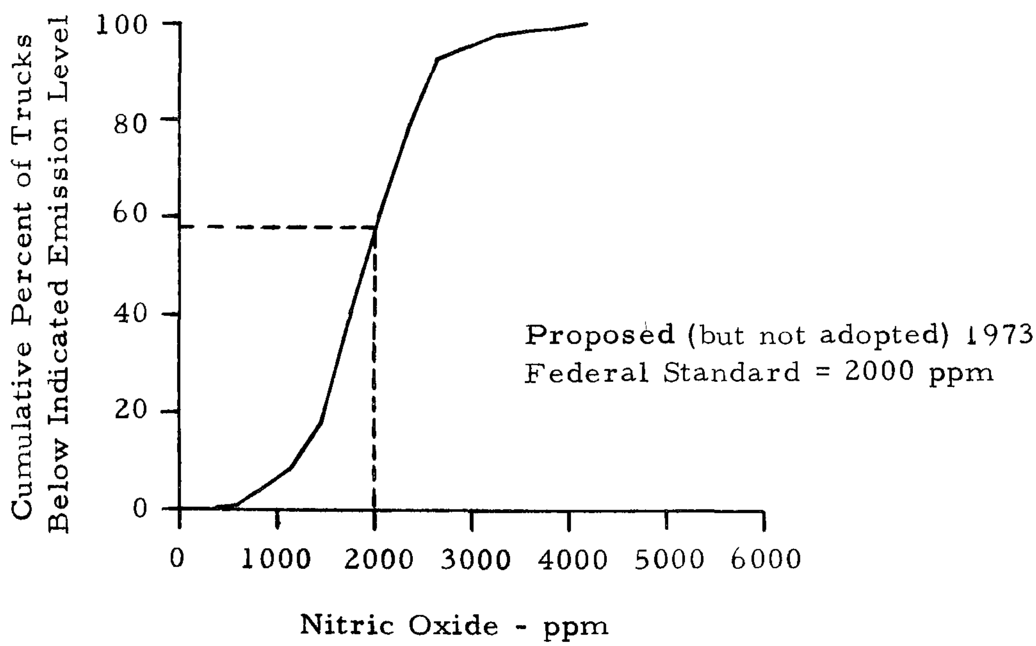




FIGURE D-9. CUMULATIVE FREQUENCY DISTRIBUTION OF EXHAUST EMISSION LEVELS FOR THIRD ROUND INSPECTIONS (148 TRUCKS)

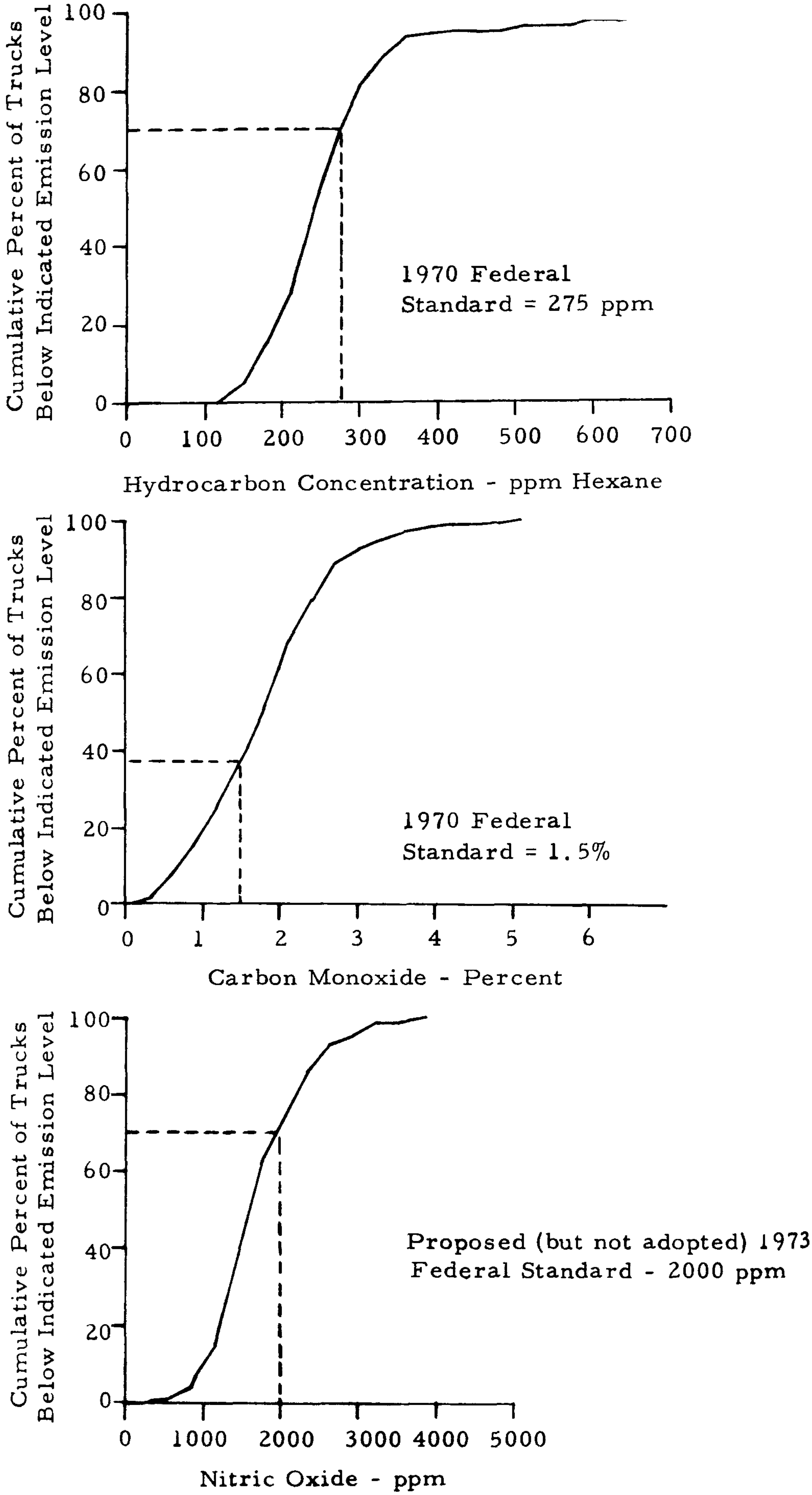
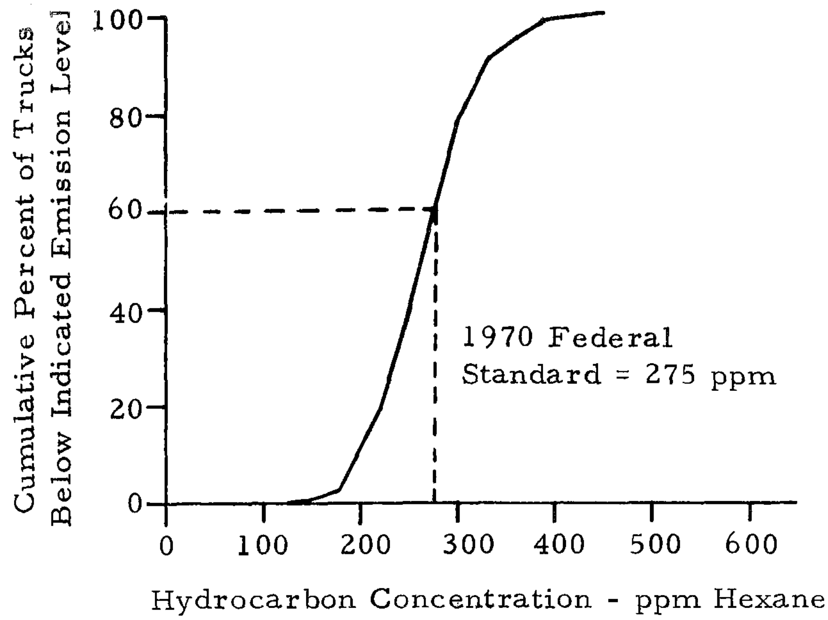
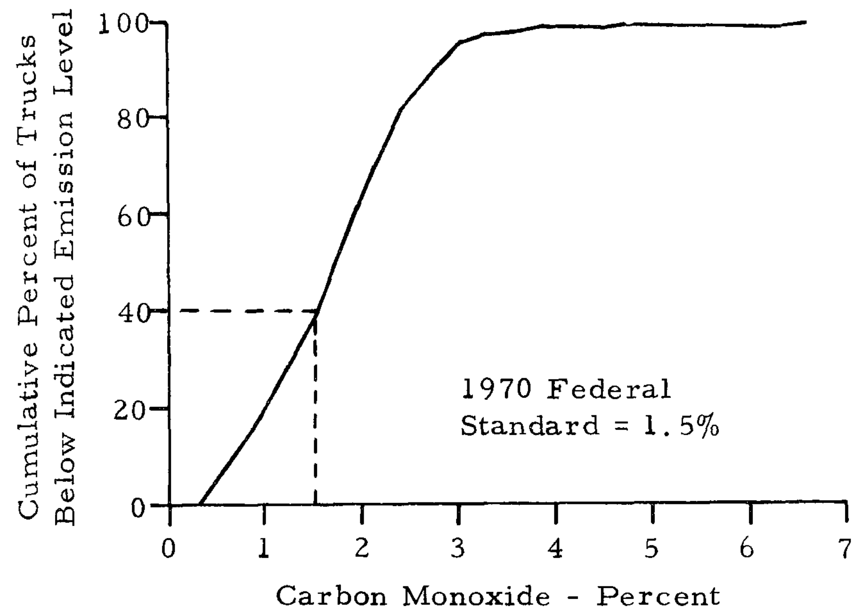



FIGURE D-10. CUMULATIVE FREQUENCY DISTRIBUTION OF EXHAUST EMISSION LEVELS FOR FOURTH ROUND INSPECTIONS (145 TRUCKS)



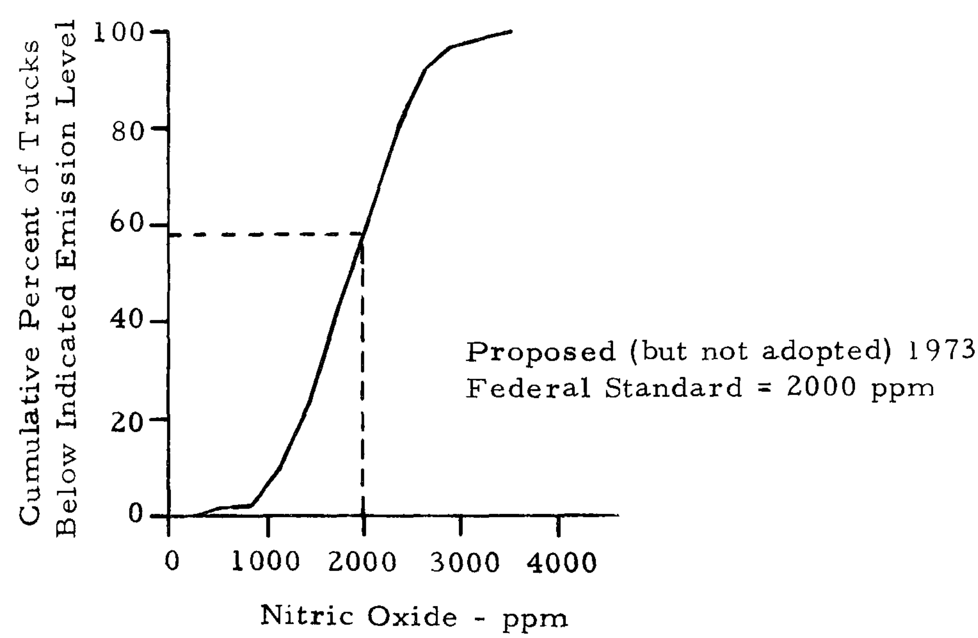




FIGURE D-11. CUMULATIVE FREQUENCY DISTRIBUTION OF EXHAUST EMISSION LEVELS FOR SECOND ROUND INSPECTIONS (148 TRUCKS)

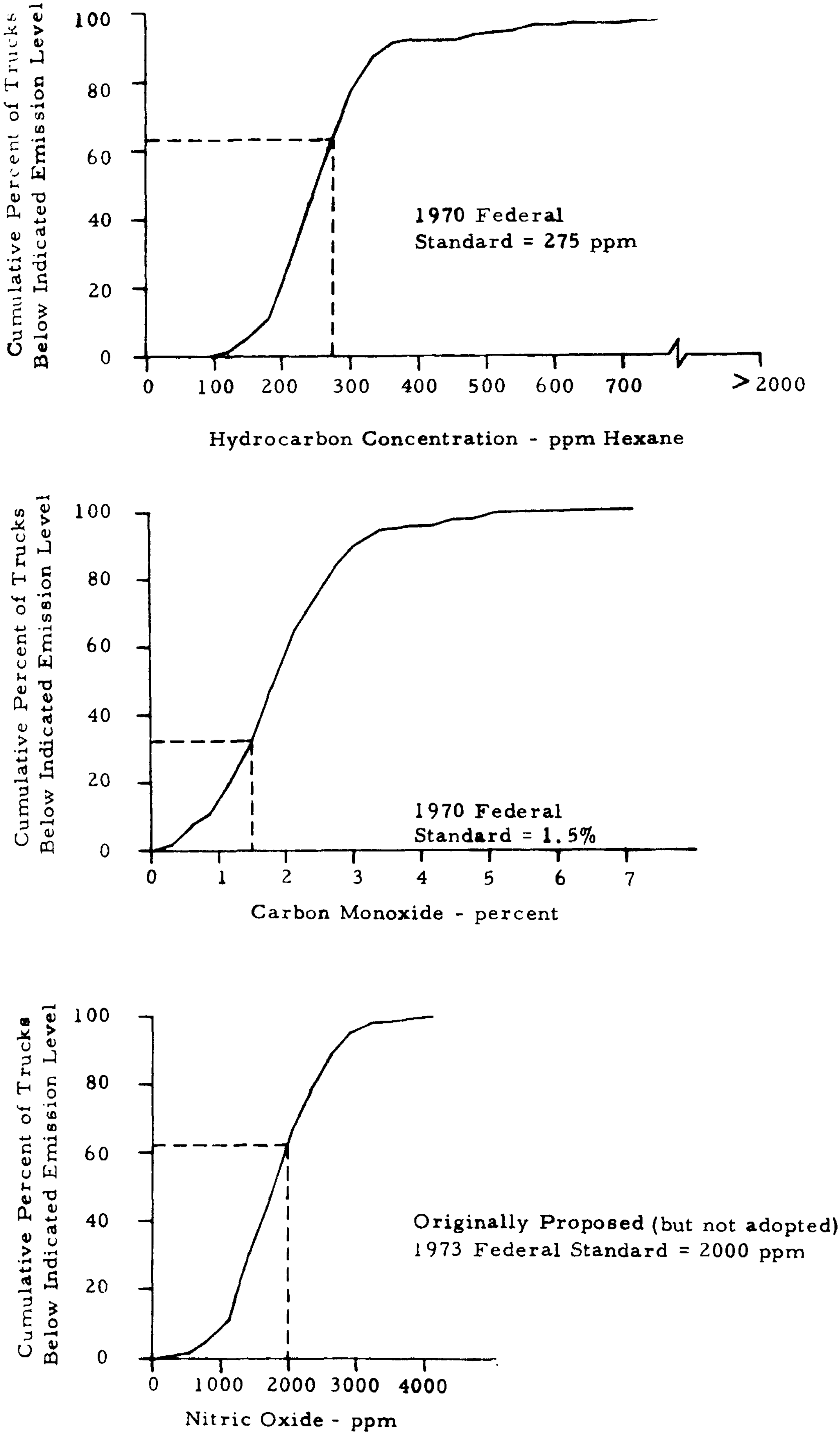
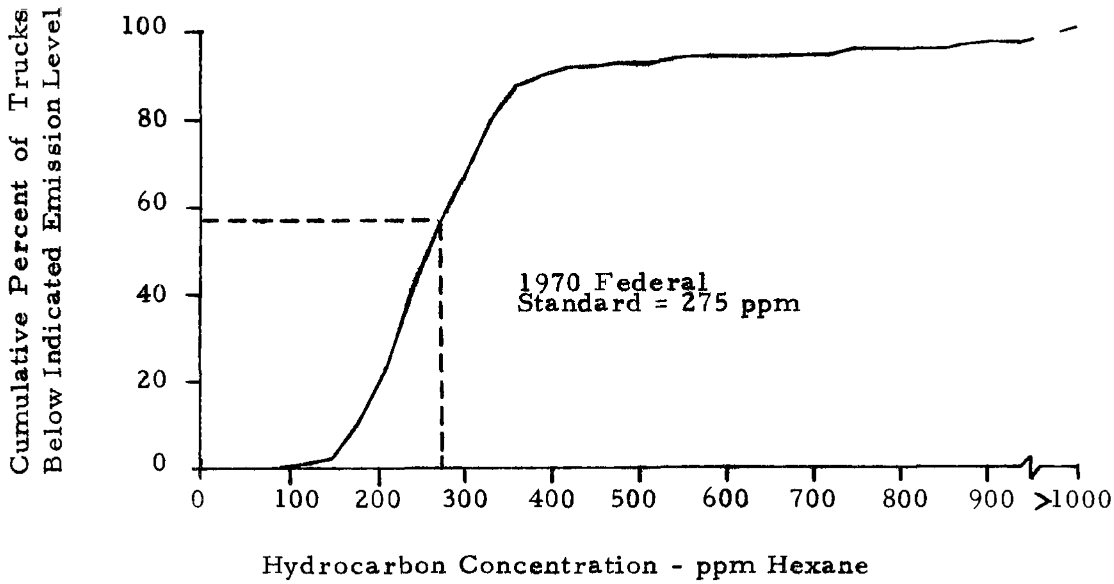
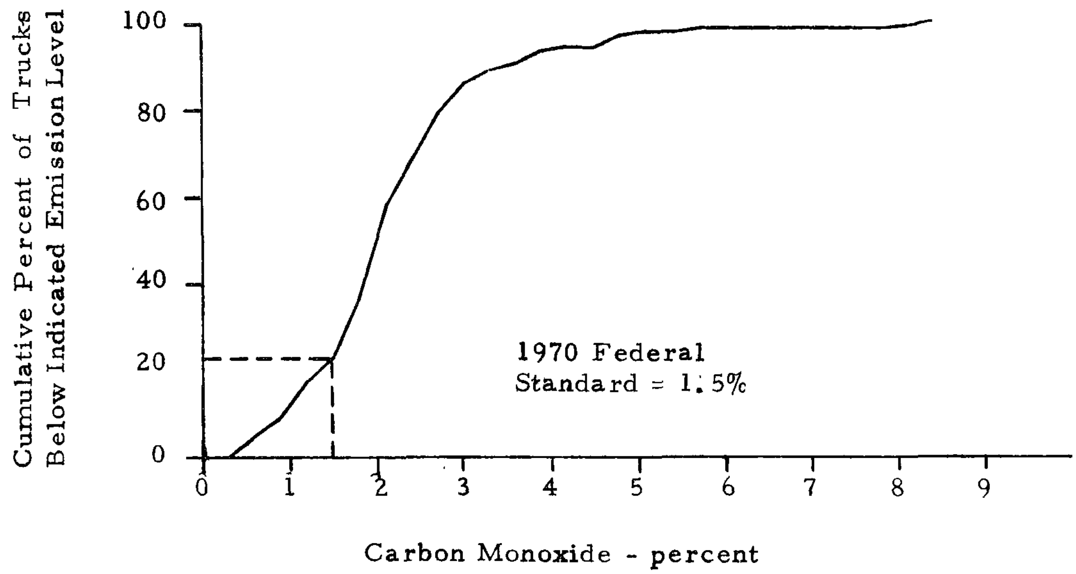



FIGURE D-12. CUMULATIVE FREQUENCY DISTRIBUTION OF EXHAUST EMISSION LEVELS FOR FIFTH ROUND INSPECTIONS (140 TRUCKS)



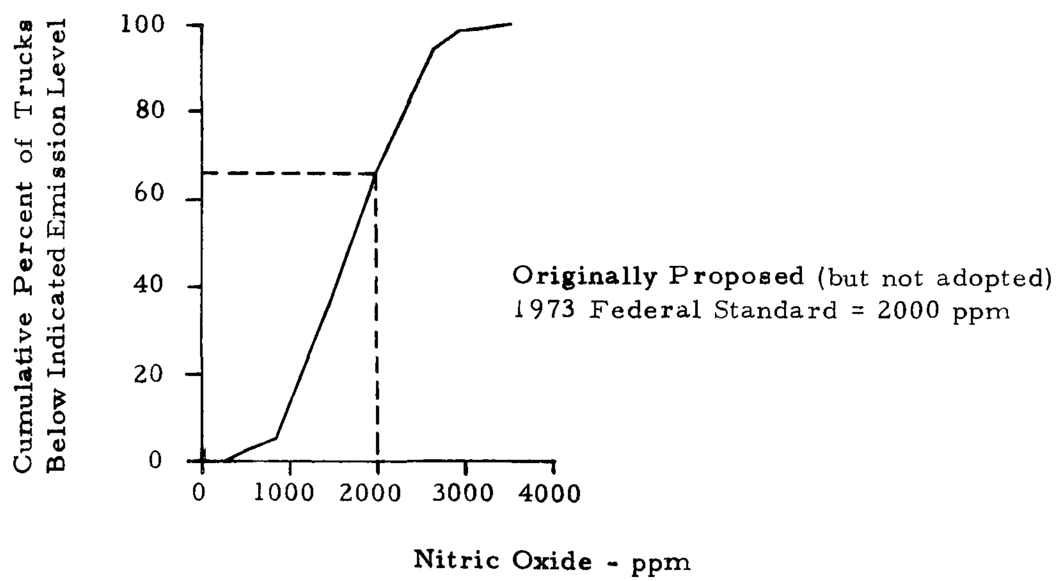




FIGURE D-13. CUMULATIVE FREQUENCY DISTRIBUTION OF EXHAUST EMISSION LEVELS FOR SIXTH ROUND INSPECTIONS (137 TRUCKS)

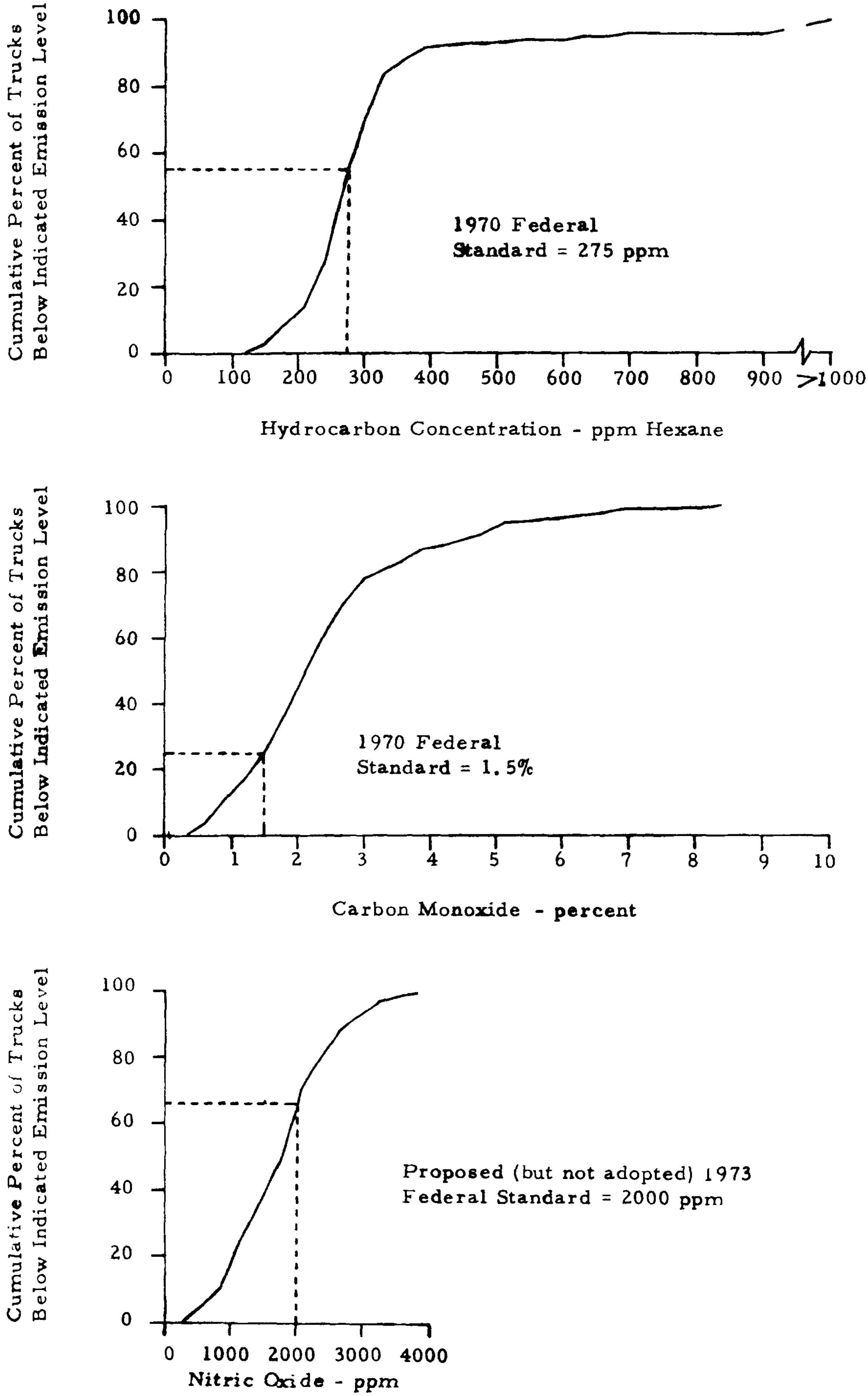



FIGURE D-14. CUMULATIVE FREQUENCY DISTRIBUTION OF EXHAUST EMISSION LEVELS FOR SEVENTH ROUND INSPECTIONS (127 TRUCKS)

# APPENDIX E

## RESULTS OF FOUR INSPECTION ROUNDS BY INDIVIDUAL TRUCK

Note: * on computer printout sheets indicates multiplier

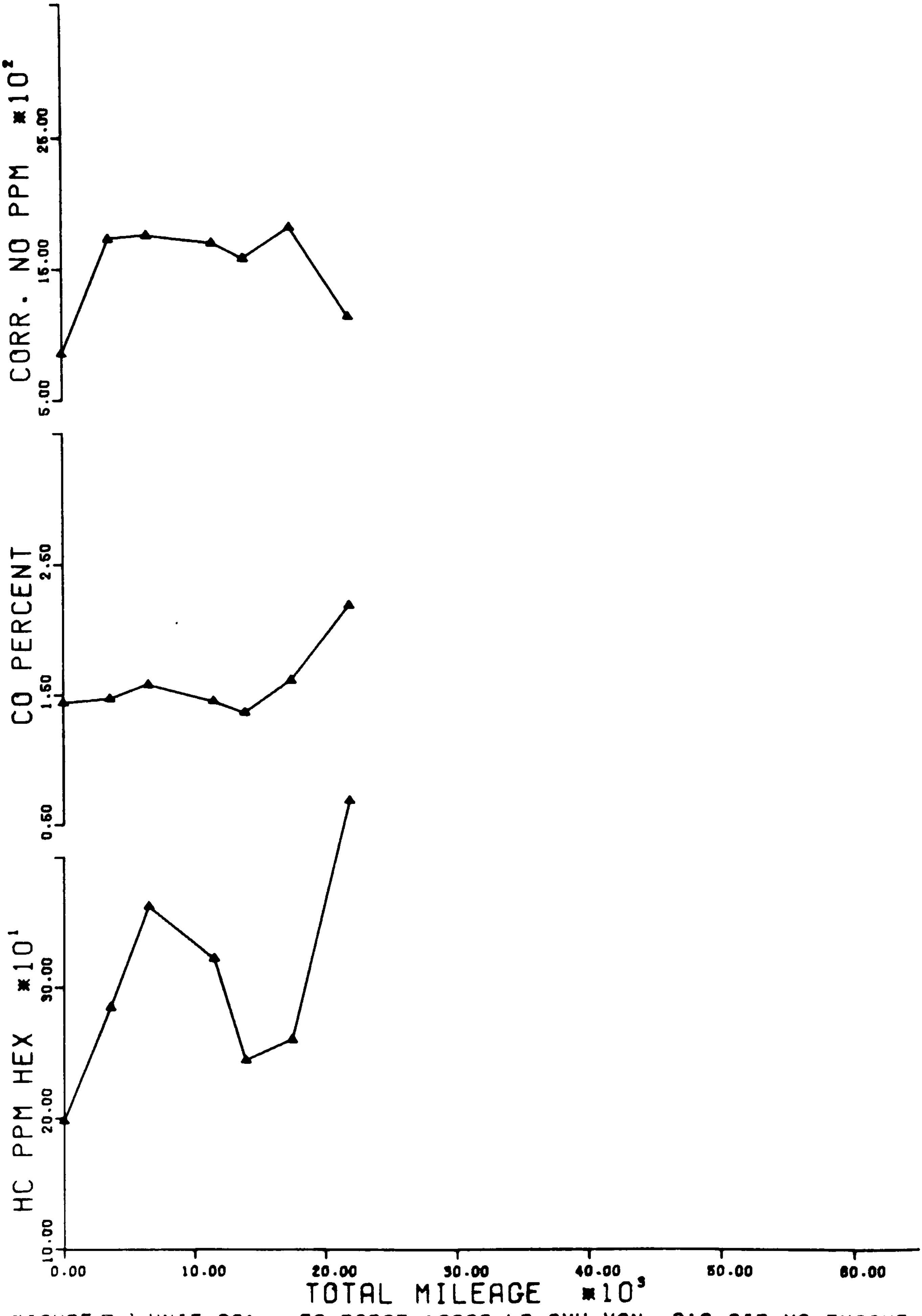



FIGURE E-1.UNIT 001 70 DODGE 10000 LB GVW VAN 318 CID V8 ENGINE

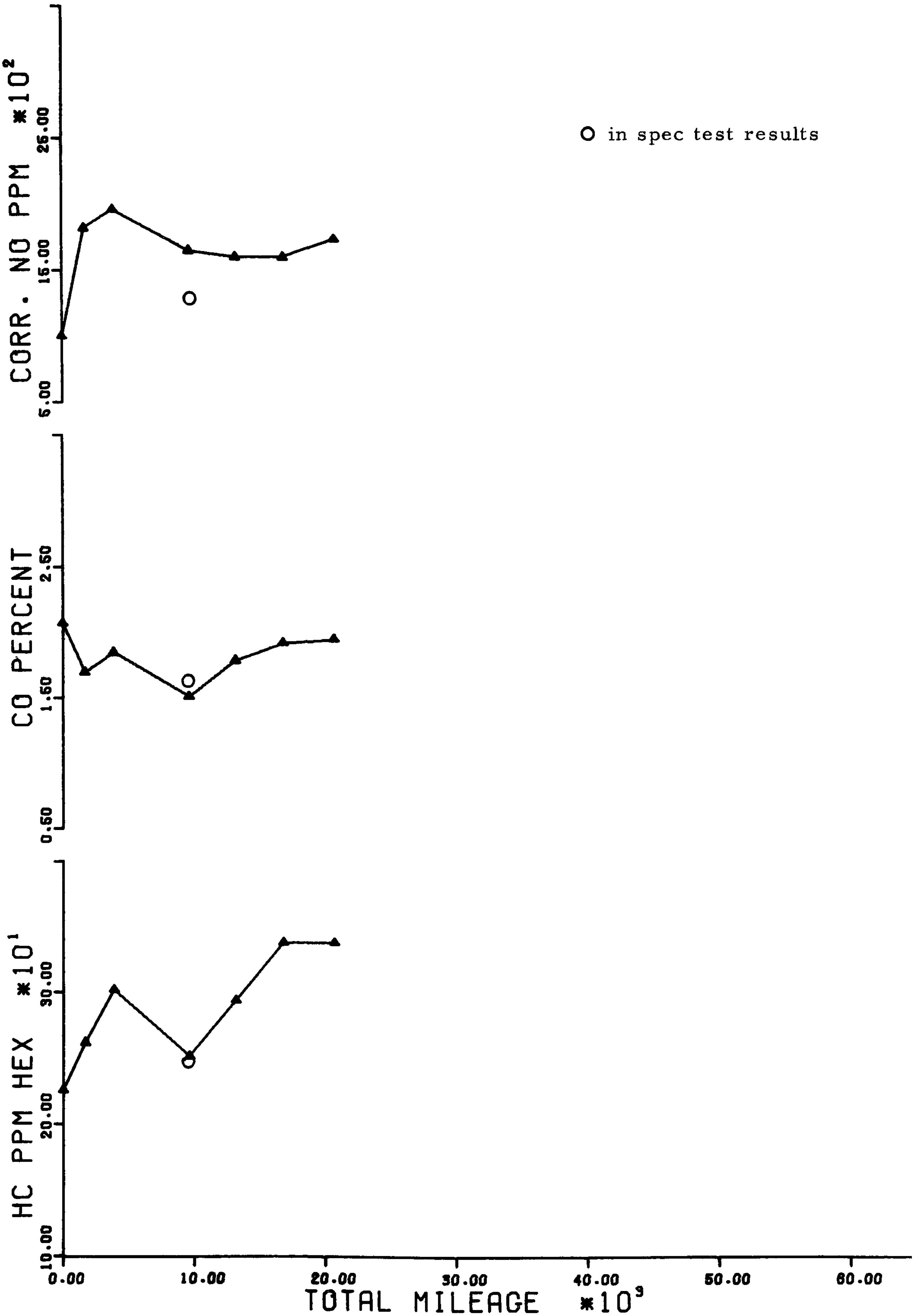



FIGURE E-2.UNIT 002 70 DODGE 10000 LB GVW VAN 318 CID V8 ENGINE

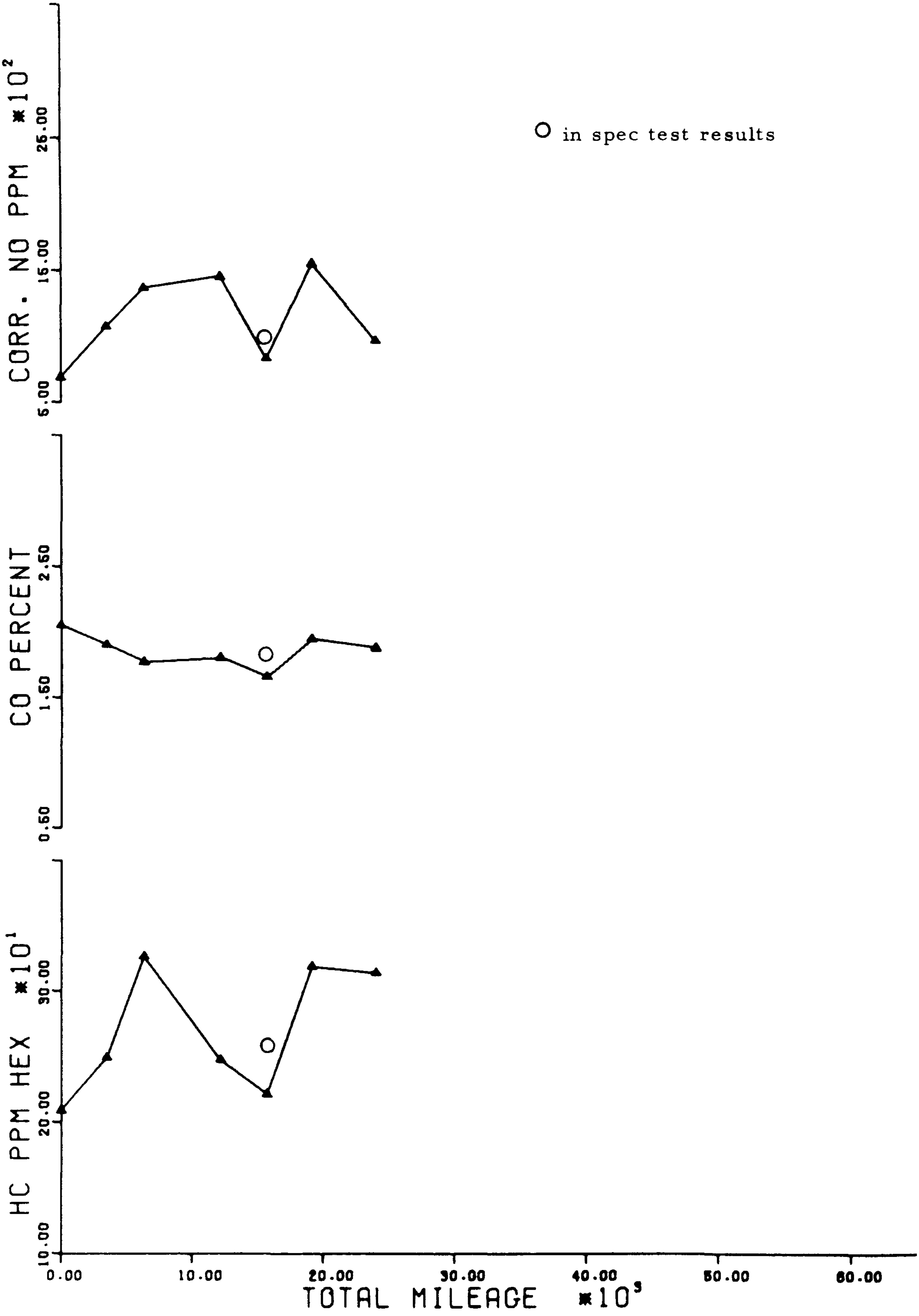



FIGURE E-3 UNIT 003 70 DODGE 10000 LB GVW VAN 318 CID V8 ENGINE

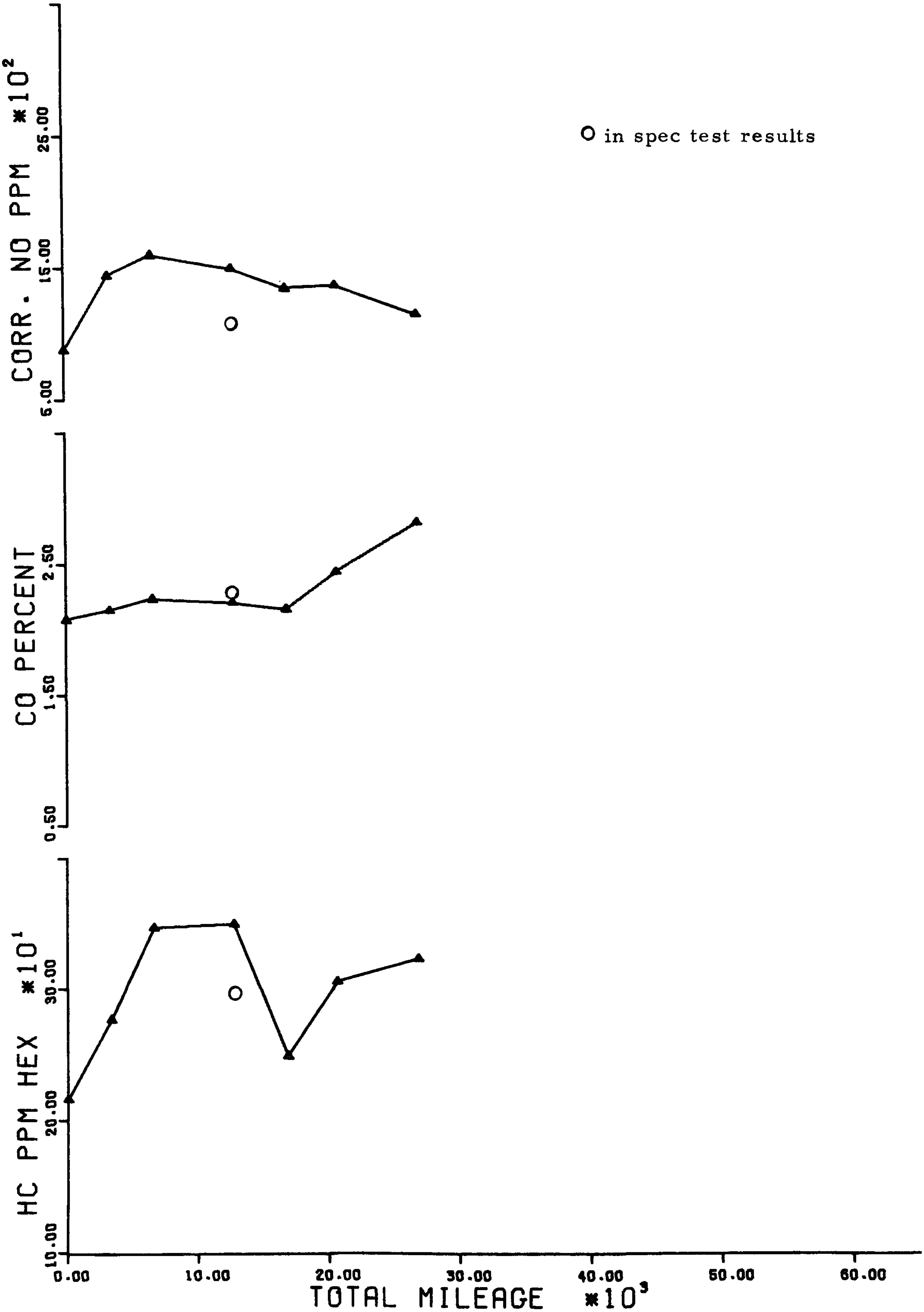



FIGURE E-4 UNIT 004 70 DODGE 10000 LB GVW VAN 318 CID V8 ENGINE

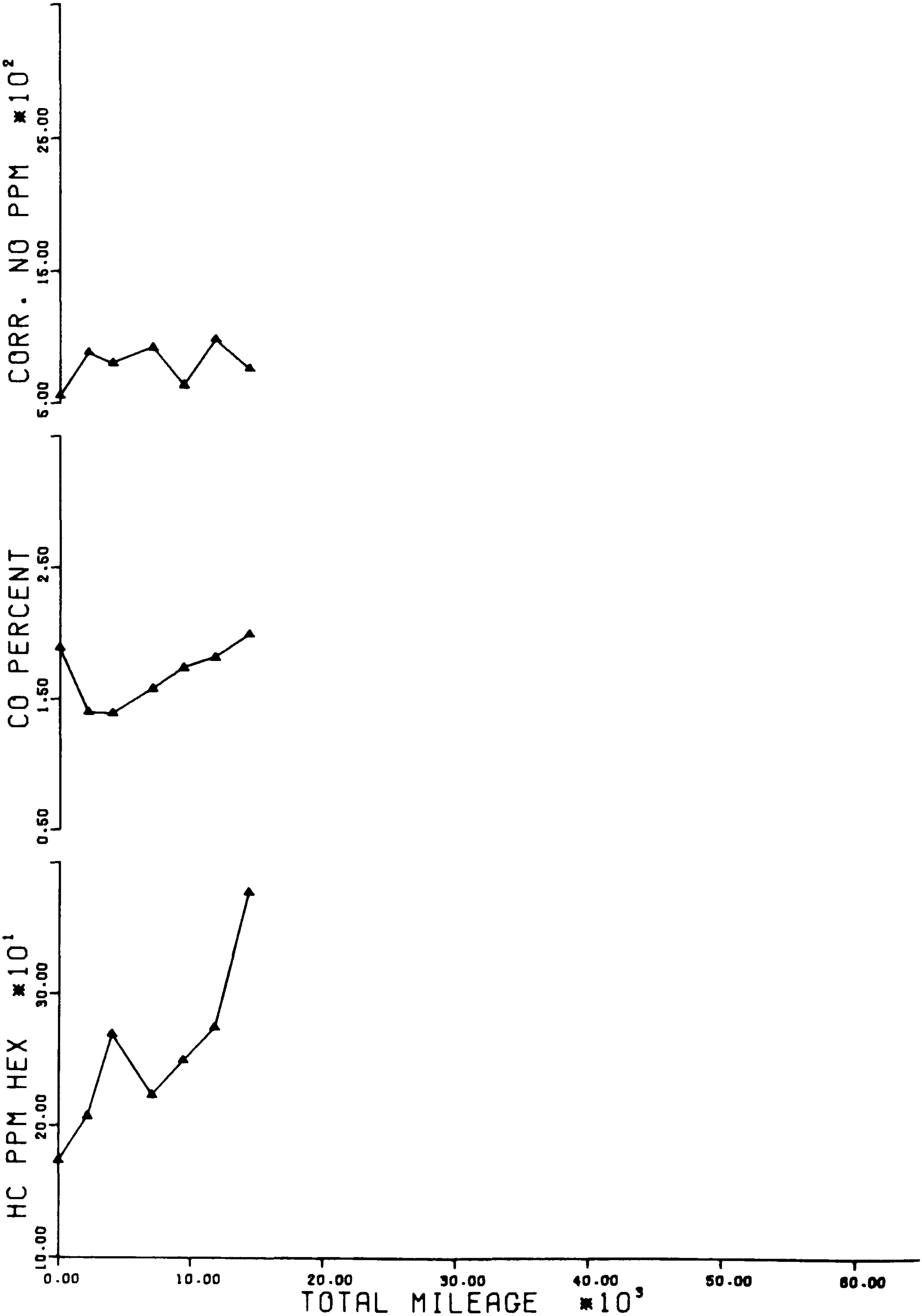



FIGURE E-5.UNIT 005 70 DODGE 10000 LB GVW VAN 318 CID V8 ENGINE

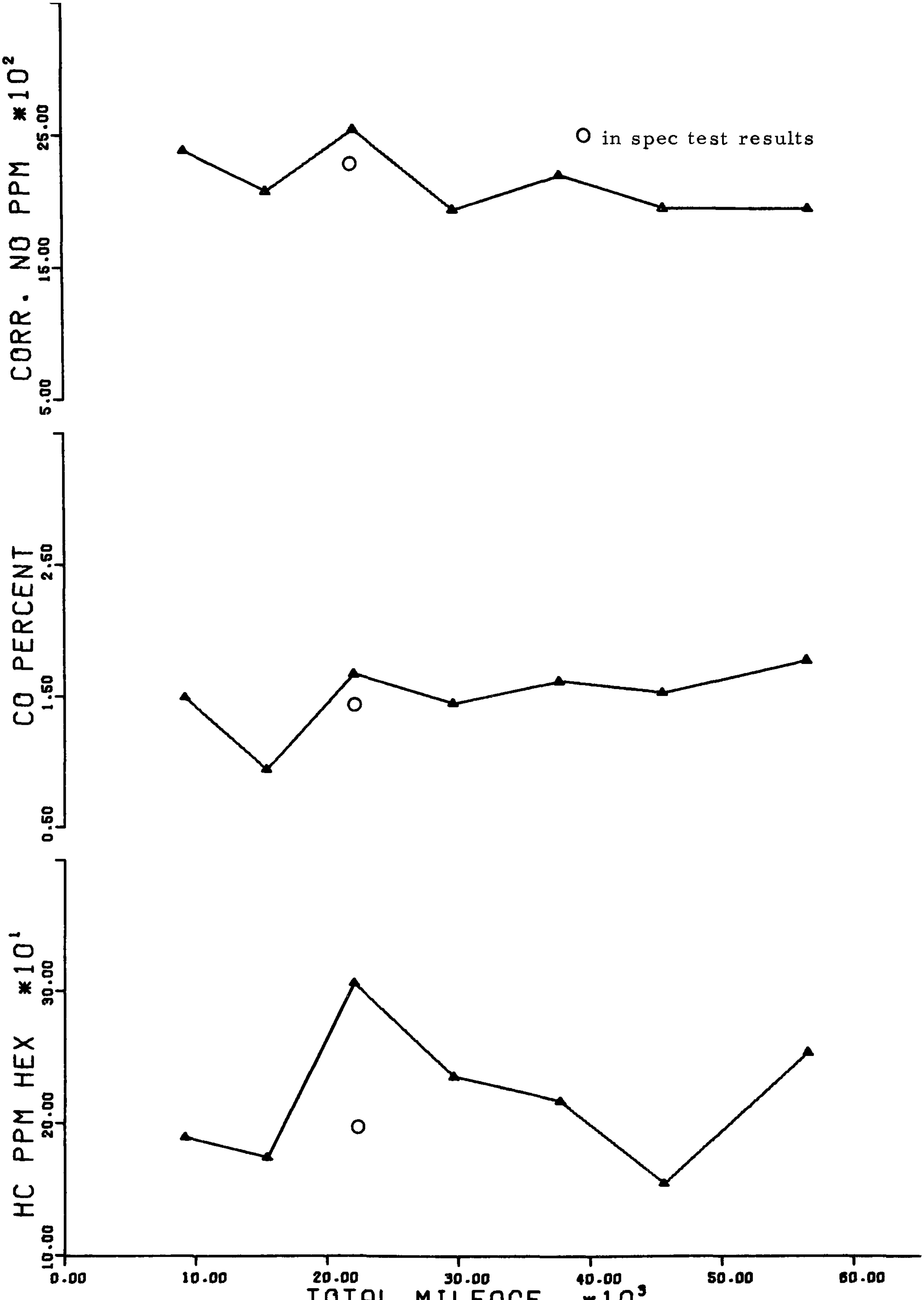



FIGURE E-6.UNIT 006 70 WHITE 30000 LB GVW TRACTOR.400 CID I6 ENGINE

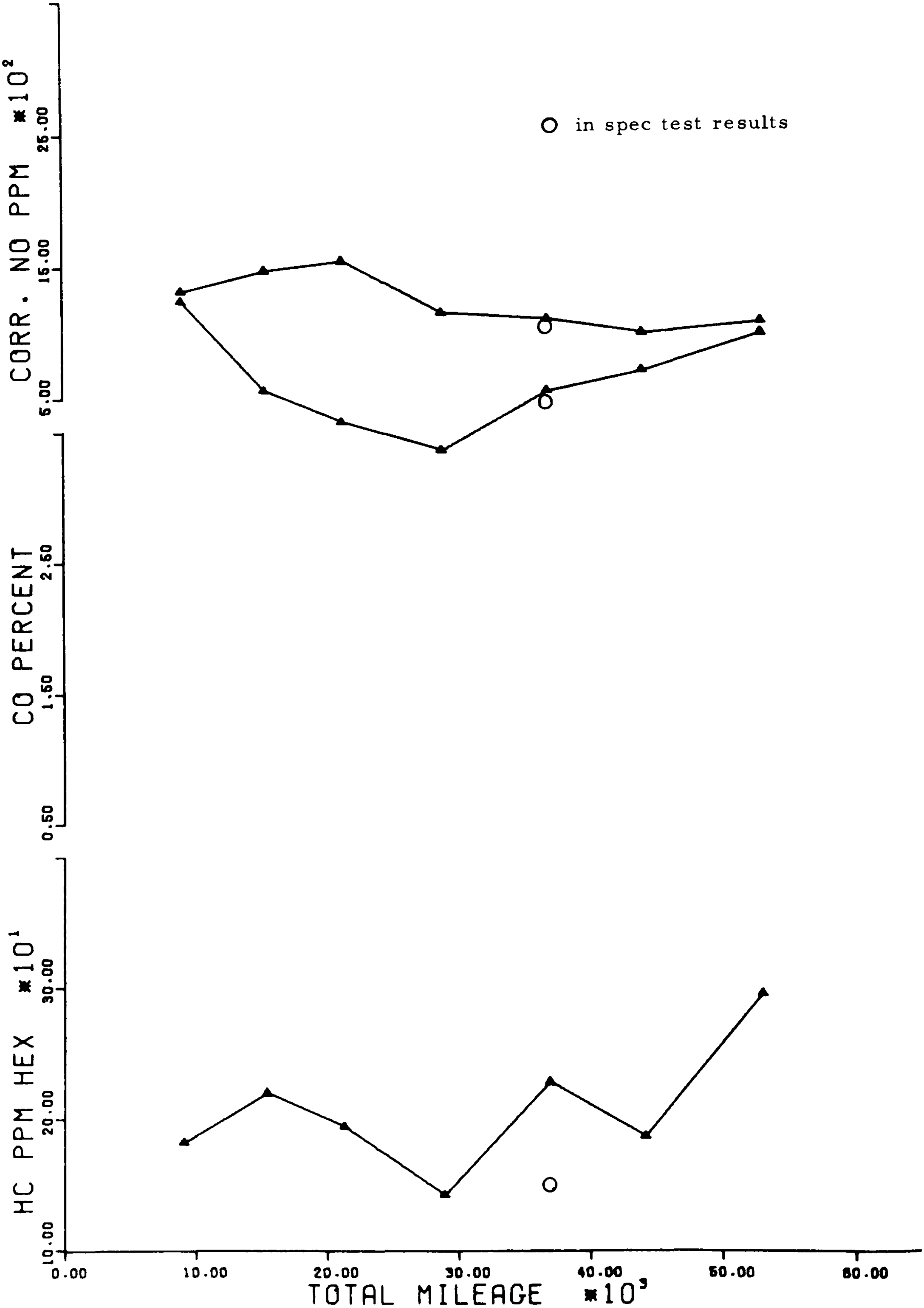



FIGURE [illegible]7.UNIT 007 70 WHITE 30000 LB GVW TRACTOR.400 CID I6 ENGINE

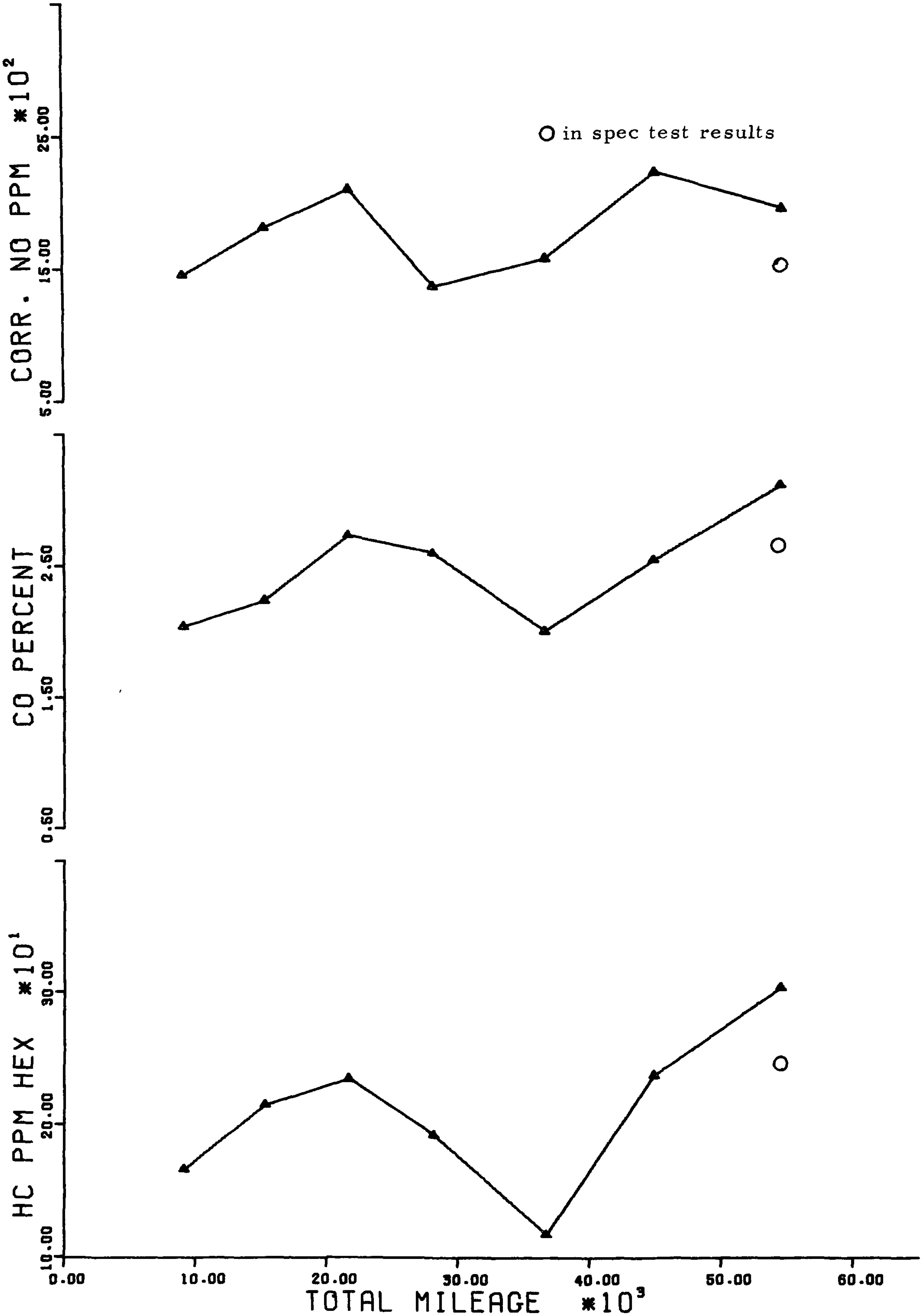


FIGURE E-8.UNIT 008 70 WHITE 30000 LB GVW TRACTOR.400 CID I6 ENGINE

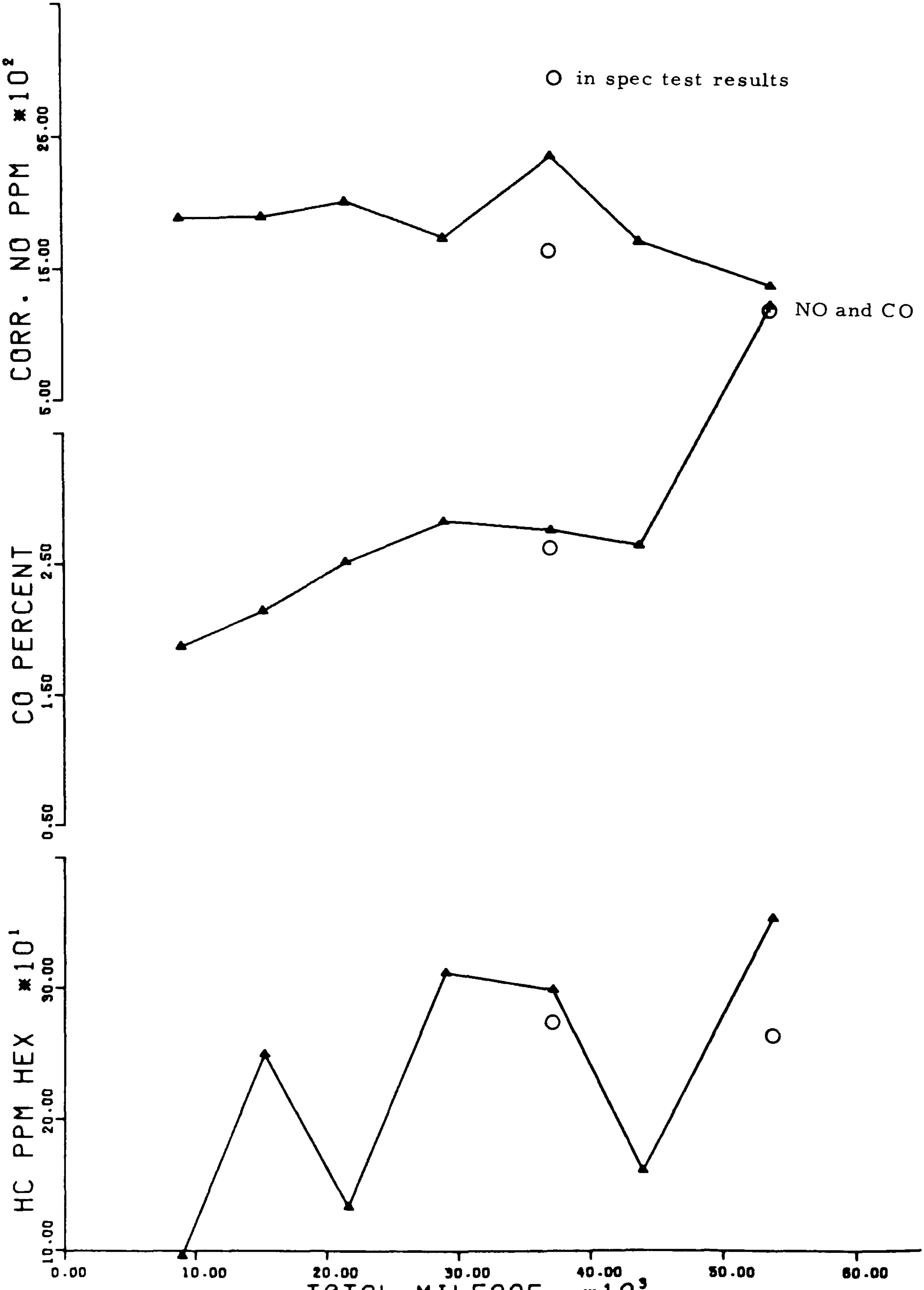



FIGURE E-9.UNIT 009 70 WHITE 30000 LB GVW TRACTOR.400 CID I6 ENGINE

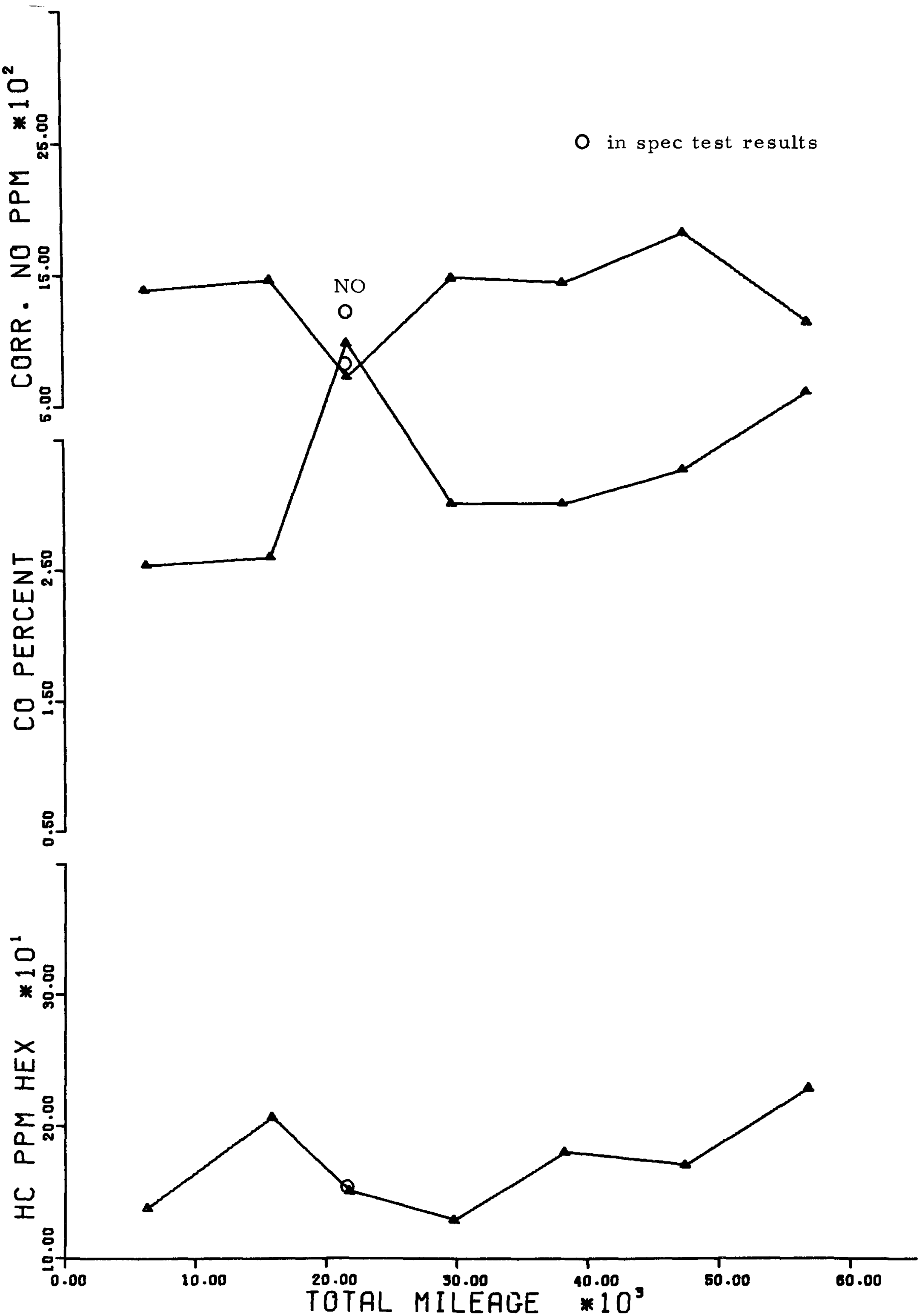


FIGURE E-10. UNIT 010 70 WHITE 30000 LB GVW TRACTOR,400 CID I6 ENGINE

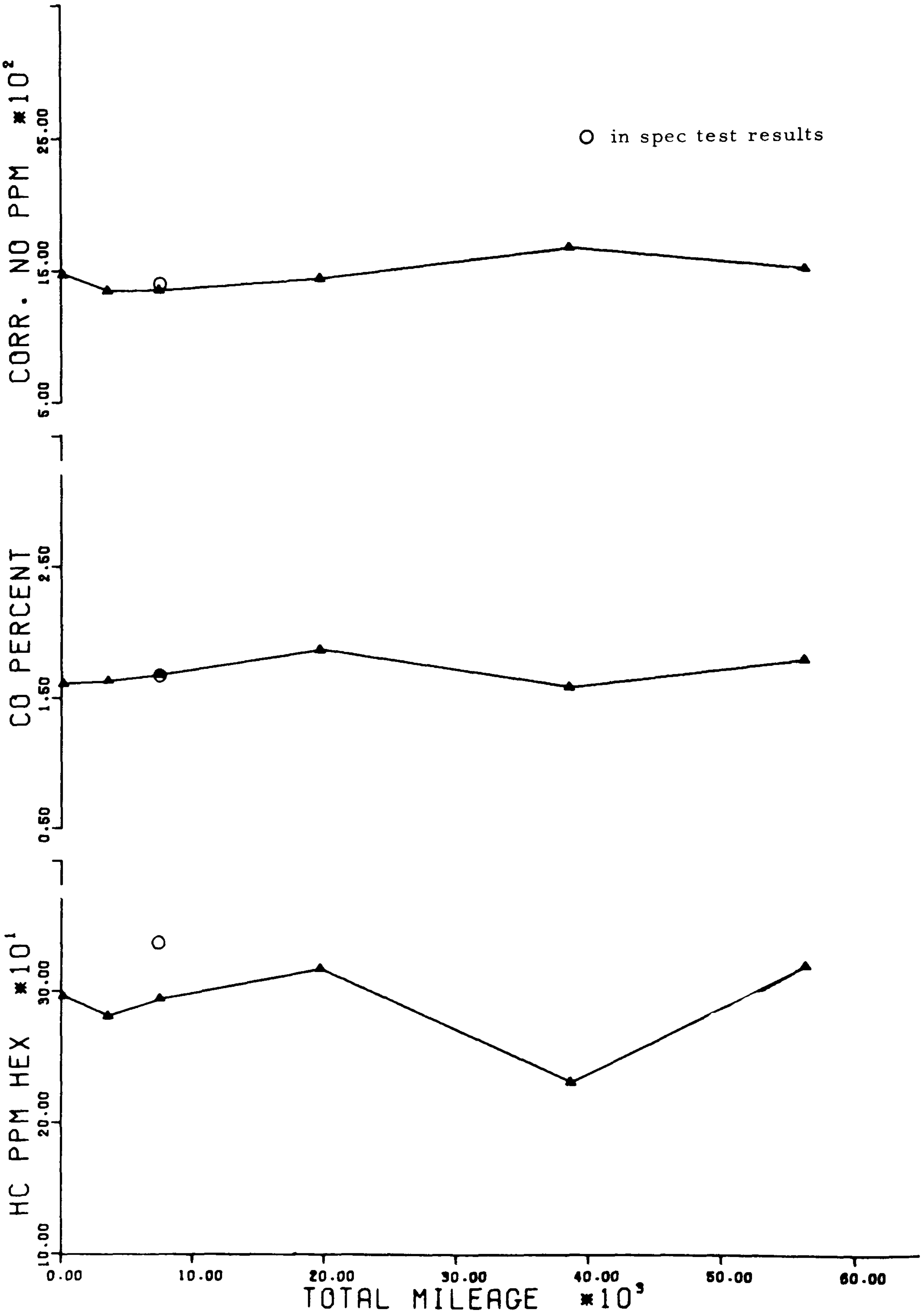



FIGURE F-11. UNIT 011 70 IHC 32000 LB GVW TRACTOR, 478 CID V8 ENGINE

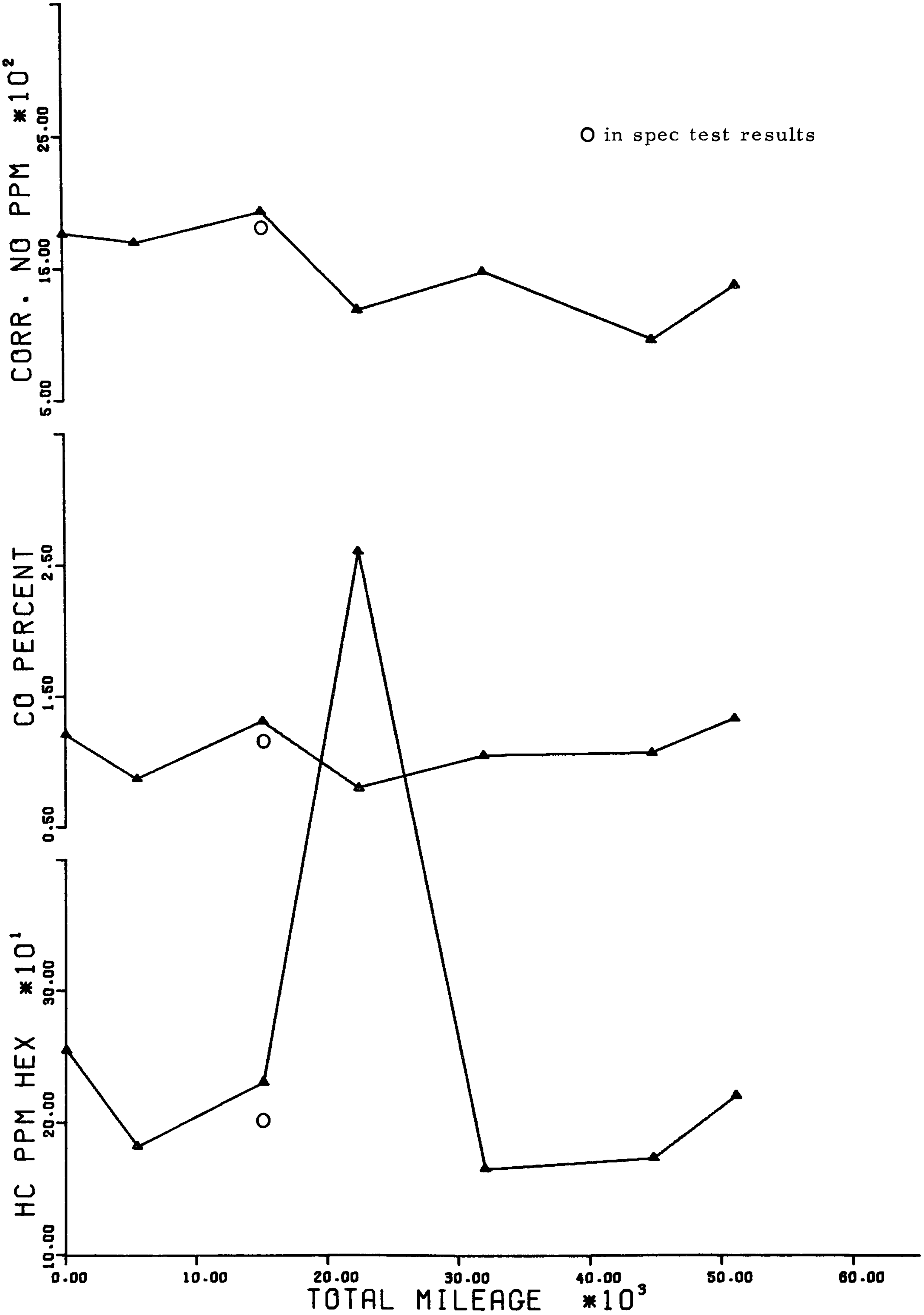



FIGURE E-12 UNIT 012 70 IHC 32000 LB GVW TRACTOR.478 CID V8 ENGINE

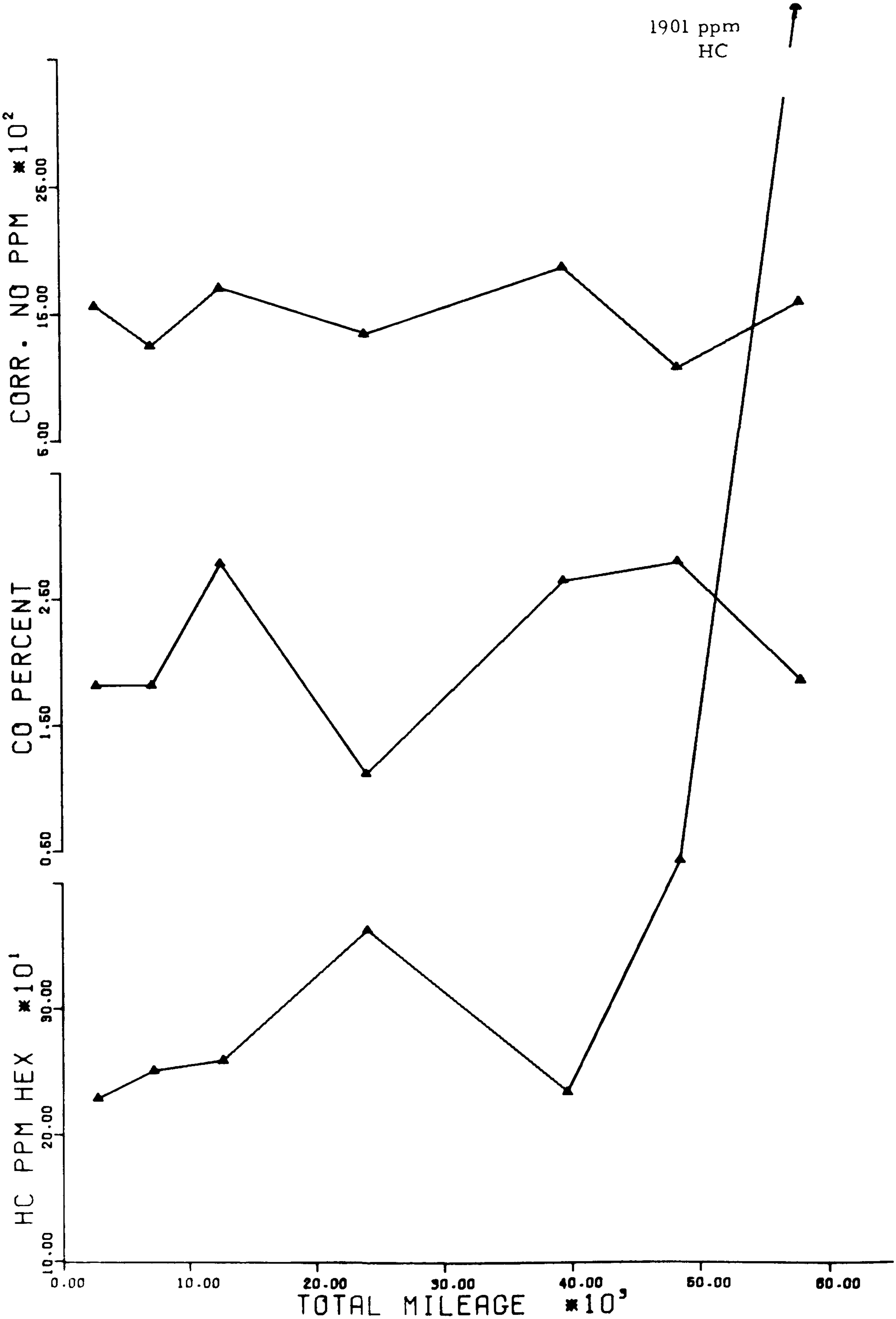



FIGURE [illegible] UNIT 013 70 IHC 32000 LB GVW TRACTOR.478 CID V8 ENGINE

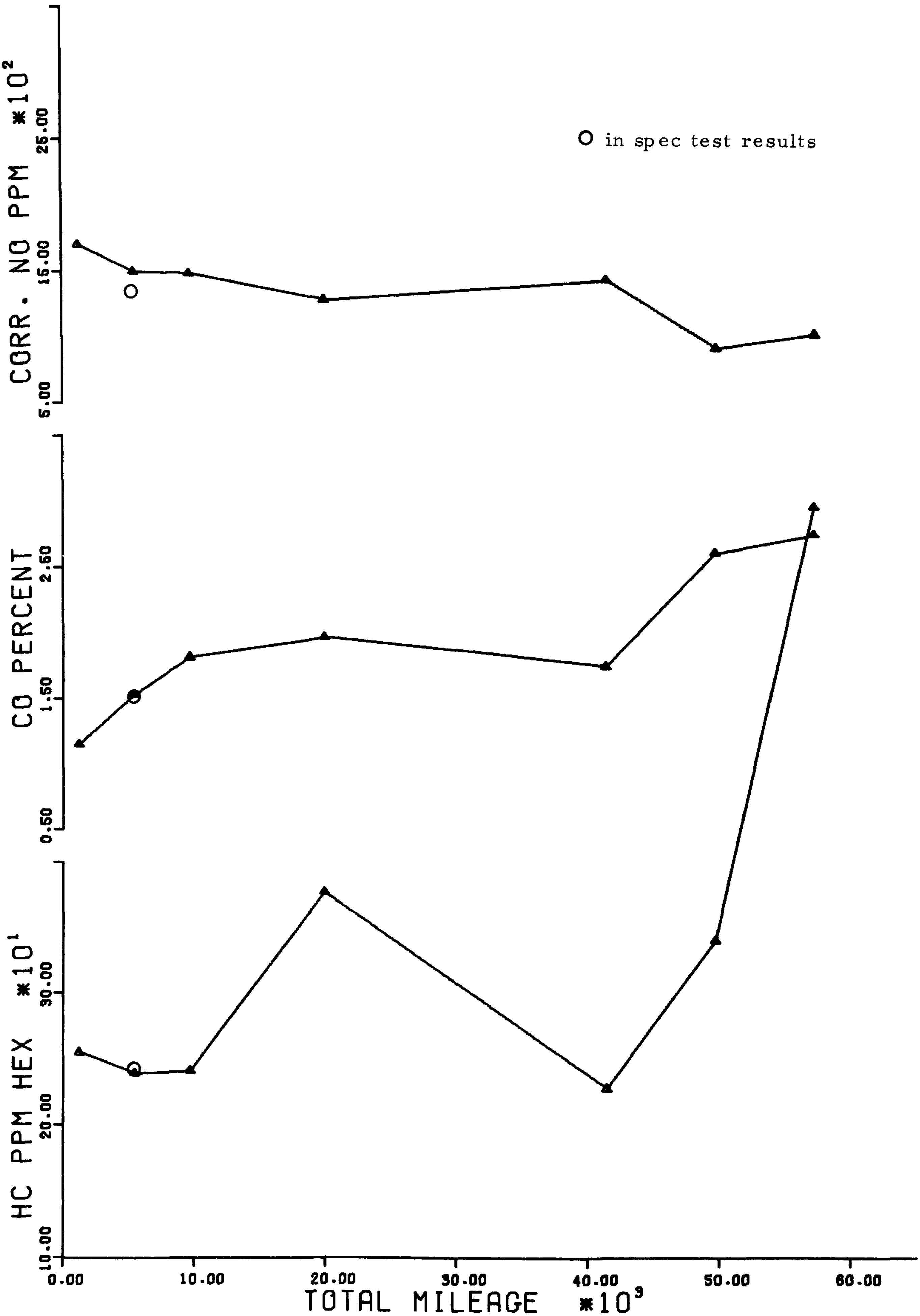



FIGURE E-14 UNIT 014 70 IHC 32000 LB GVW TRACTOR, 478 CID V8 ENGINE

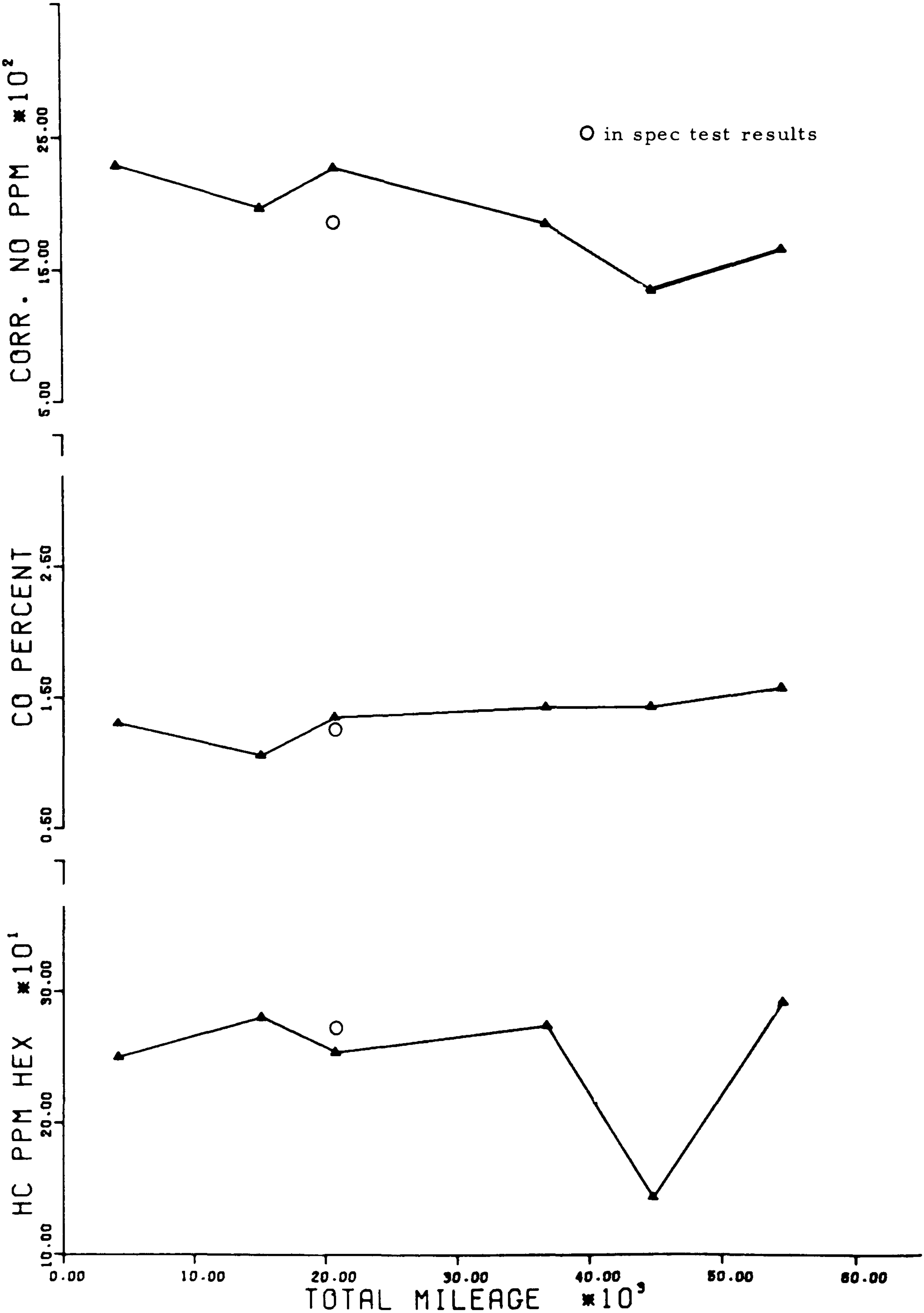



FIGURE E-15 UNIT 015 70 IHC 25500 LB GVW SCHOOL BUS 345CID V8 ENGINE

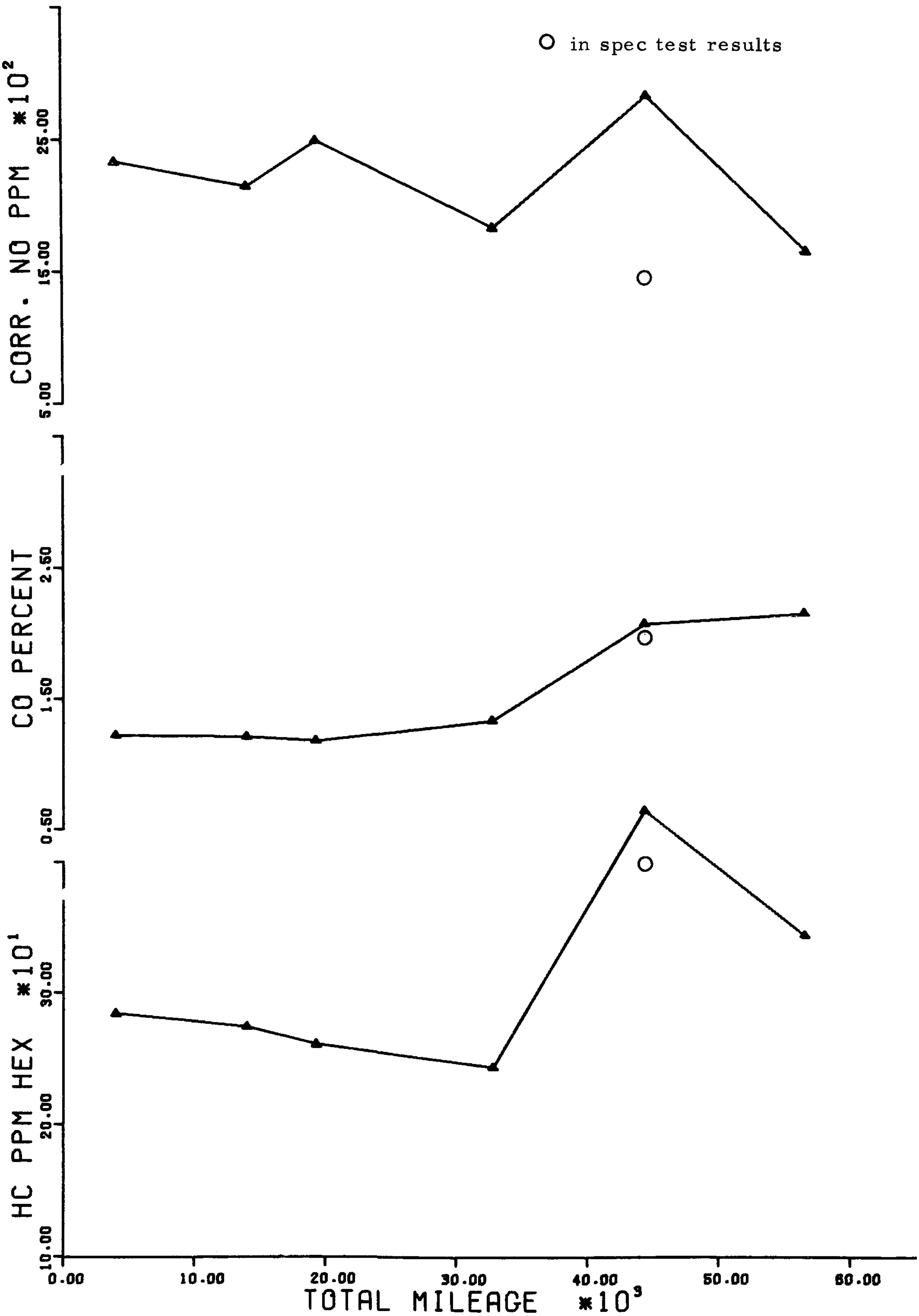



FIGURE E-16 UNIT 016 70 IHC 25500 LB GVW SCHOOL BUS 345CID V8 ENGINE

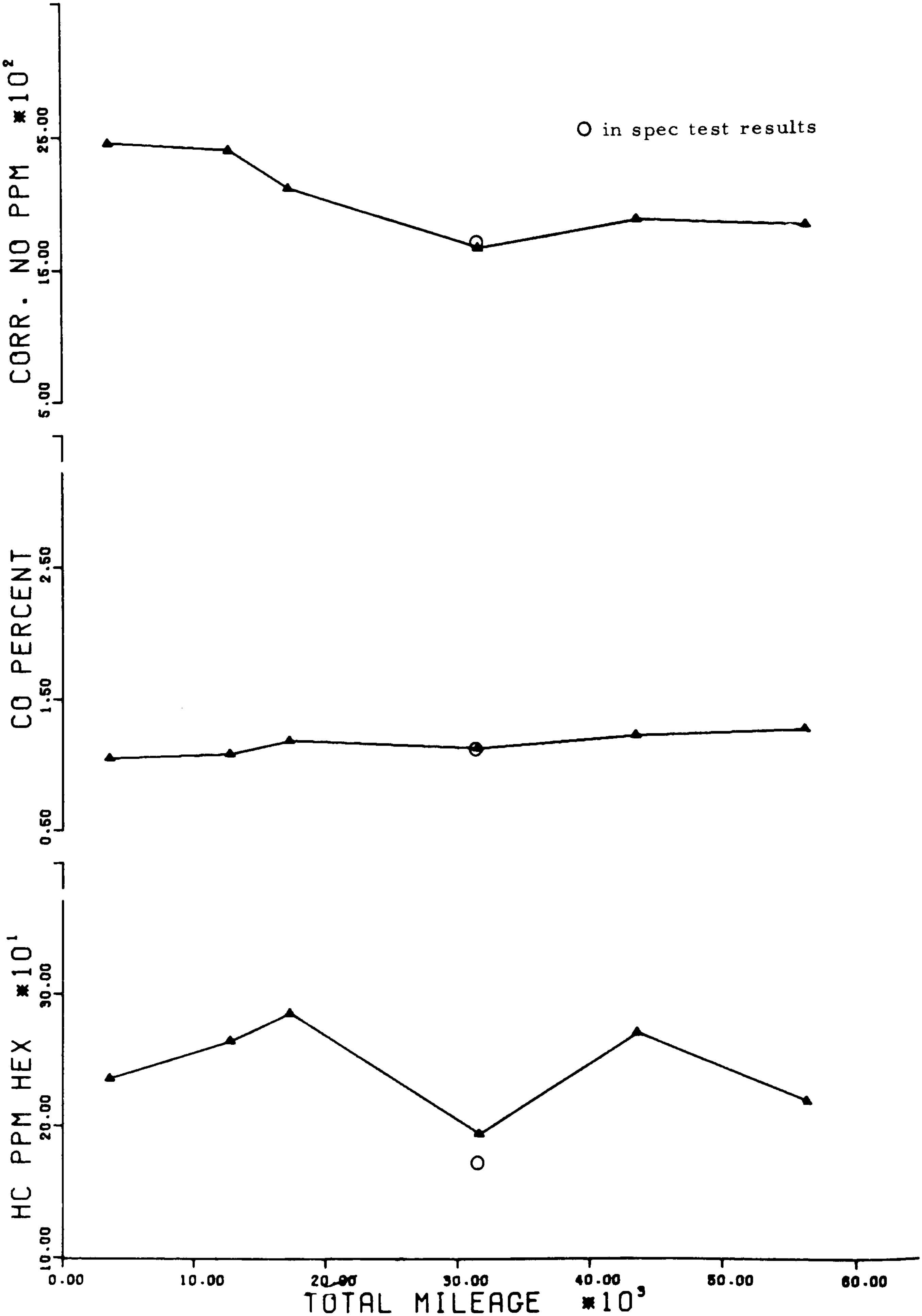



FIGURE E-17 UNIT 017 70 IHC 25500 LB GVW SCHOOL BUS 345CID V8 ENGINE

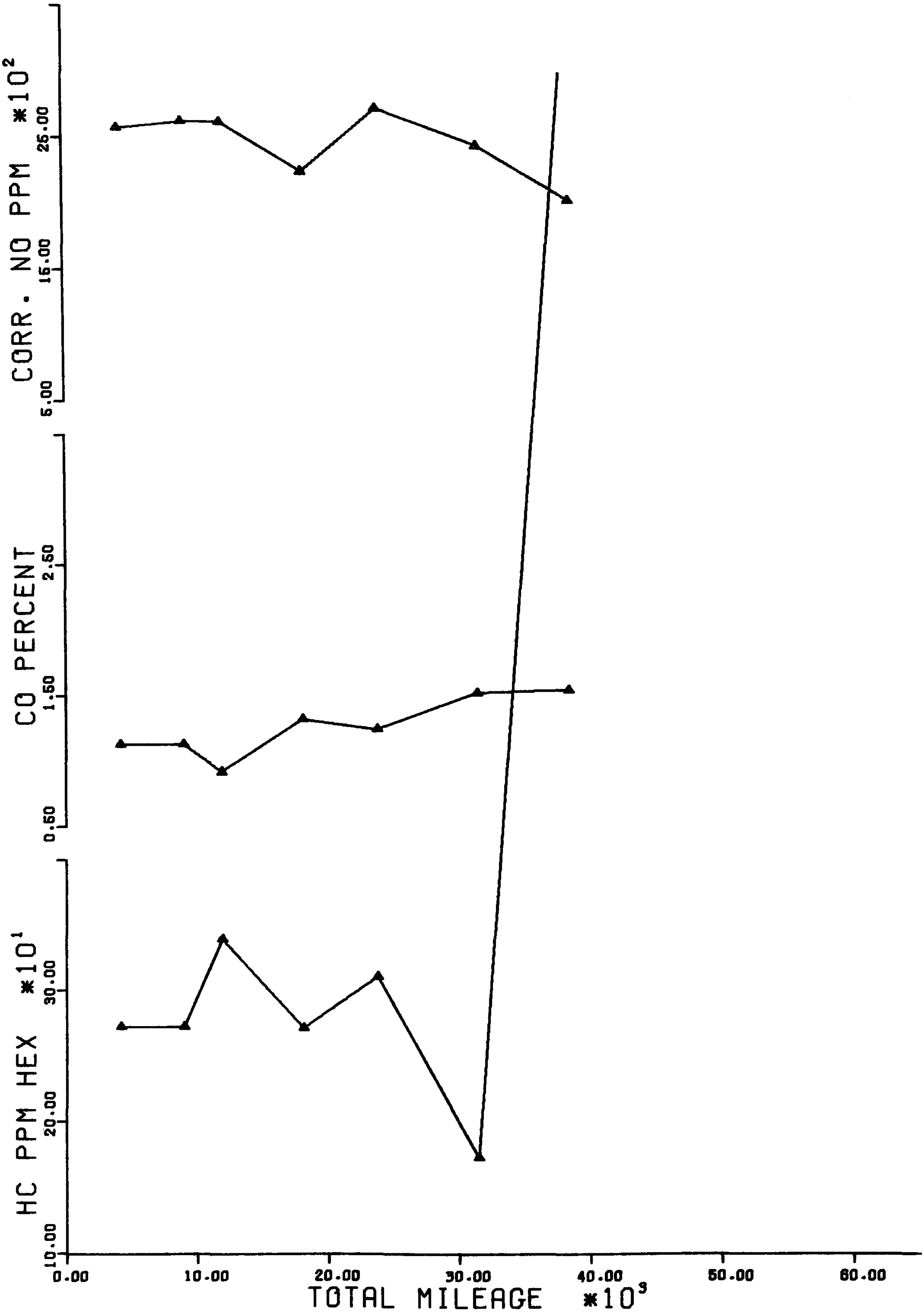



FIGURE E-18 UNIT 018 70 IHC 22000 LB GVW SCHOOL BUS 345CID V8 ENGINE

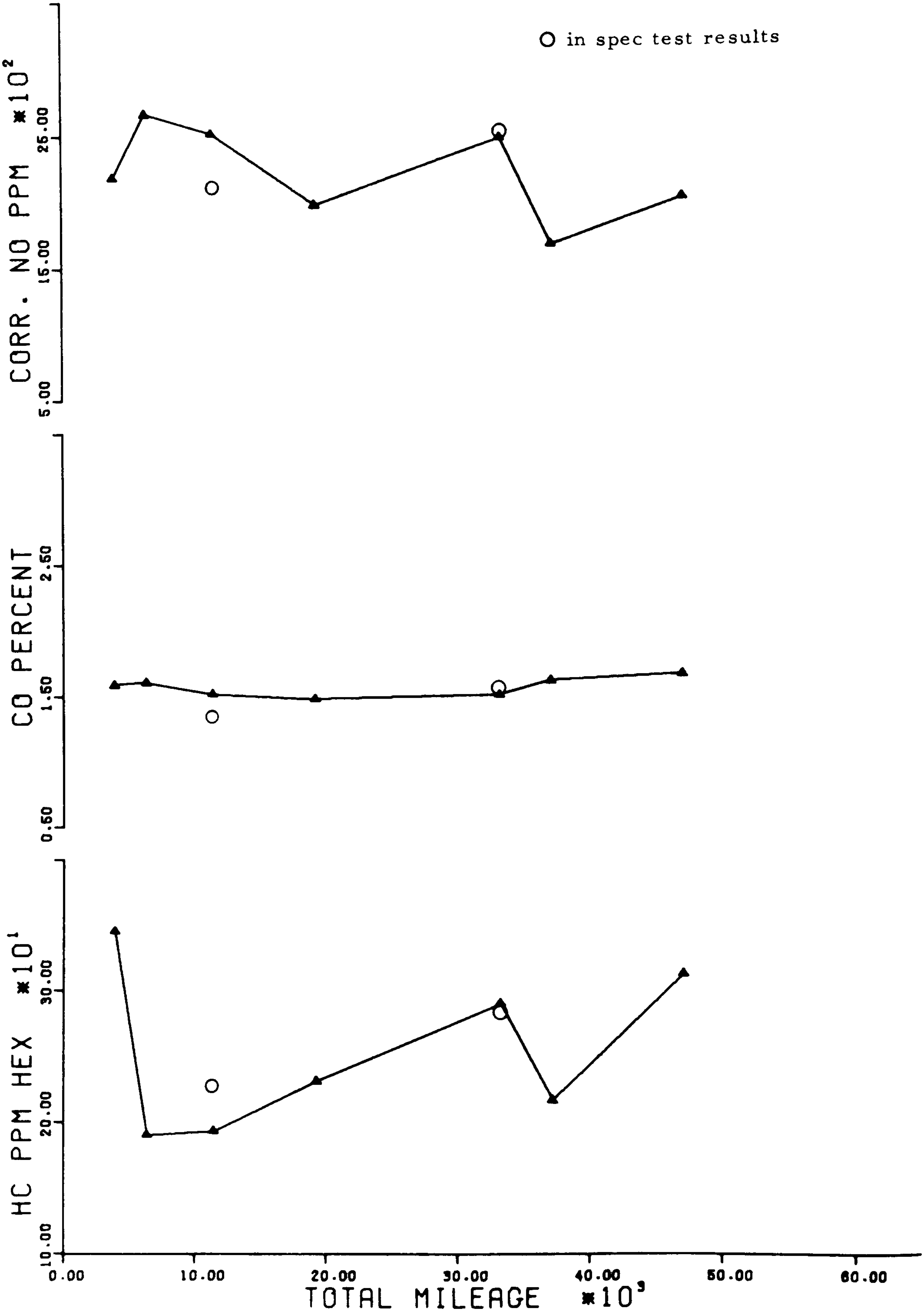



FIGURE E-19 UNIT 019 70 IHC 22000 LB GVW SCHOOL BUS 345CID V8 ENGINE

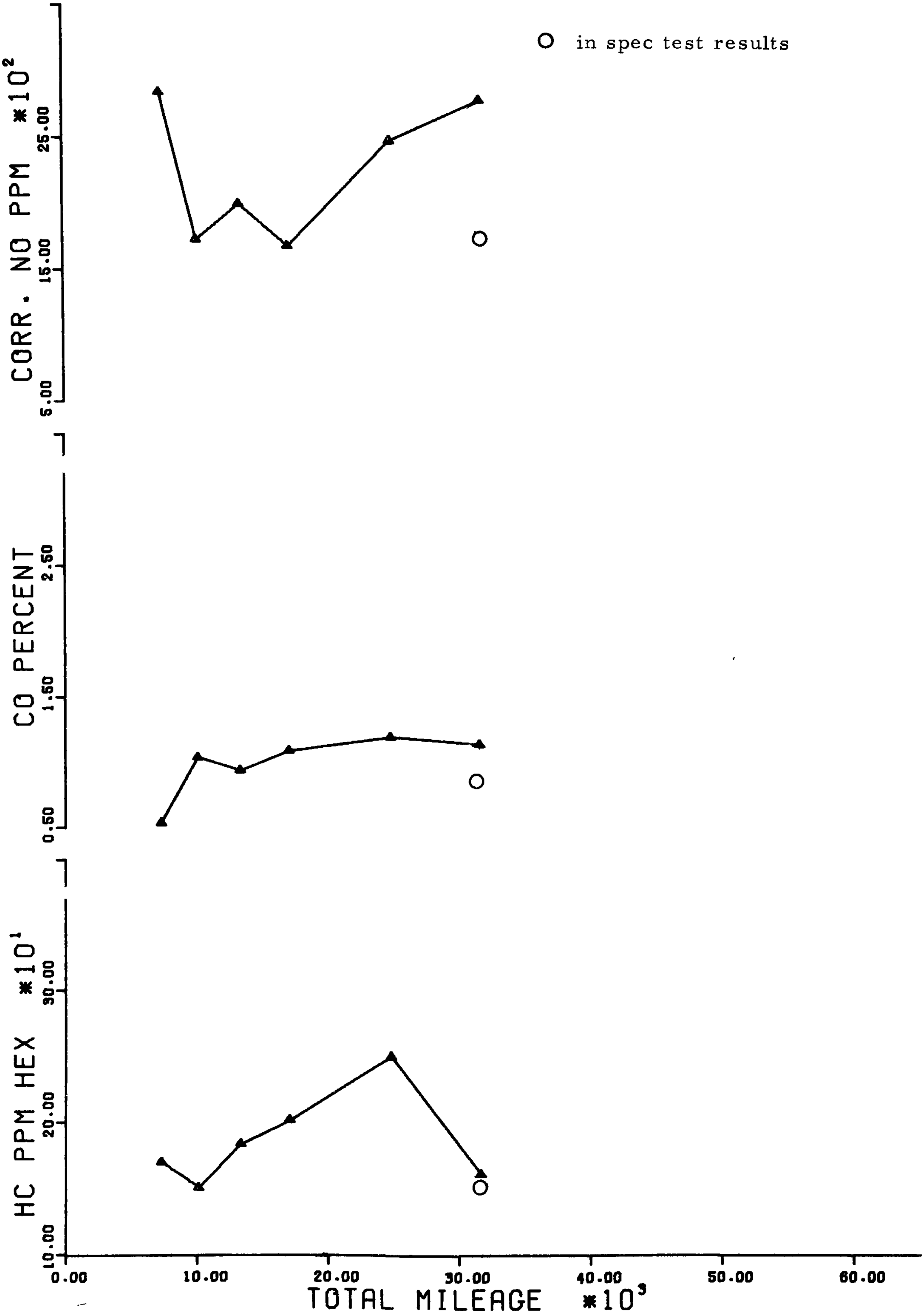



FIGURE E-20 ~~UNIT~~ 020 70 FORD 10000 LB GVW STAKE 300 CID I6 ENGINE

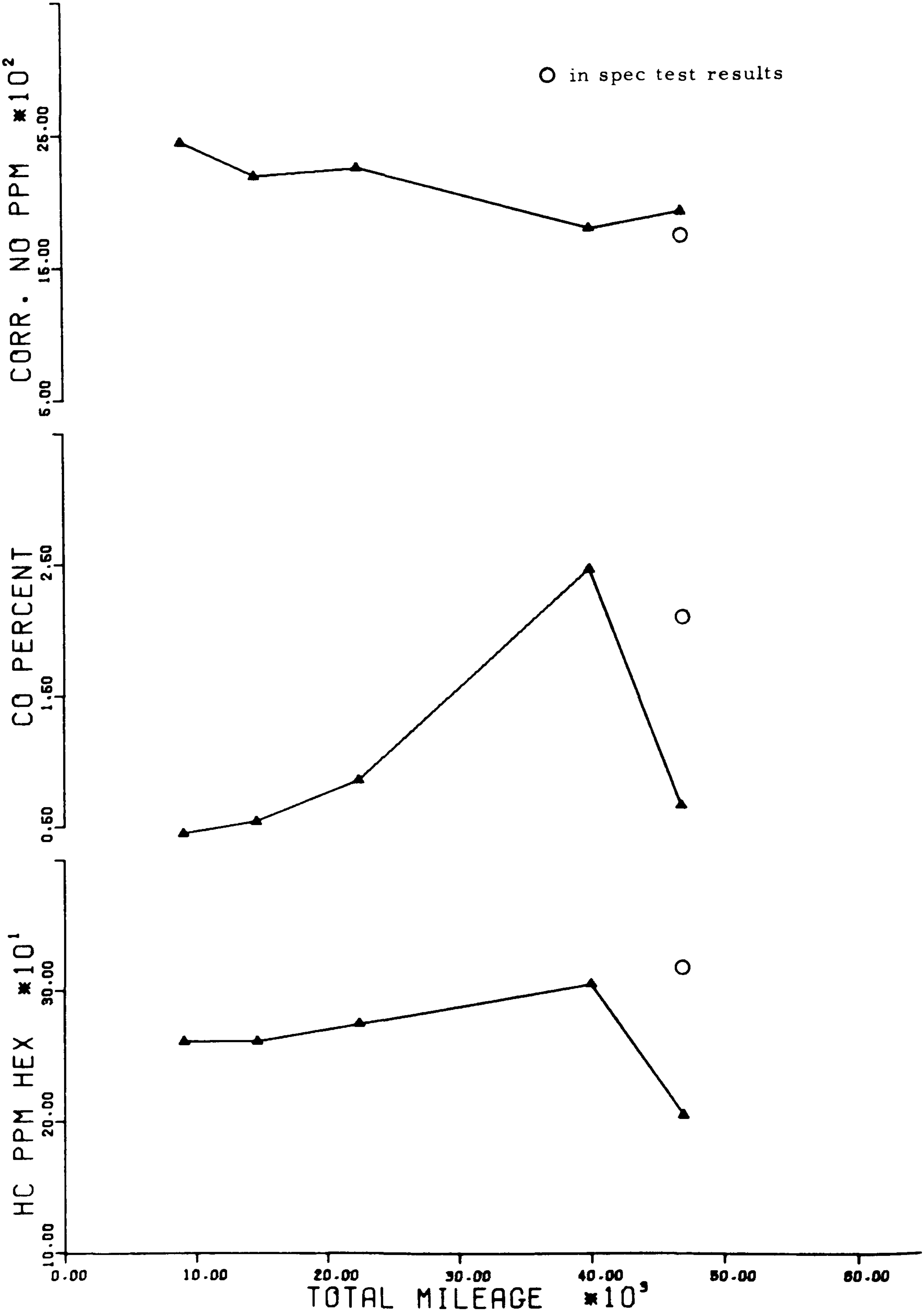



FIGURE E-21. UNIT 021 70 FORD 7500 LB GVW PICKUP 240 CID I6 ENGINE

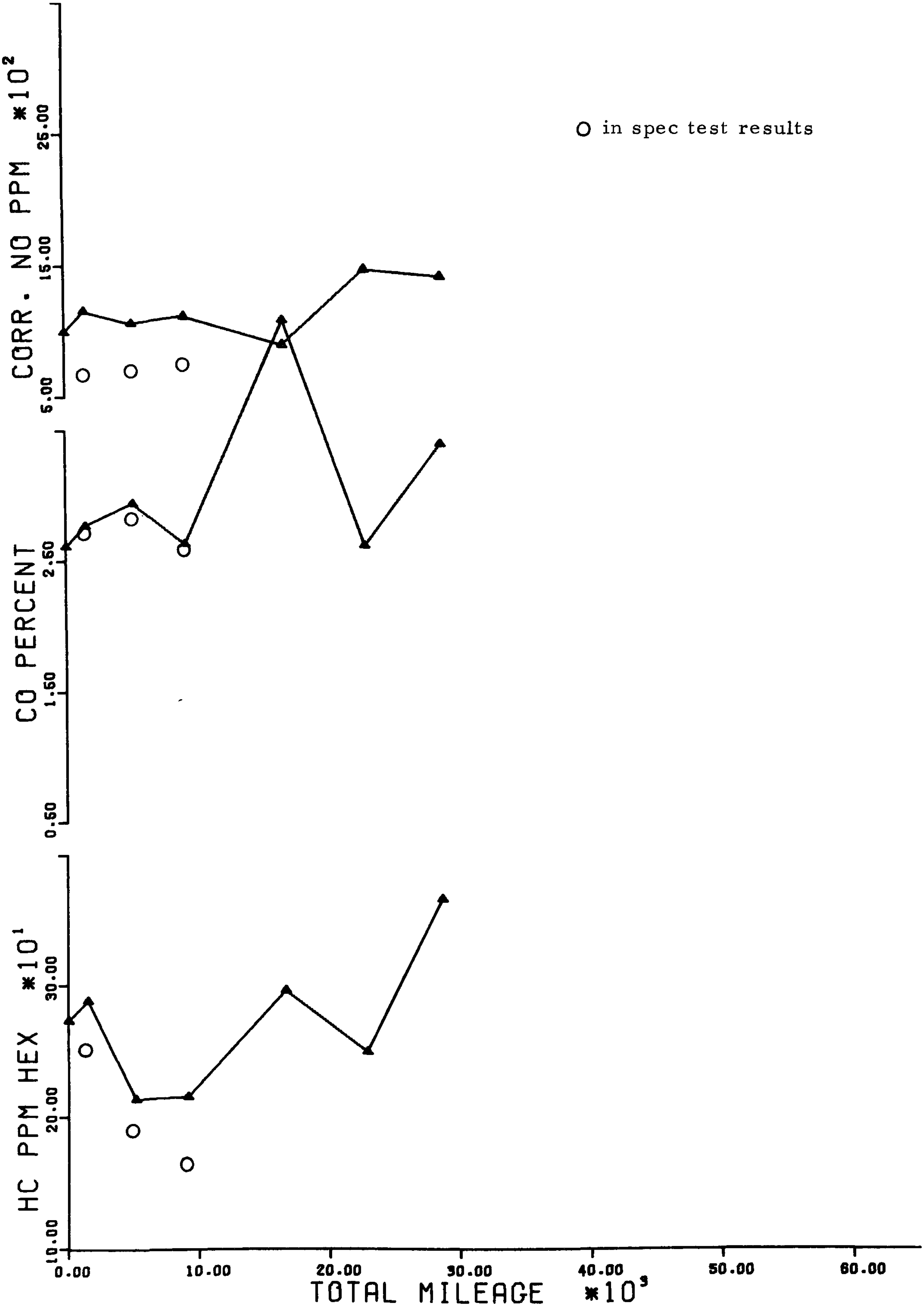



FIGURE E-22 UNIT 022 71 IHC 25500 LB GVW LINE 392 CID V8 ENGINE

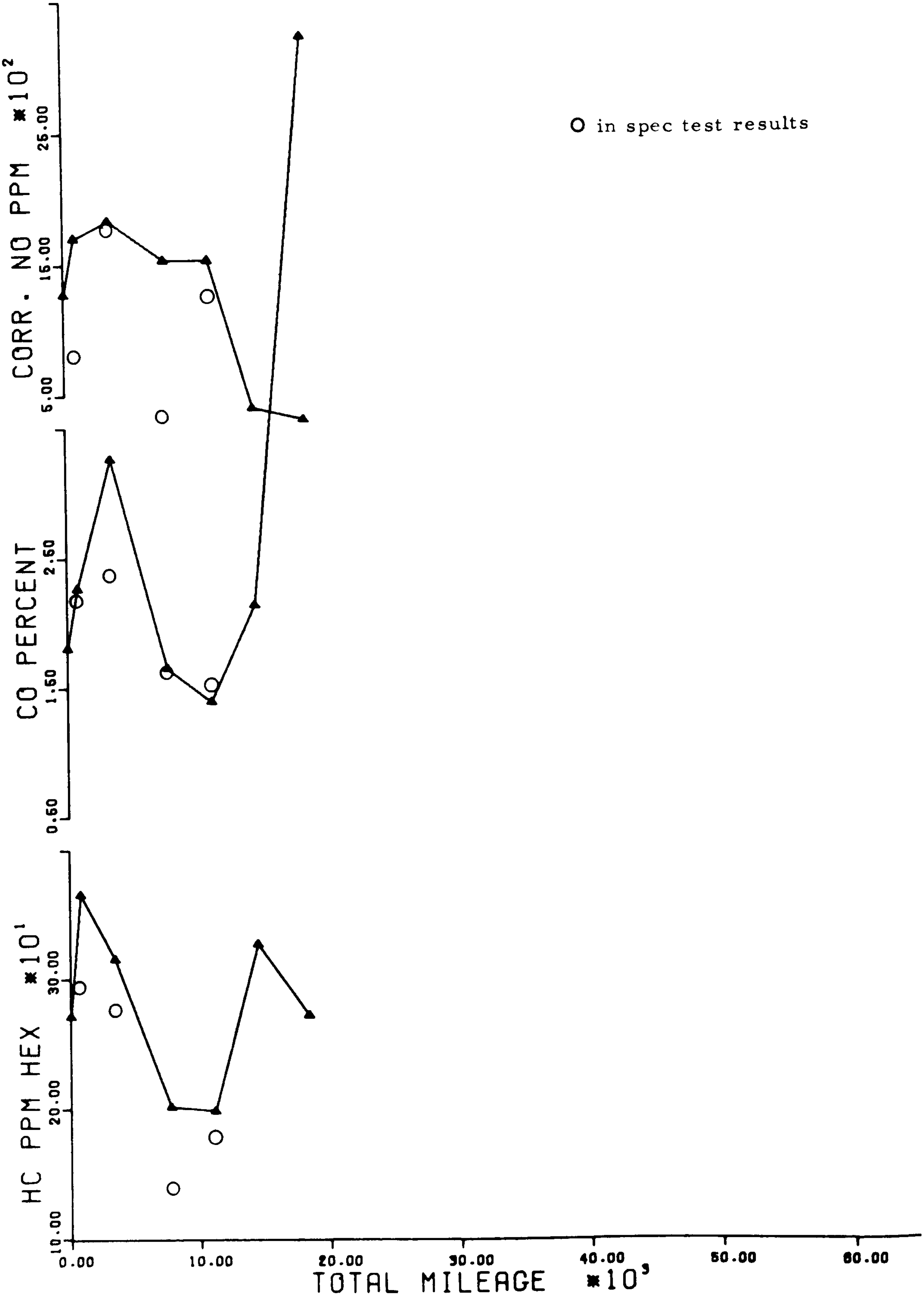



FIGURE E-23 UNIT 023 70 IHC 25500 LB GVW LINE 392 CID V8 ENGINE

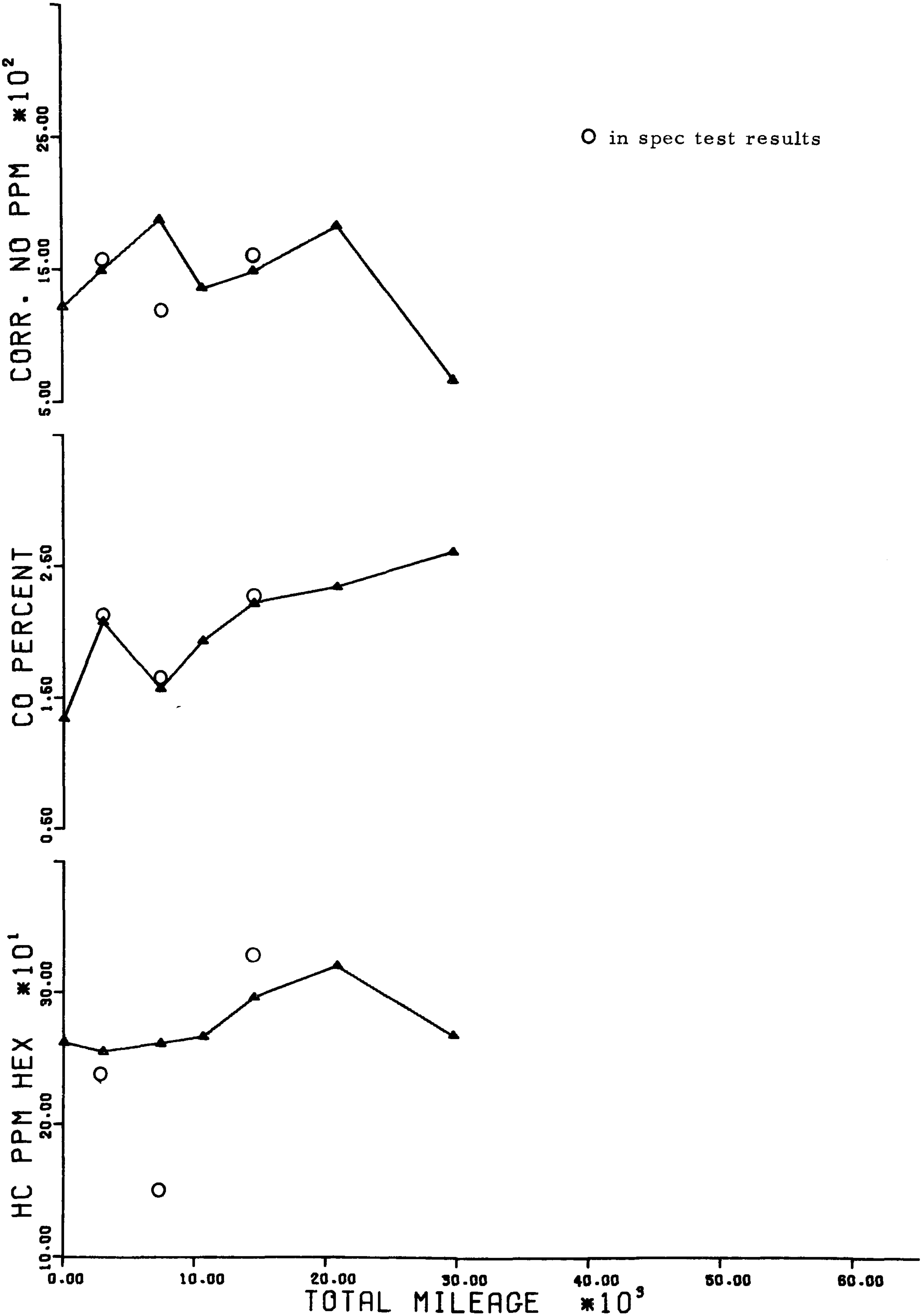



FIGURE E-24UNIT 024 71 IHC 25500 LB GVW LINE 392 CID V8 ENGINE

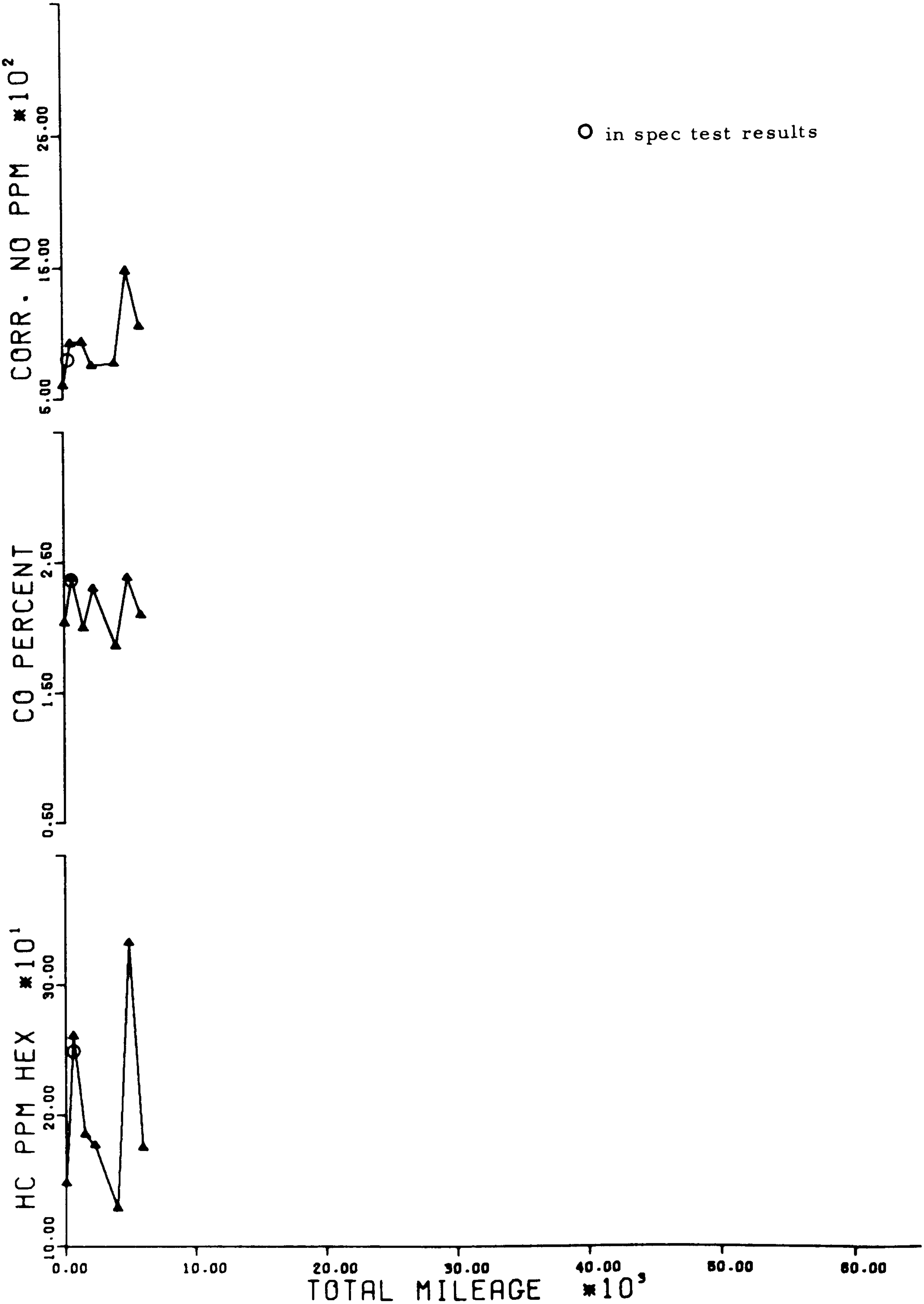



FIGURE E-25 UNIT 025 71 IHC 25500 LB GVW LINE 392 CID V8 ENGINE

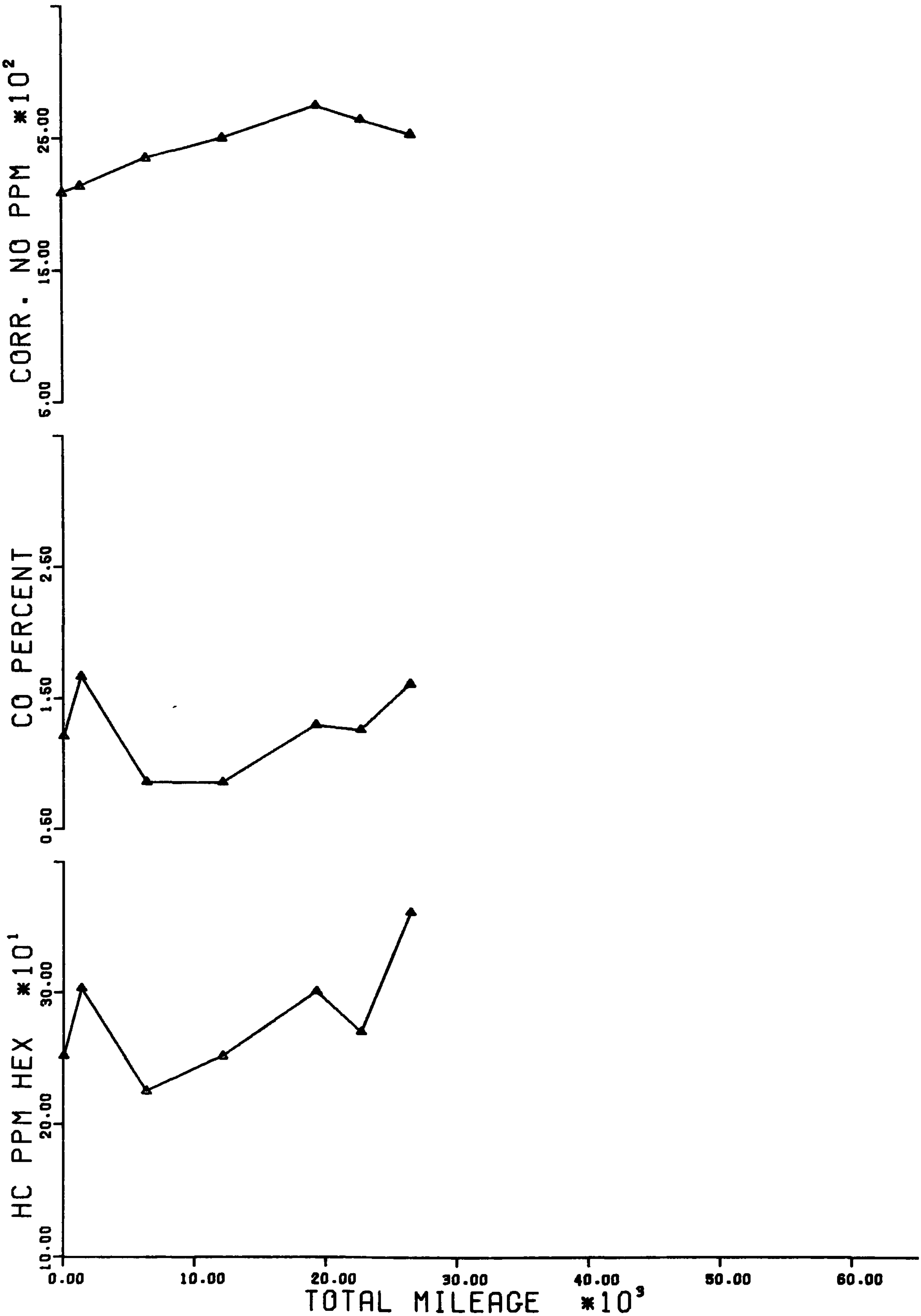



FIGURE E-26 UNIT 026 71 IHC 14000 LB GVW VAN 304 CID V8 ENGINE

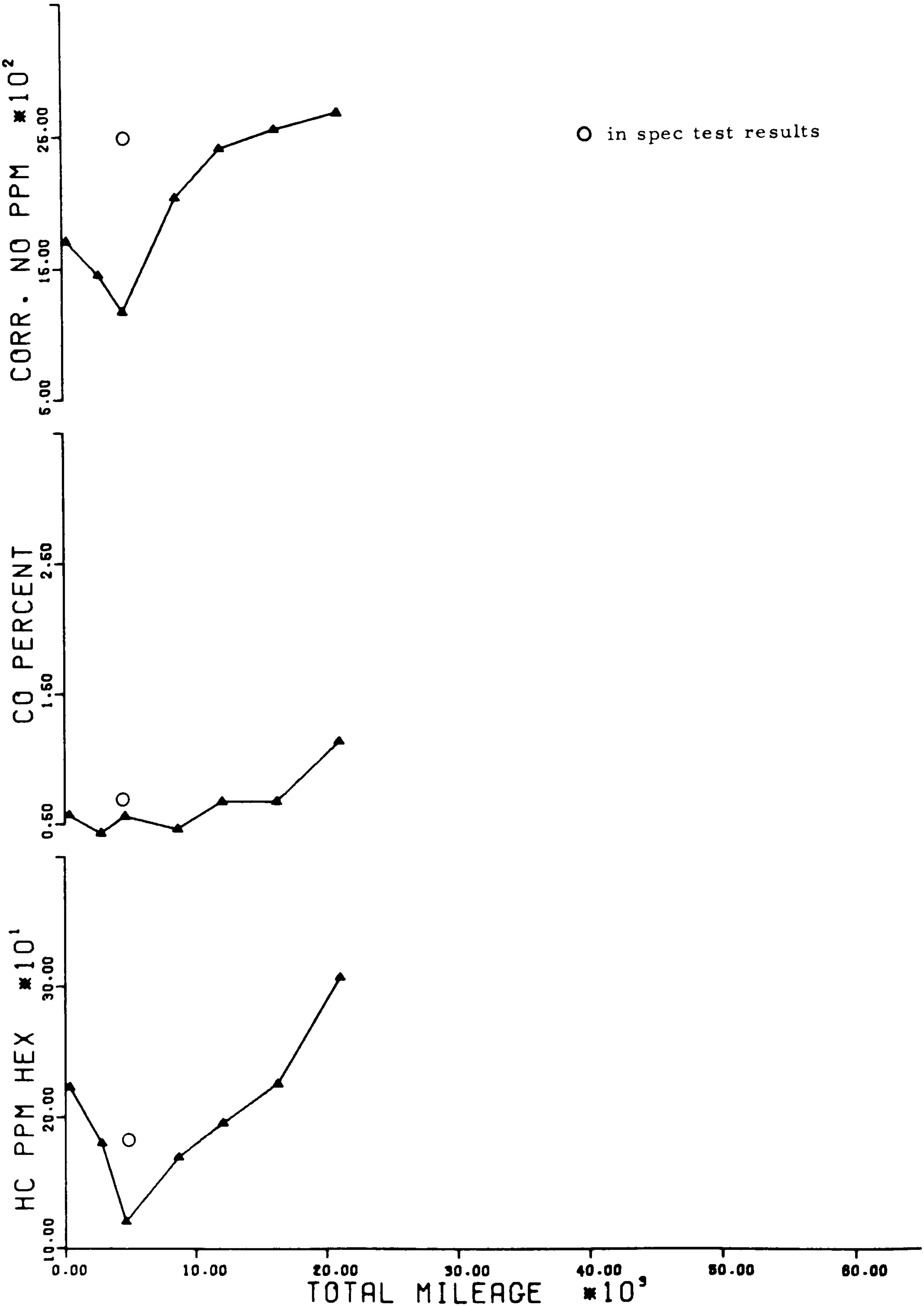



FIGURE E-27 UNIT 027 70 FORD10000 LB GVW SERVICE 300 CID I6 ENGINE

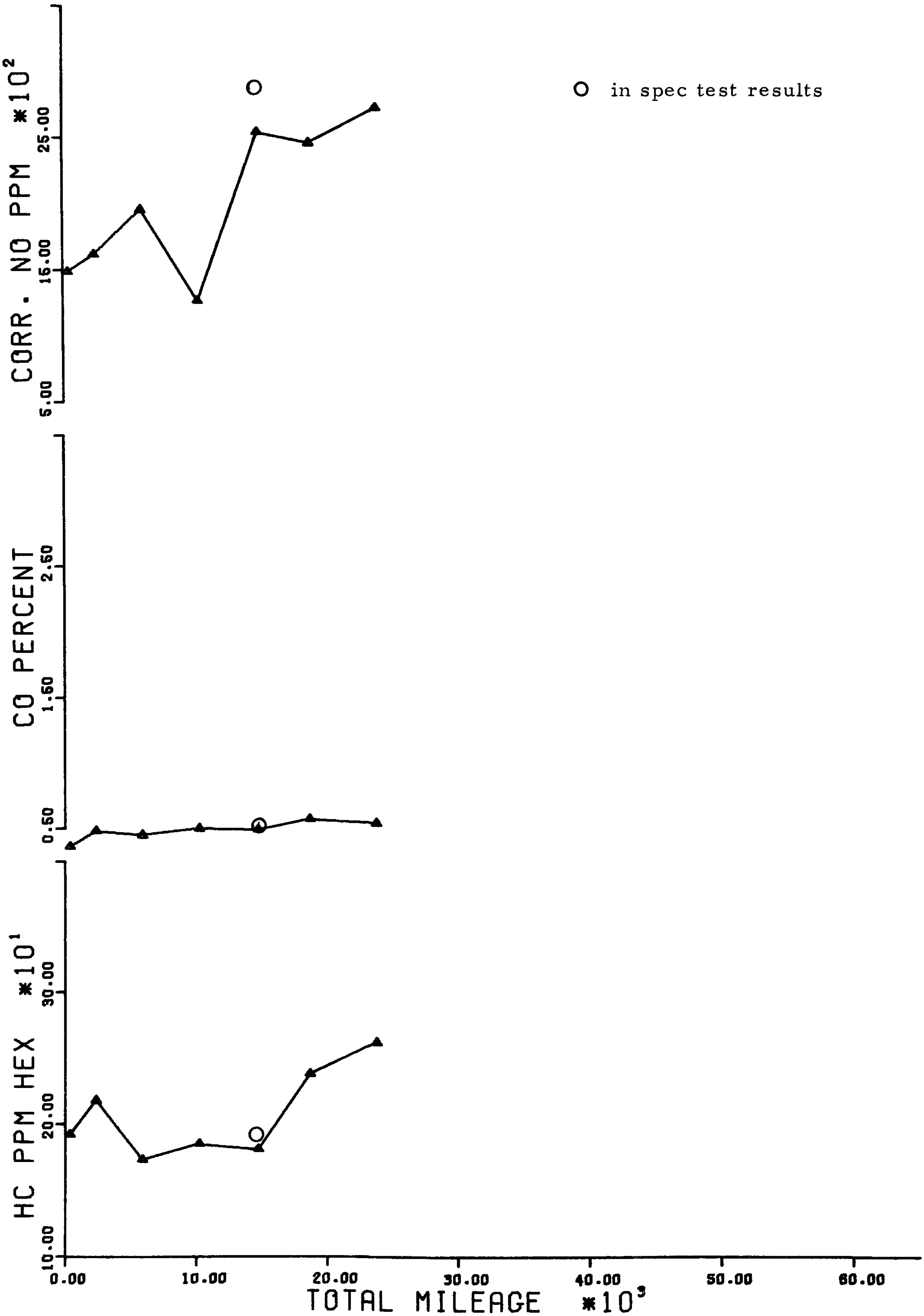



FIGURE E-28 UNIT 028 70 FORD 10000 LB GVW SERVICE 300 CID I6 ENGINE

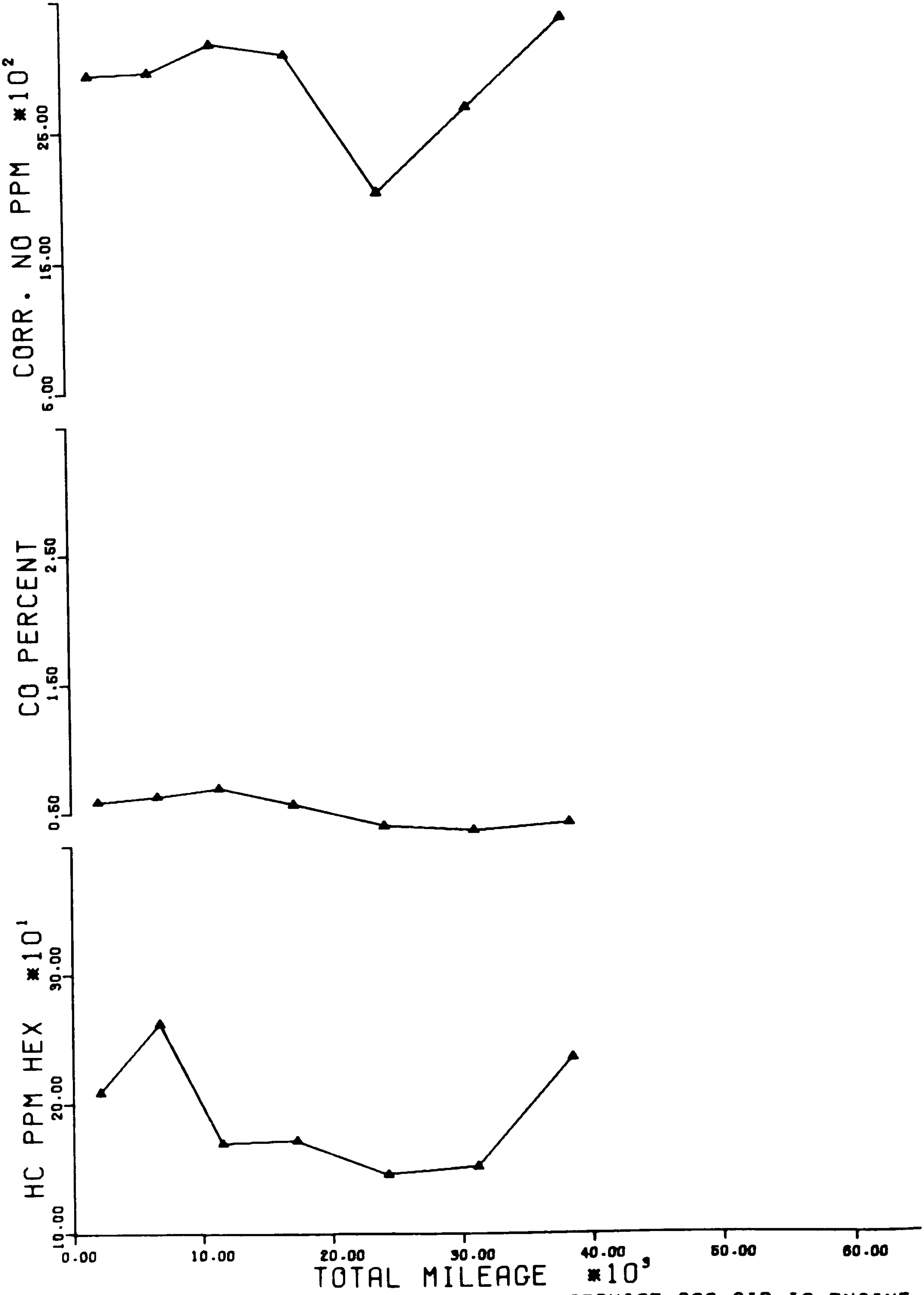



FIGURE E-29 UNIT 029 70 FORD 16000 LB GVW SERVICE 300 CID I6 ENGINE

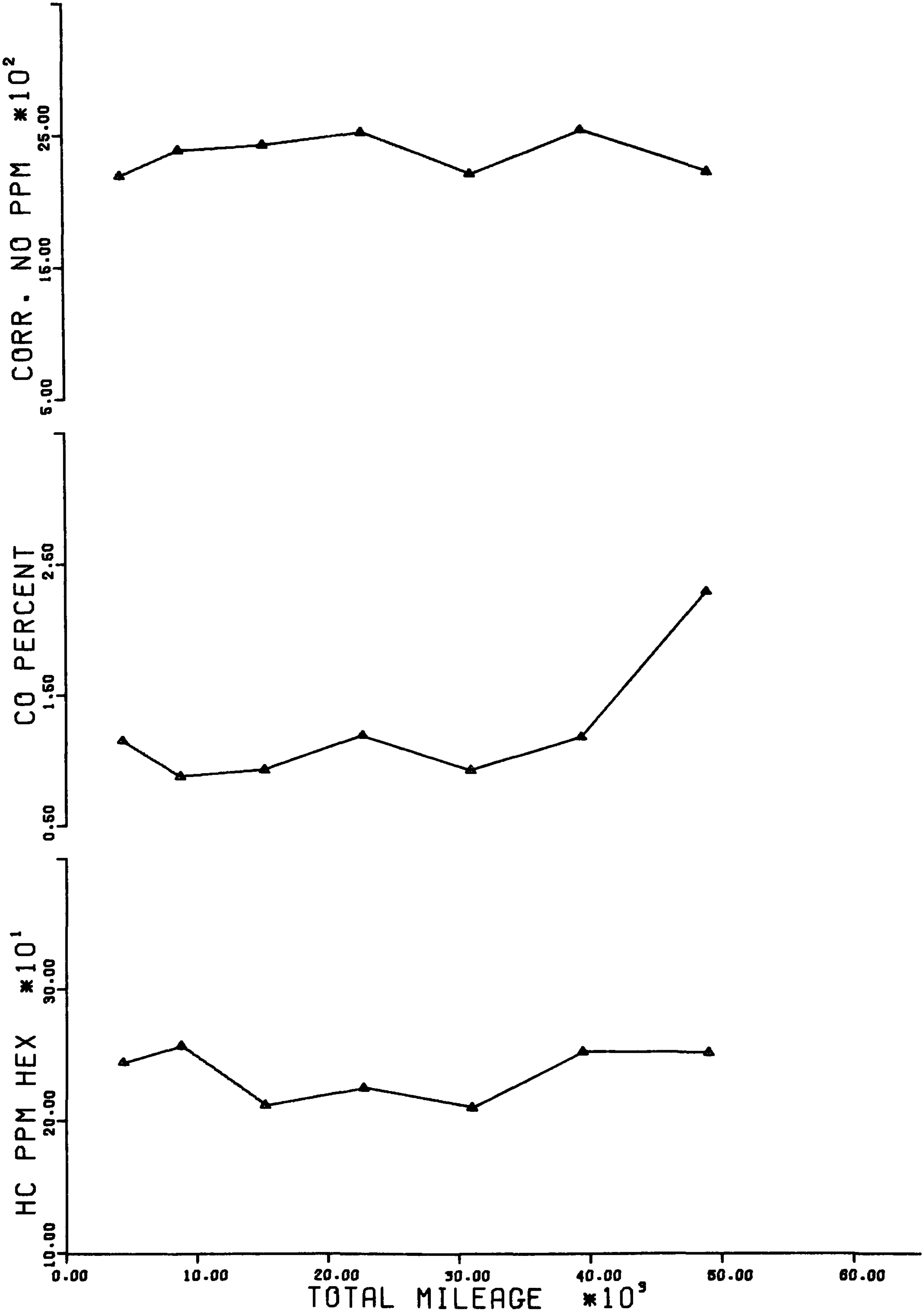



FIGURE E-30 UNIT 030 70 CHEV 9000 LB GVW SERVICE 292 CID I6 ENGINE

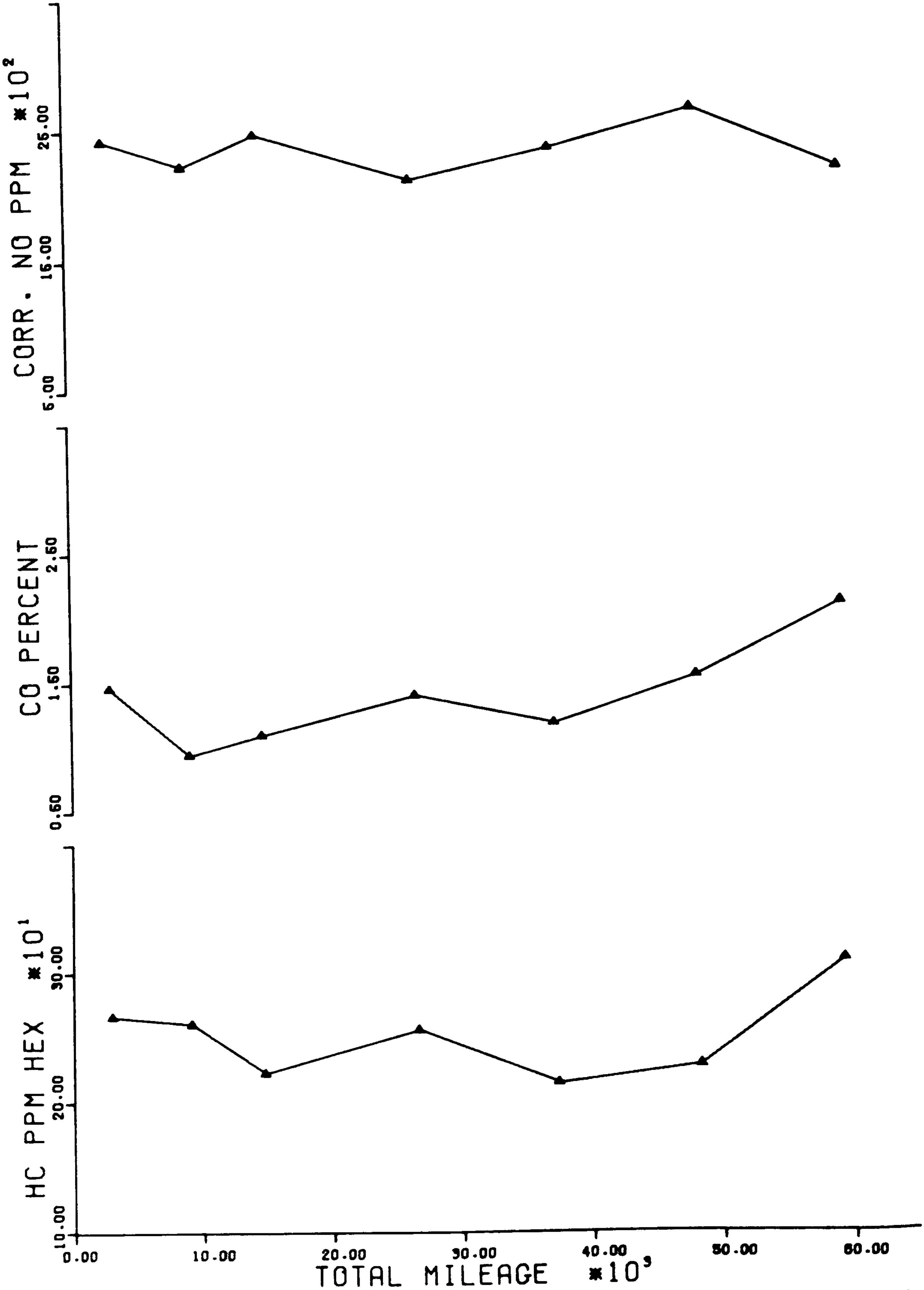



FIGURE E-31 UNIT 031 70 CHEV 7500 LB GVW SERVICE 250 CID I6 ENGINE

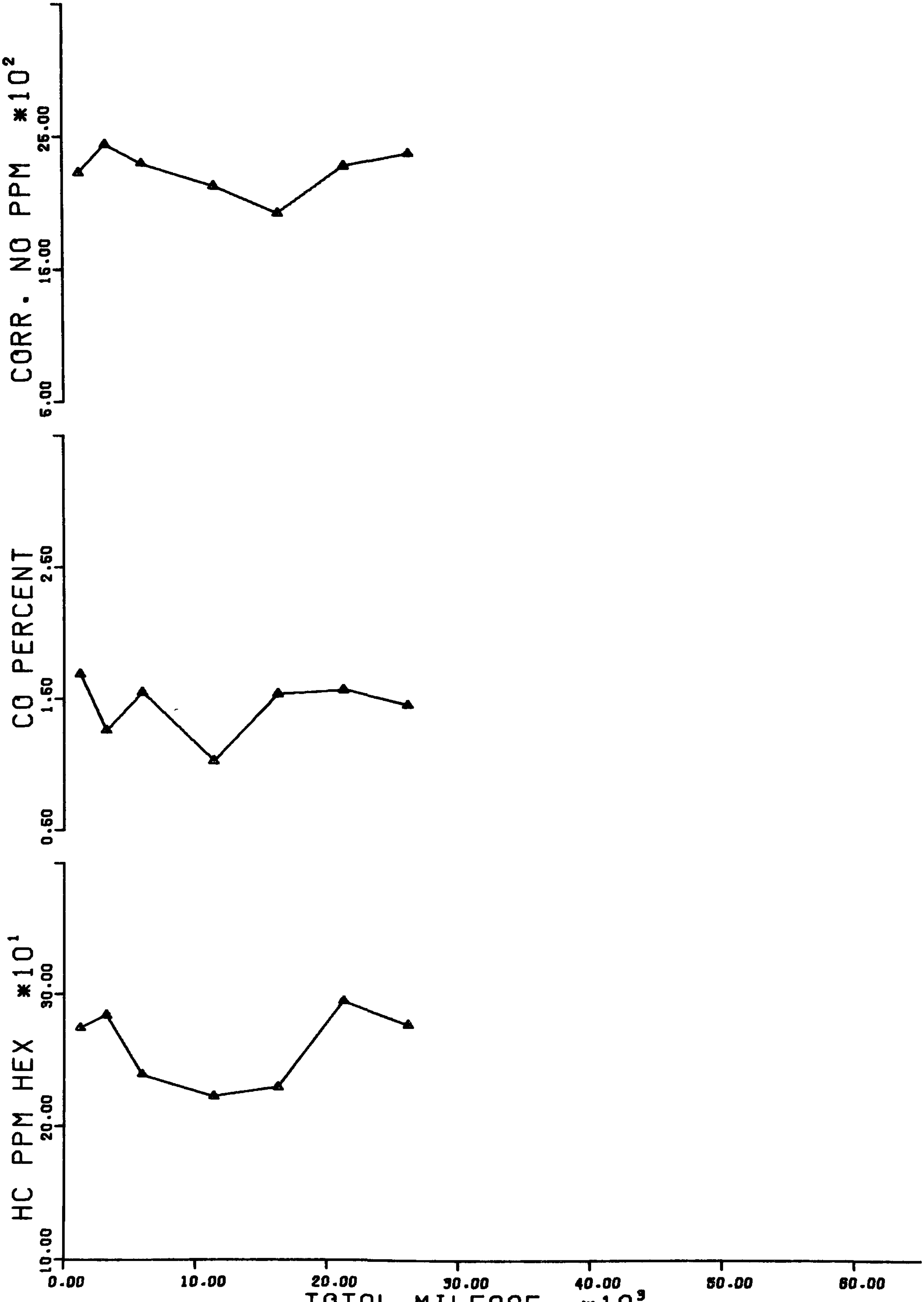



FIGURE E-32 UNIT 032 70 CHEV 7500 LB GVW SERVICE 250 CID I6 ENGINE

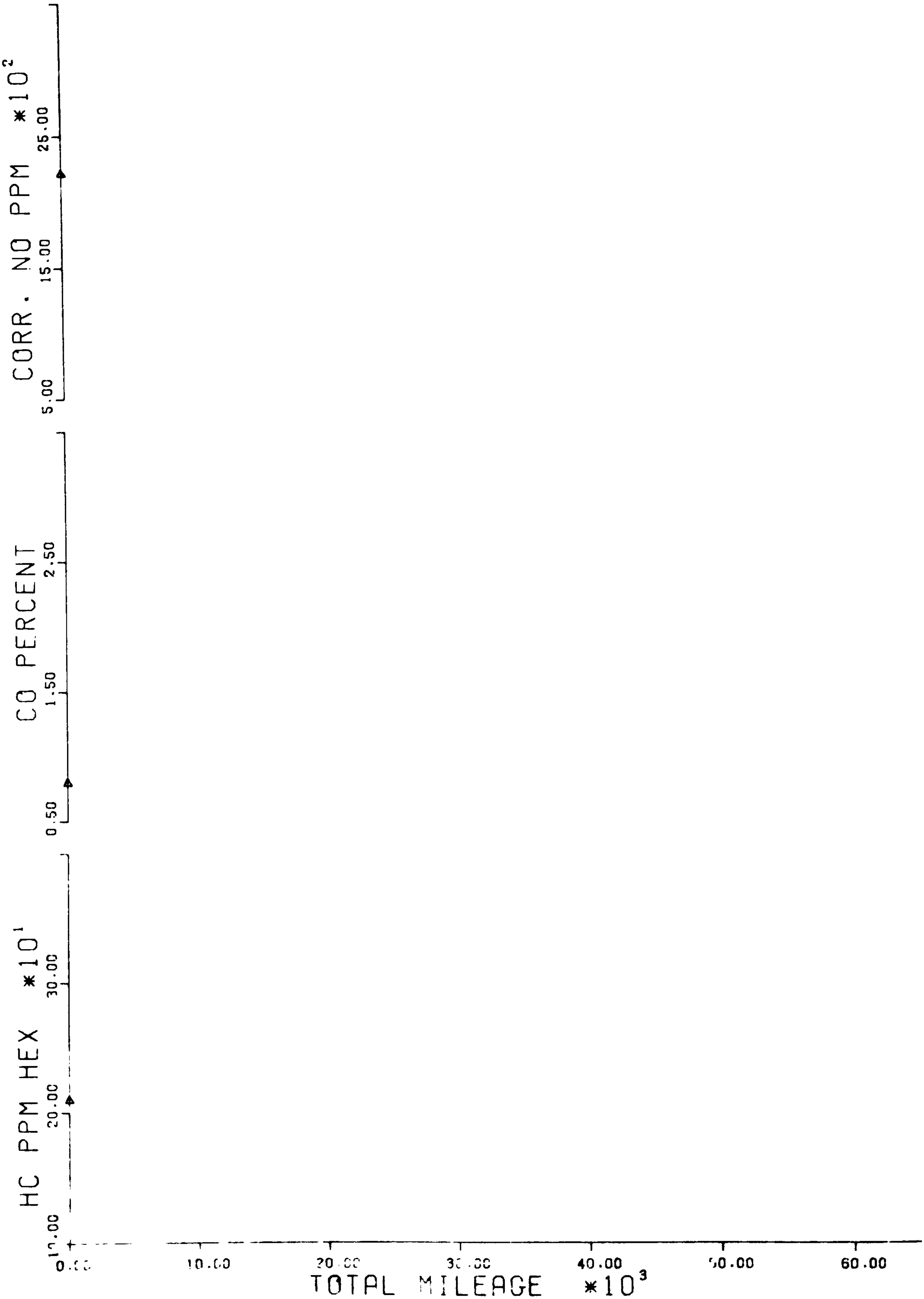



FIGURE E-33 UNIT 033 71 FORD 24000 GVW VAN 300 CID I6 ENGINE

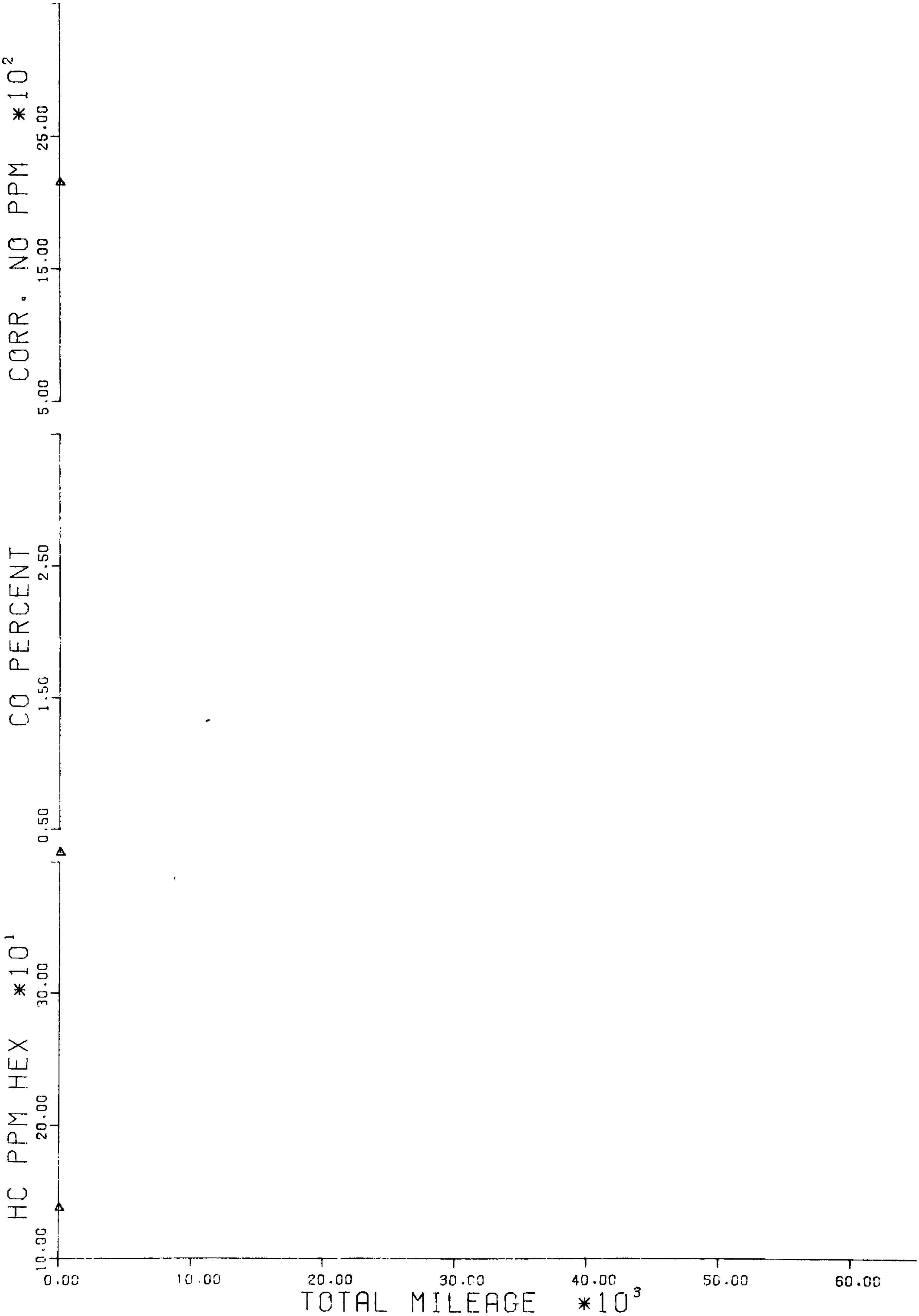



**FIGURE E-34.** UNIT 034 71 FORD 24000 GVW VAN 300 CID I6 ENGINE

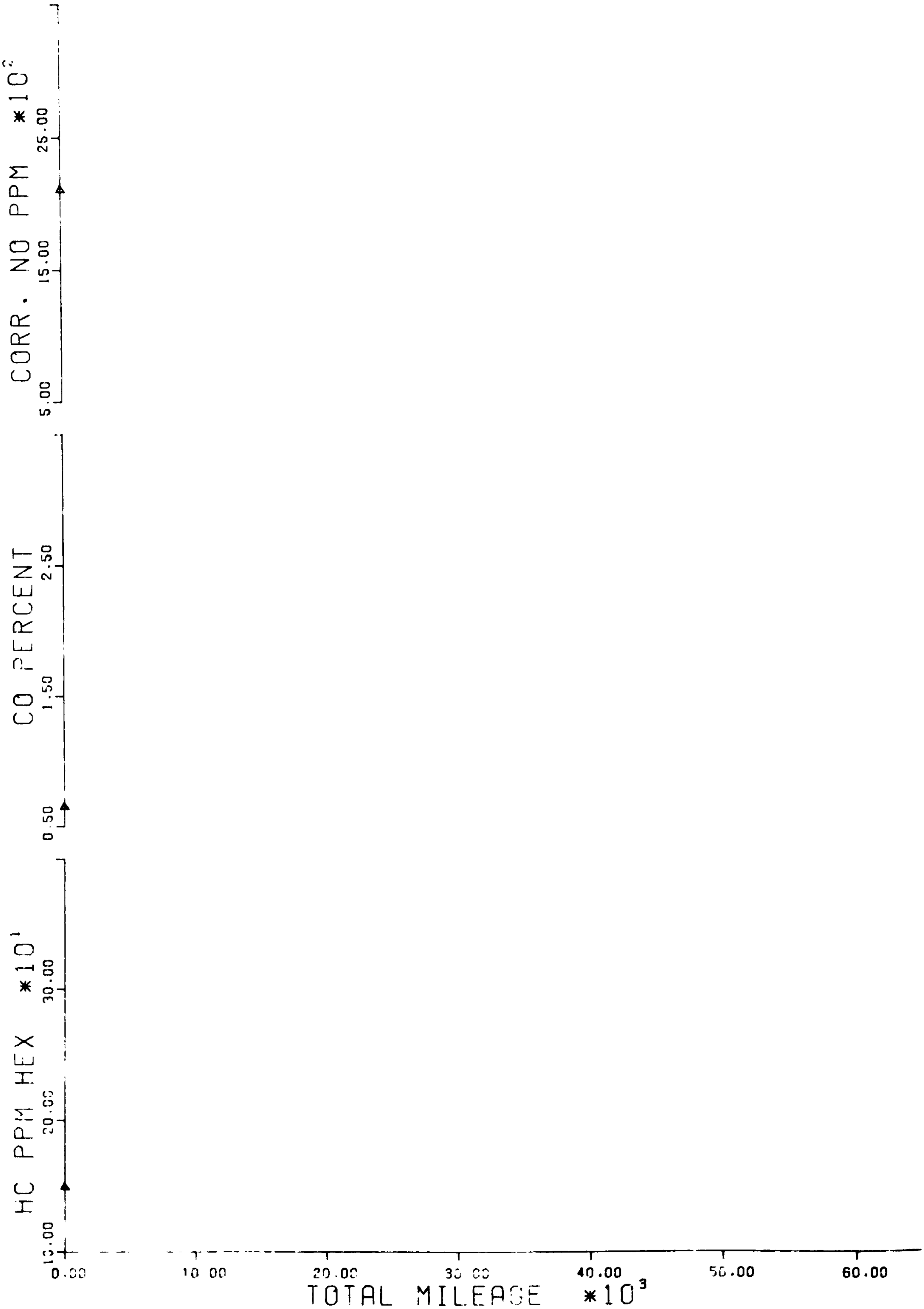



FIGURE E-35. UNIT 035 71 FORD 24000 GVW VAN 300 CID I6 ENGINE

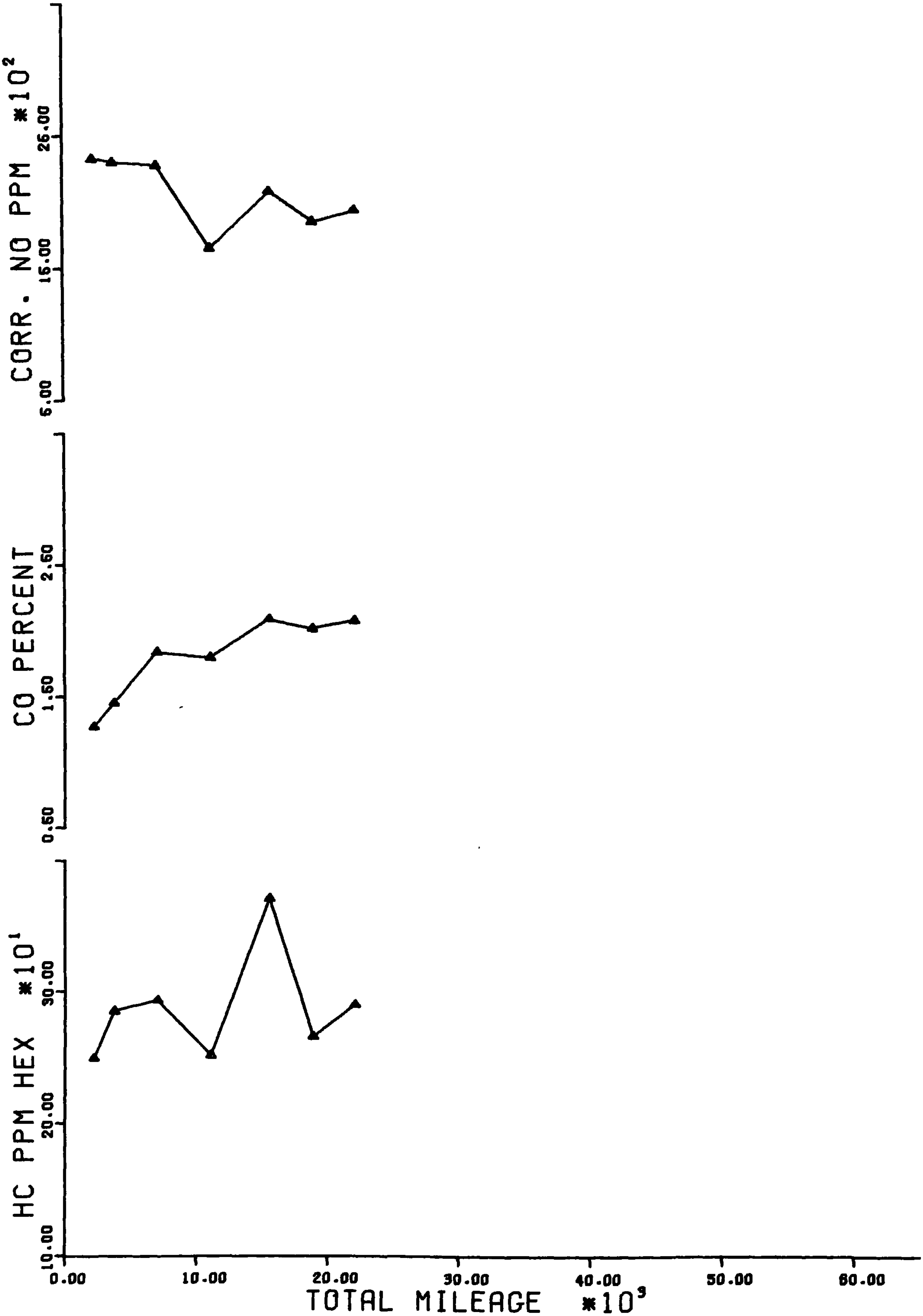



FIGURE E-36 UNIT 036 70 CHEV 7500 LB GVW SERVICE 250 CID I6 ENGINE

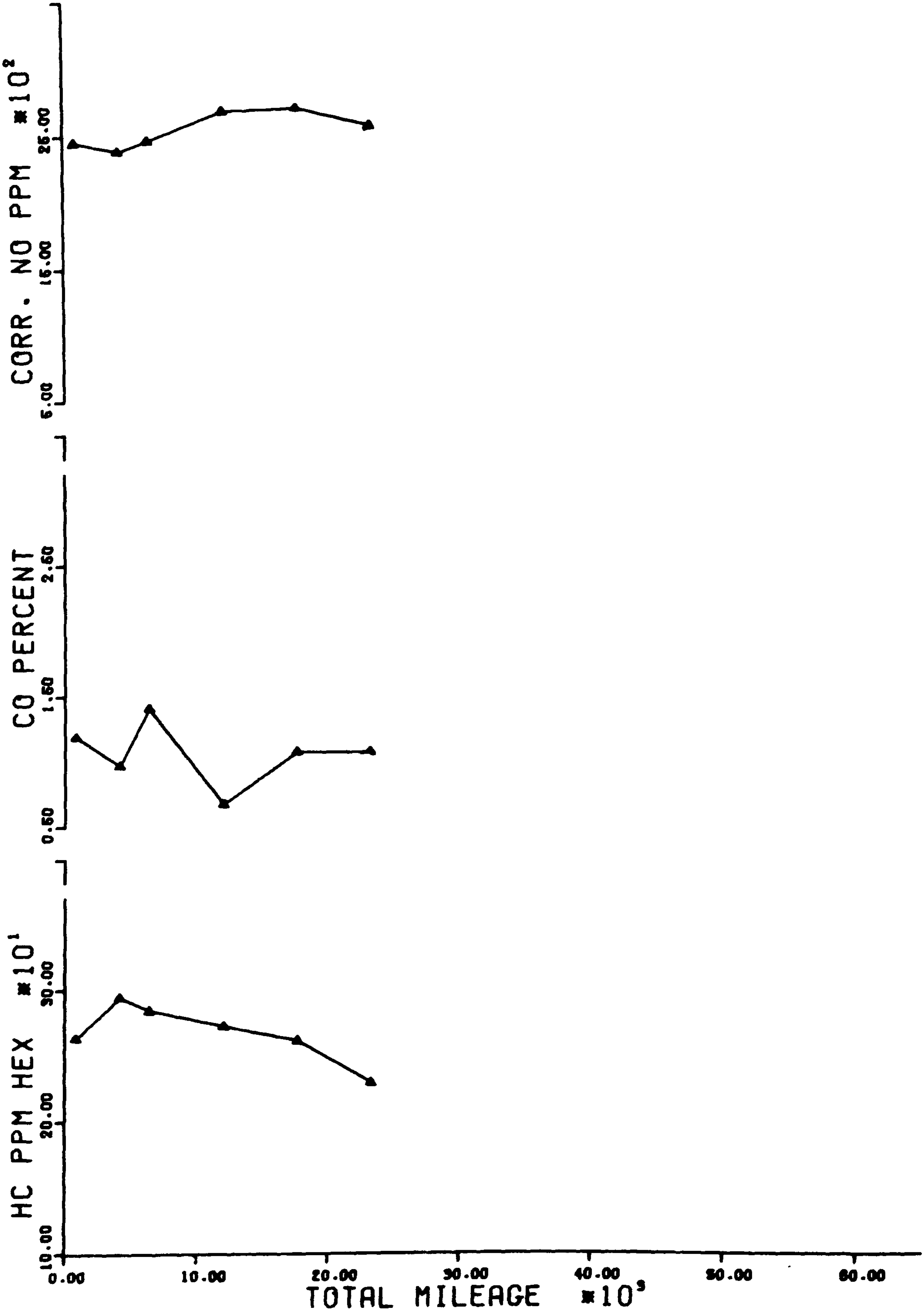



FIGURE E-37 UNIT 037 70 CHEV 7500 LB GVW SERVICE 250 CID I6 ENGINE

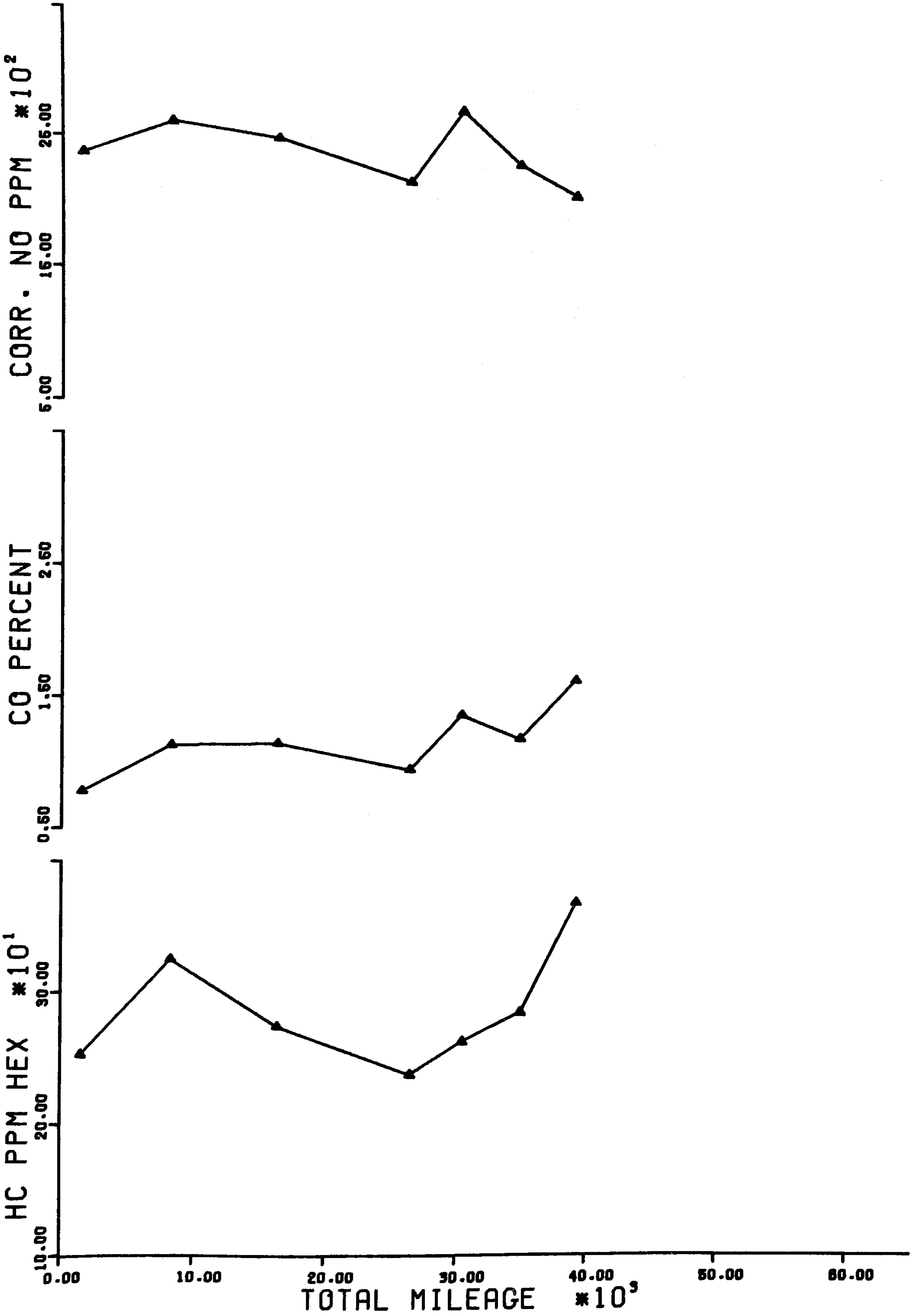



FIGURE E-38 UNIT 038 70 IHC14000 LB GVW SERVICE 304 CID V8 ENGINE

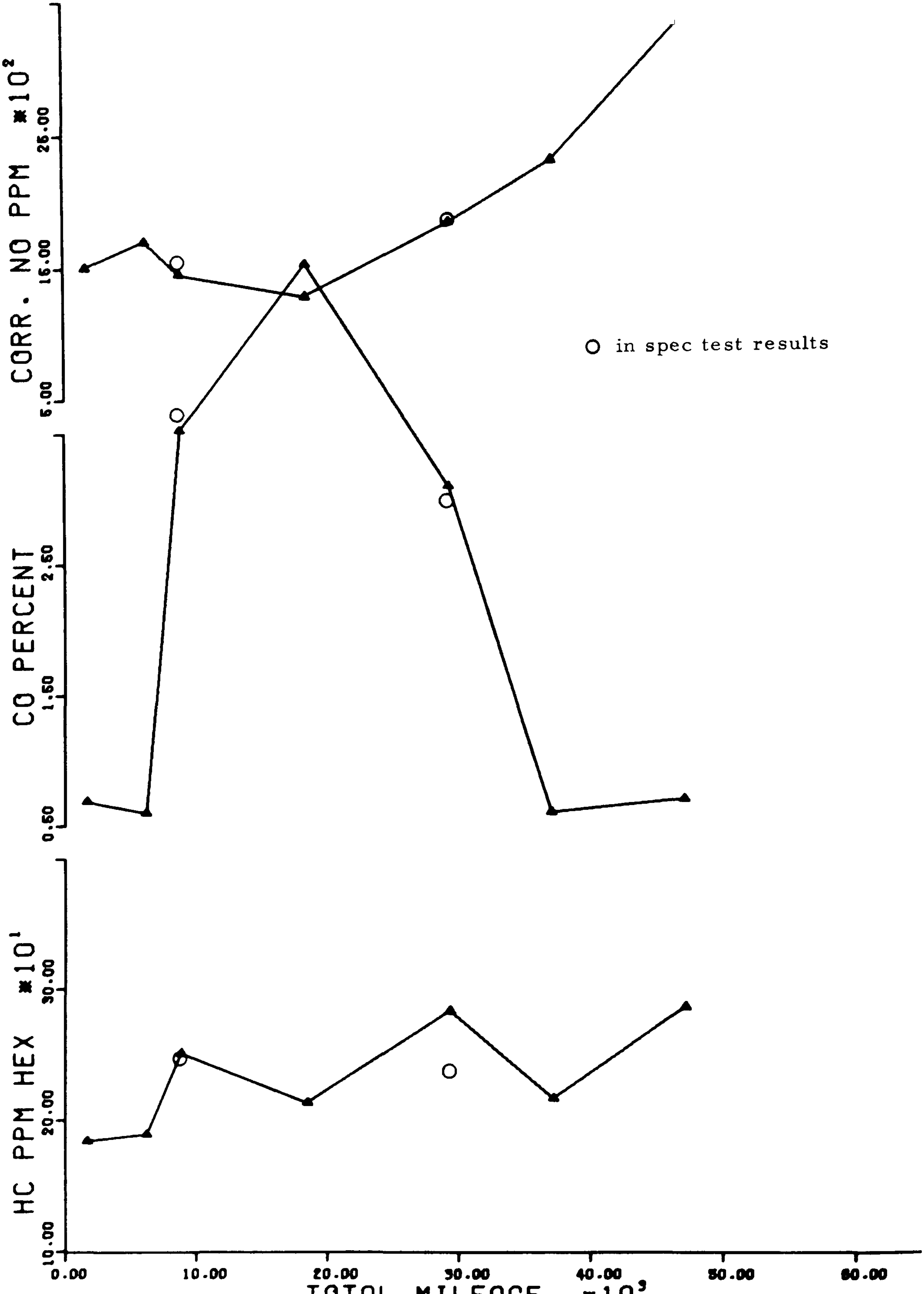



FIGURE E-39 UNIT 039 70 FORD 16000 LB GVW SERVICE 300 CID I6 ENGINE

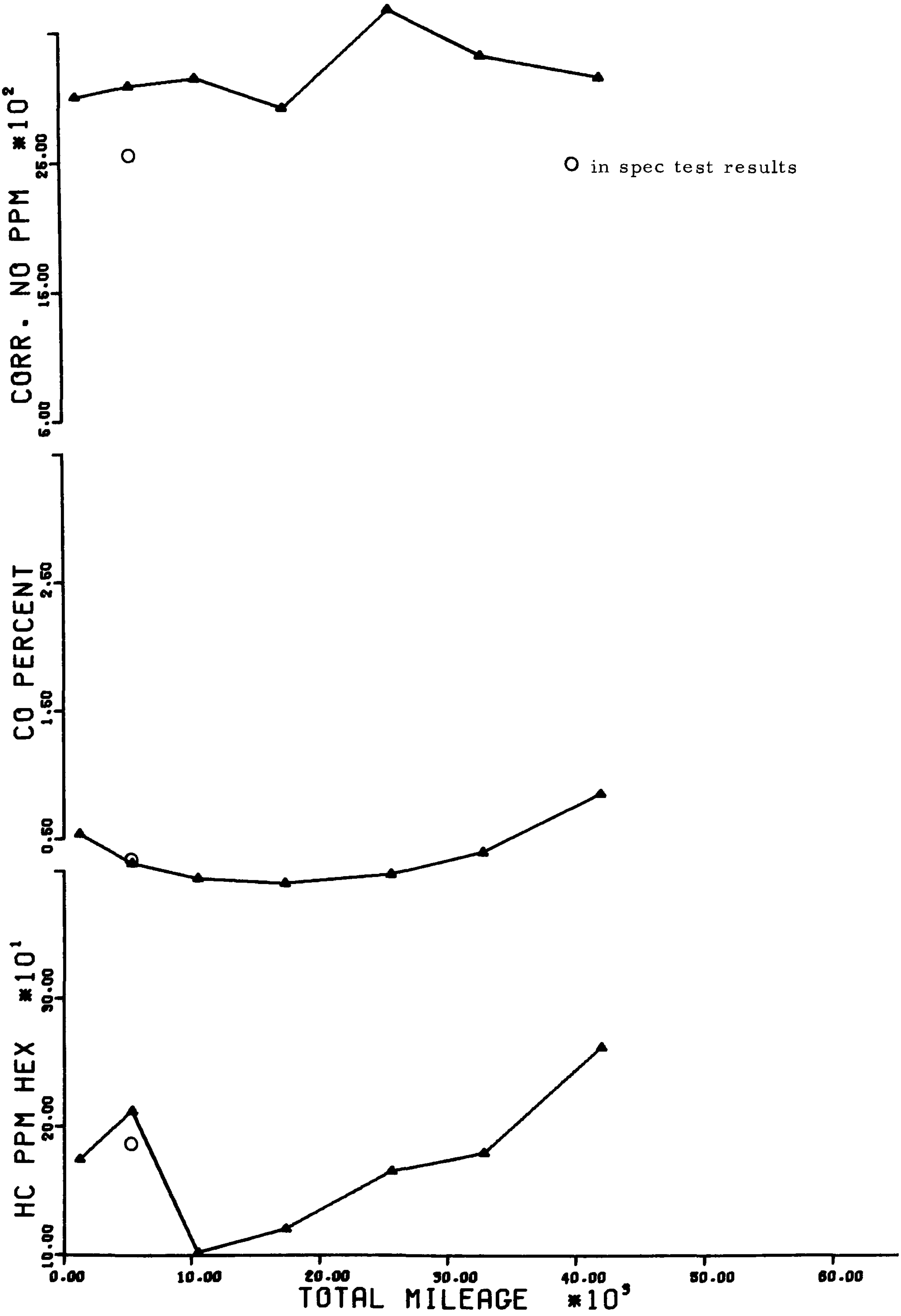



FIGURE E-40 UNIT 040 70 FORD 16000 LB GVW SERVICE 300 CID I6 ENGINE

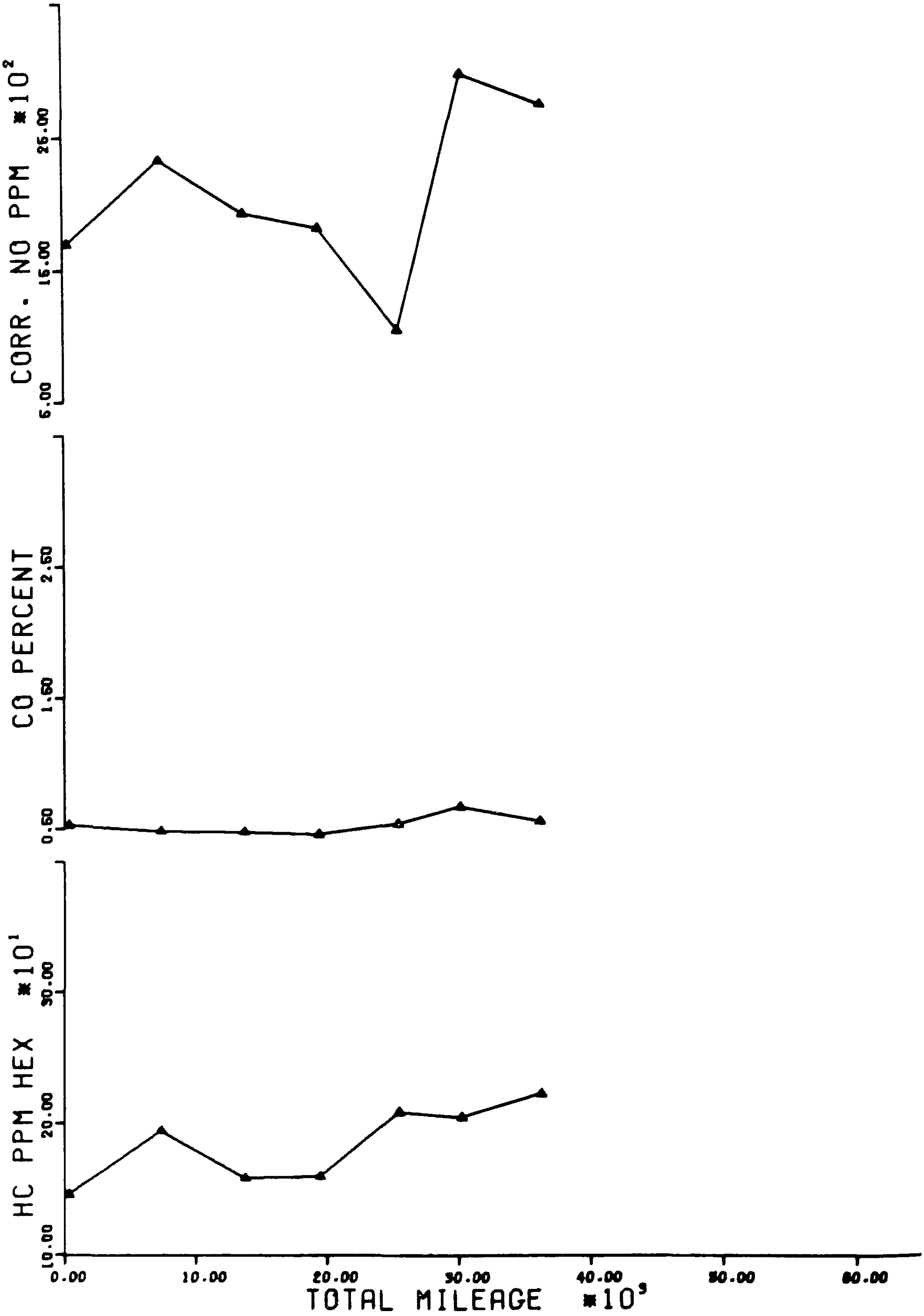



FIGURE E-41.UNIT 041 70 FORD 16000 LB GVW SERVICE 300 CID I6 ENGINE

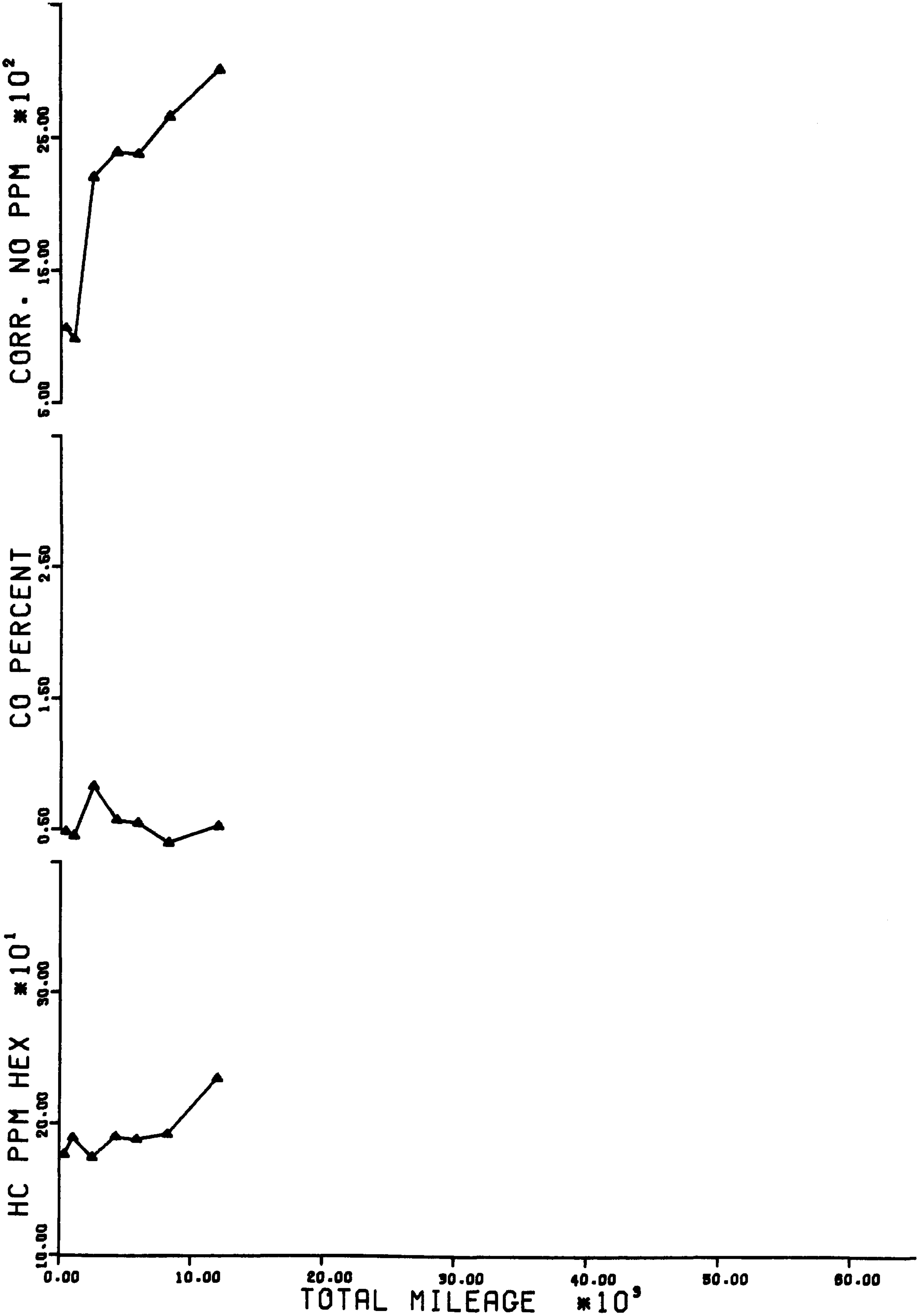



FIGURE E-42 UNIT 042 70 FORD 10000 LB GVW WRECKER 300 CID I6 ENGINE

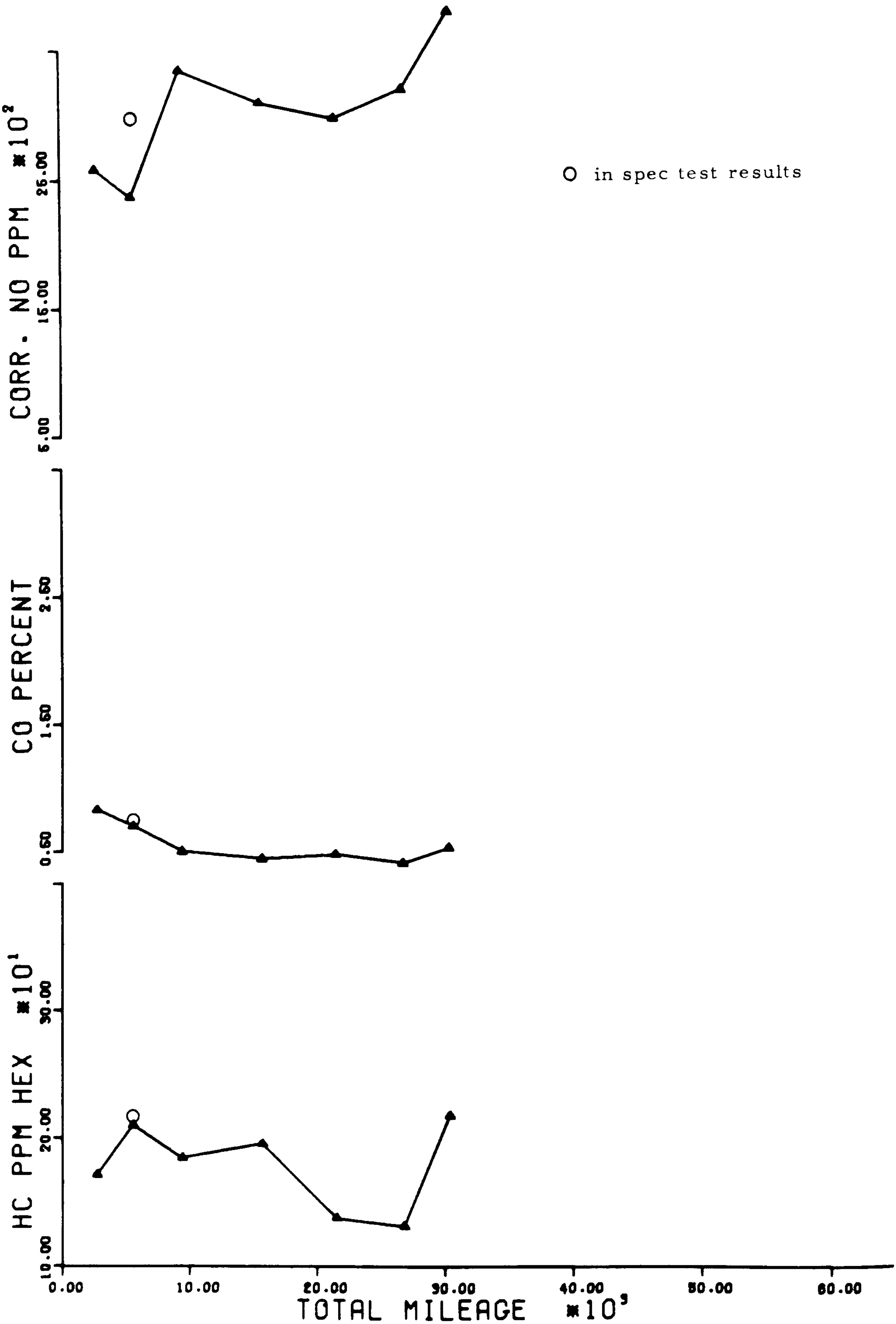



FIGURE E-43 UNIT 043 70 FORD 16000 LB GVW SERVICE 300 CID I6 ENGINE

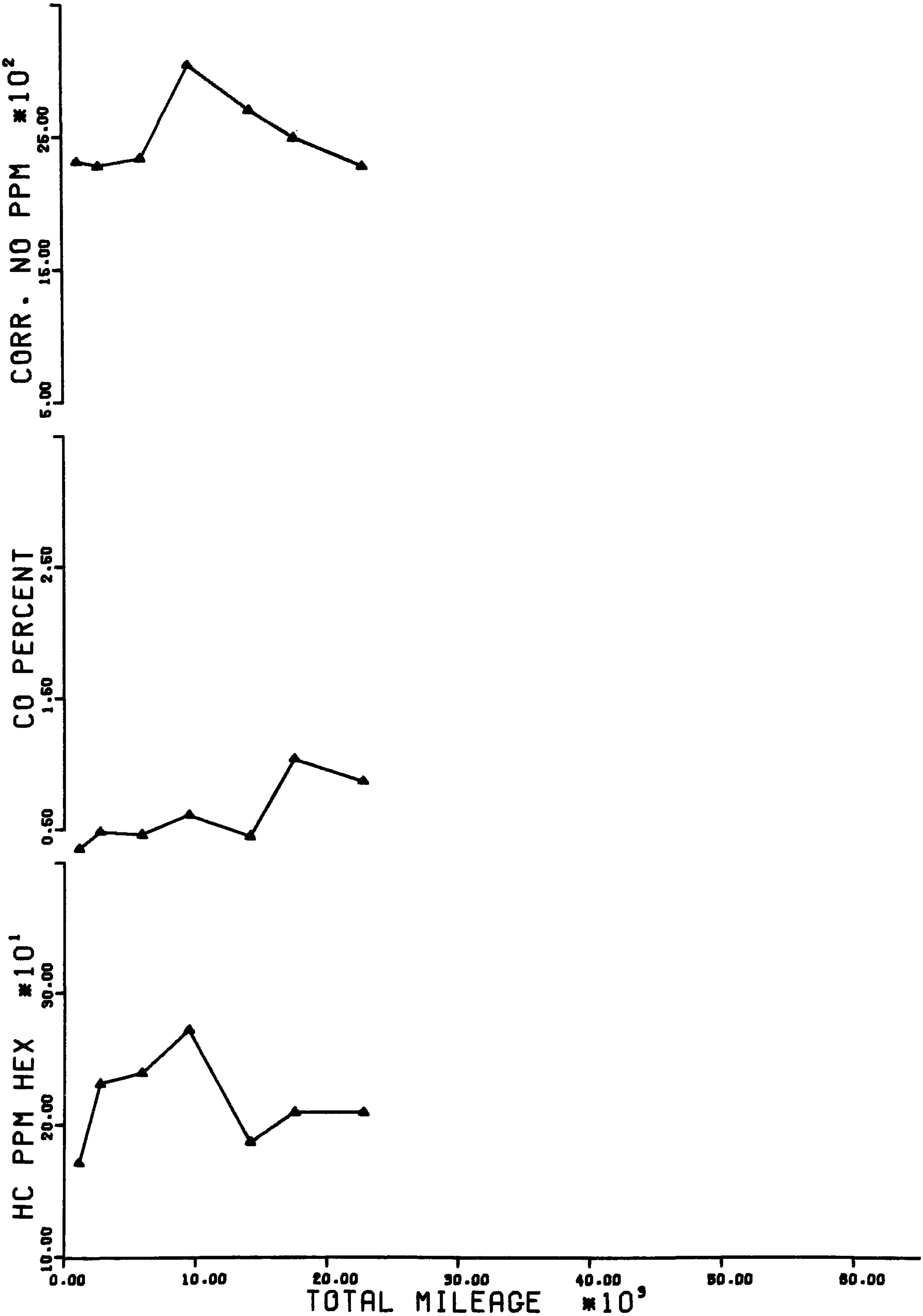



FIGURE E-44. UNIT 044 70 FORD 10000 LB GVW STAKE 300 CID I6 ENGINE

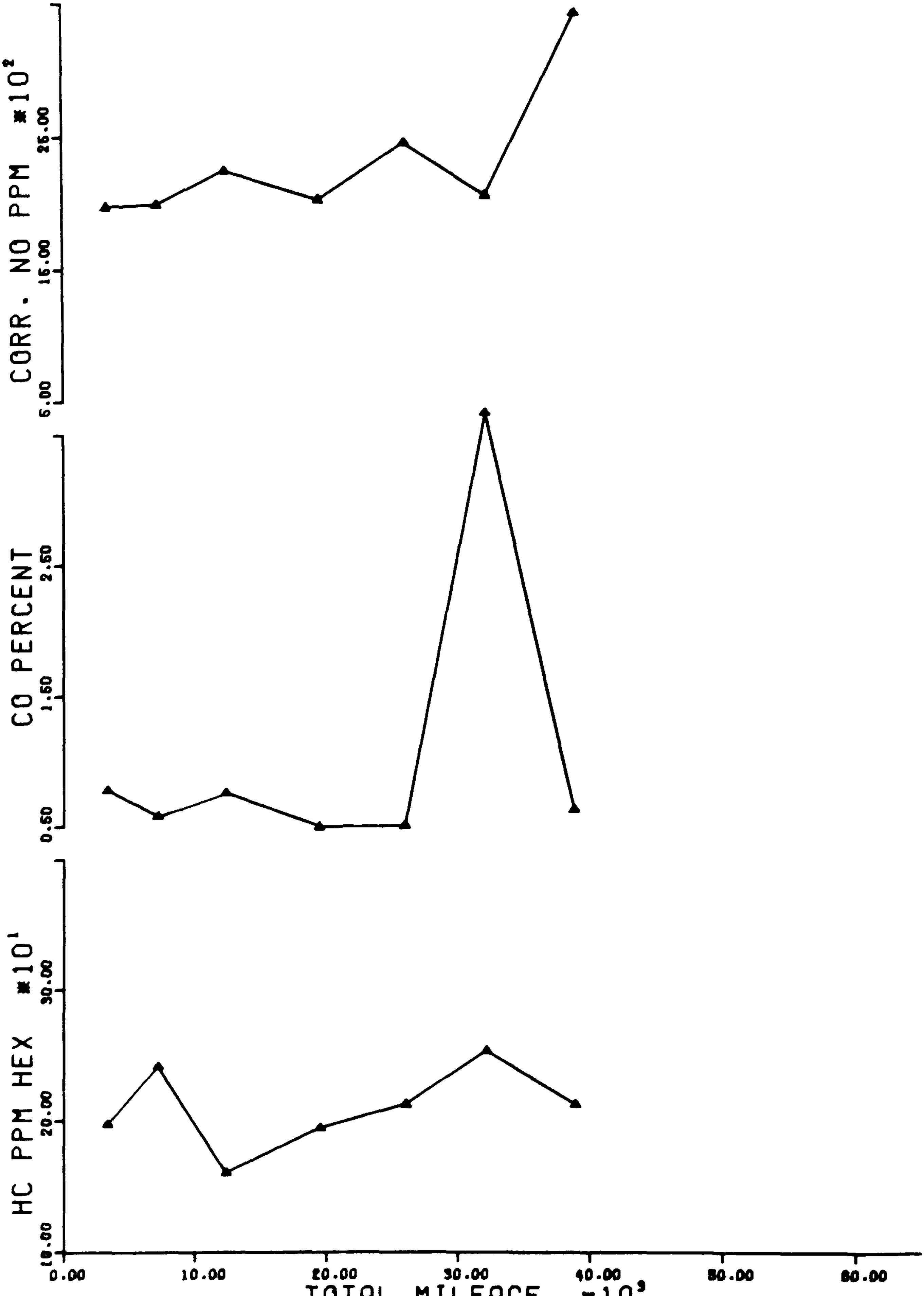



FIGURE E-45 UNIT 045 70 FORD 16000 LB GVW SERVICE 300 CID I6 ENGINE

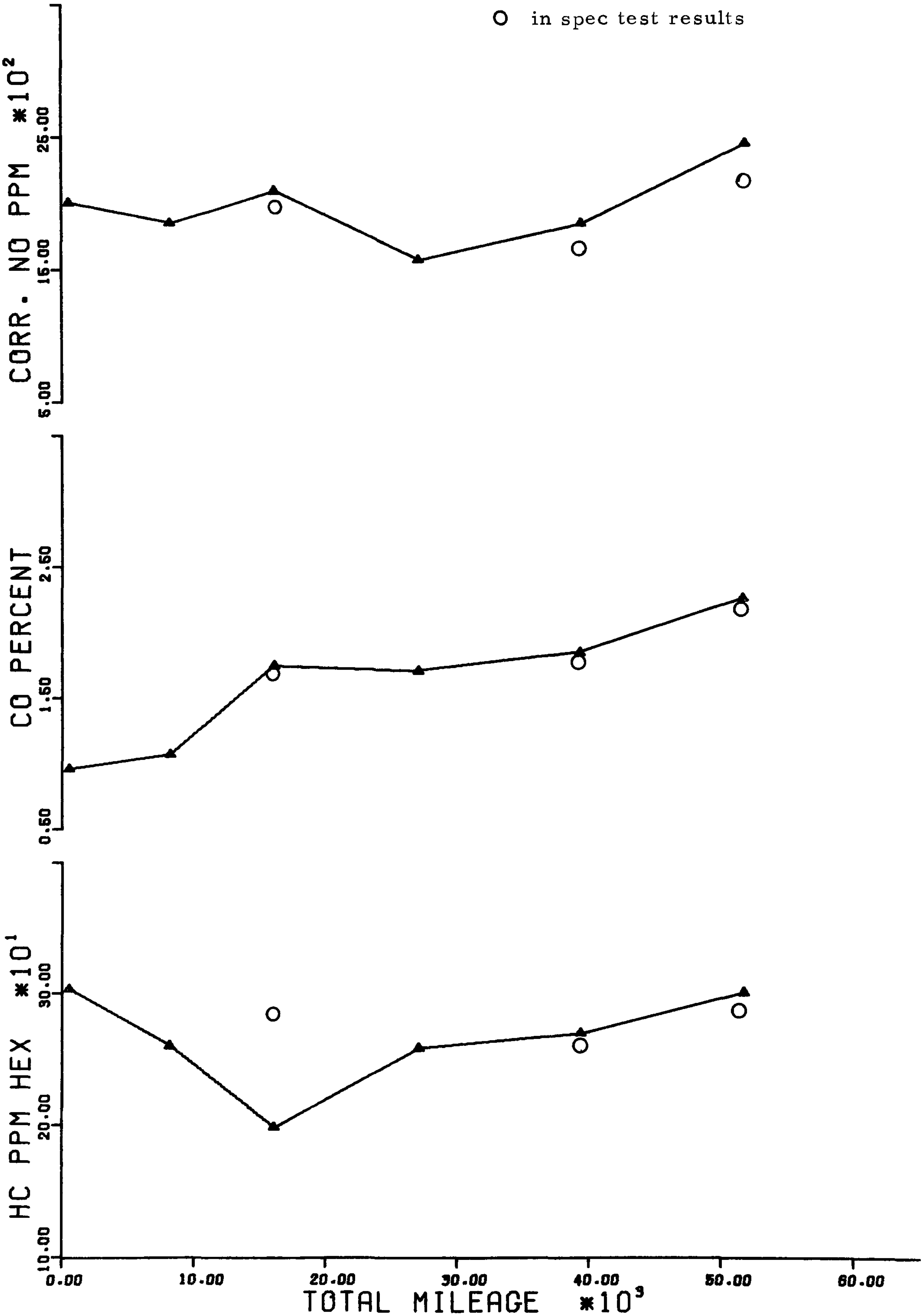



FIGURE E-46 UNIT 046 70 IHC 19700 LB GVW TRUCK 304 CID V8 ENGINE

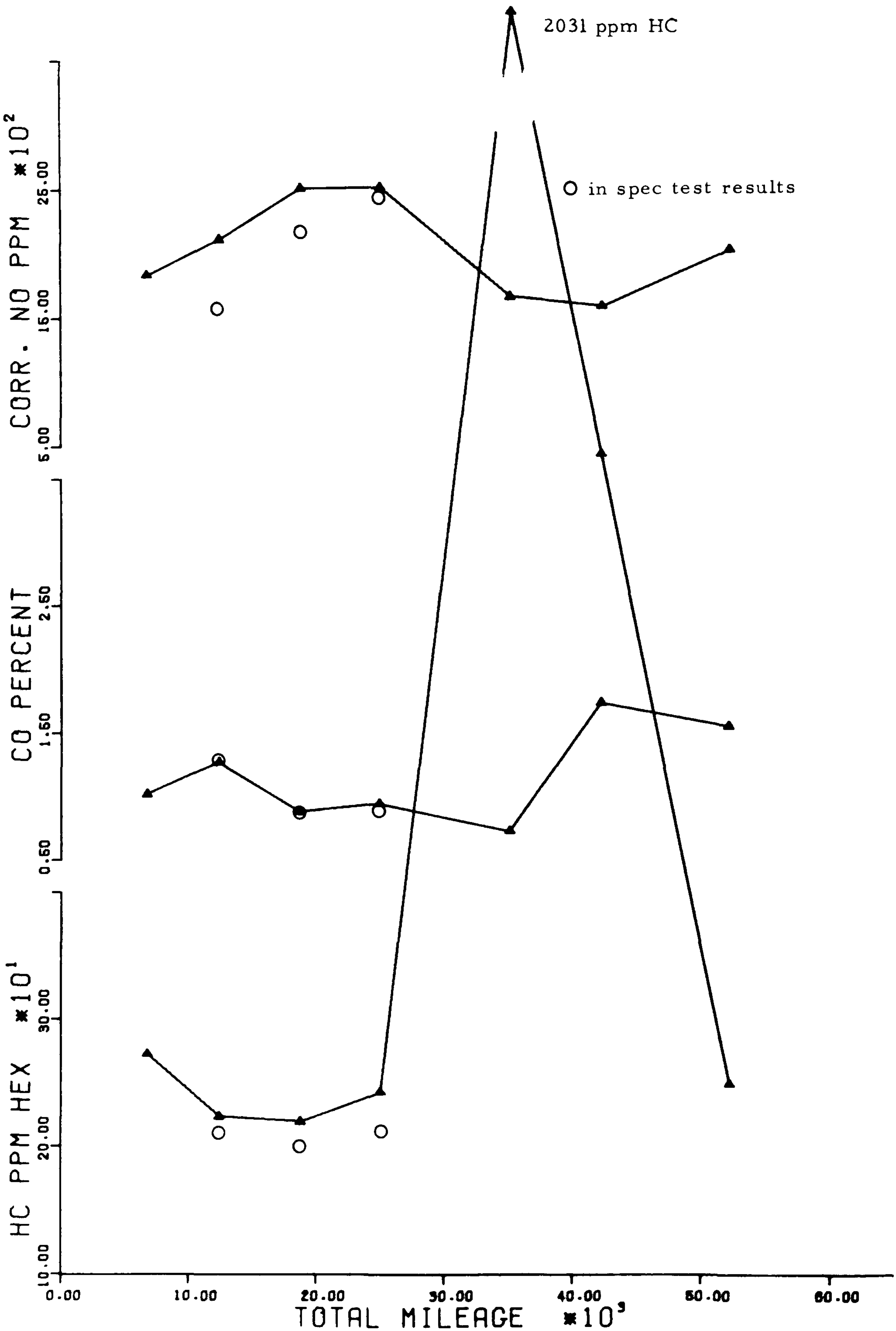



FIGURE E-47 UNIT 047 70 IHC 19700 LB GVW SERVICE 304 CID V8 ENGINE

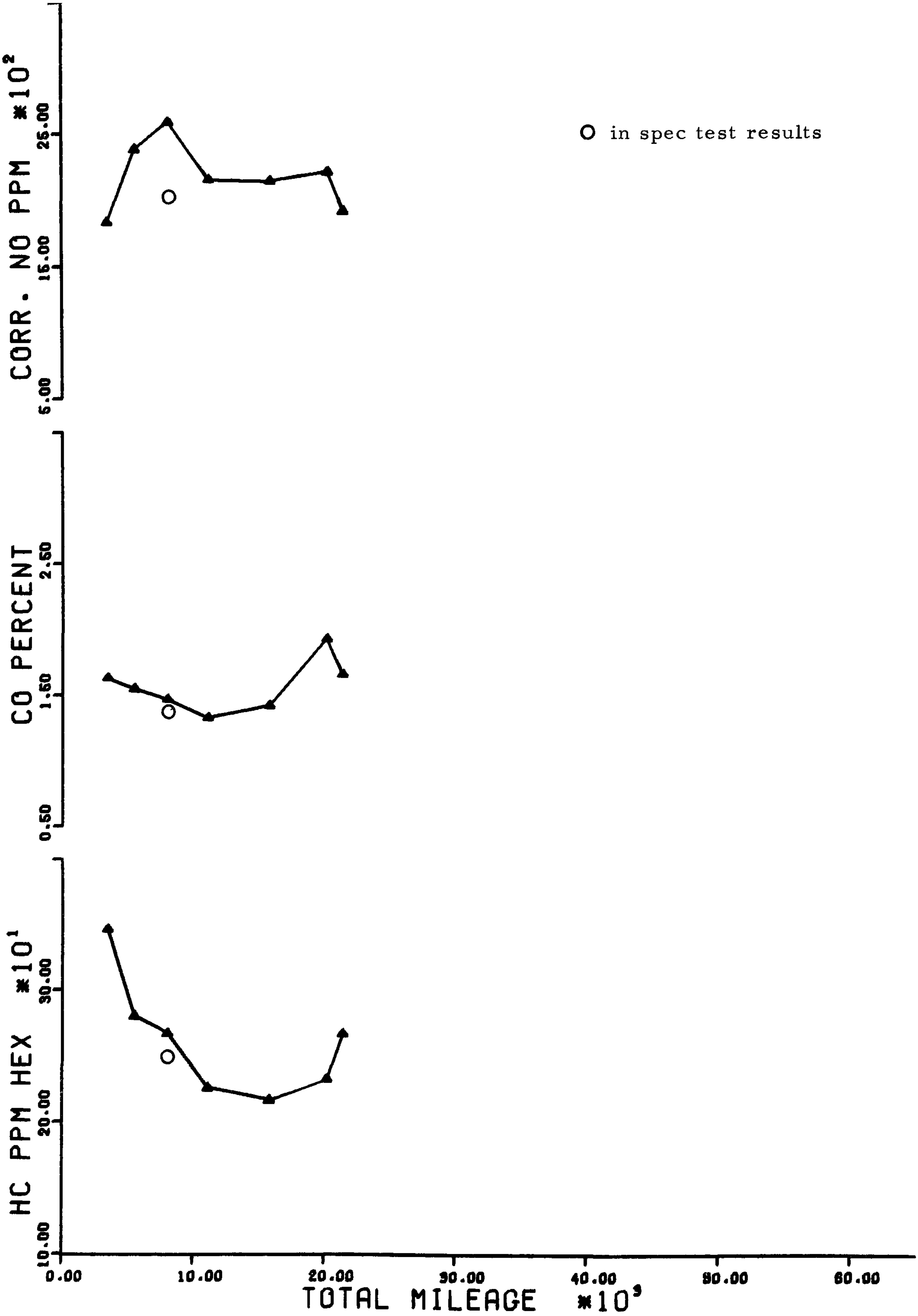



FIGURE E-48 UNIT 048 70 IHC 19700 LB GVW SERVICE 304 CID V8 ENGINE

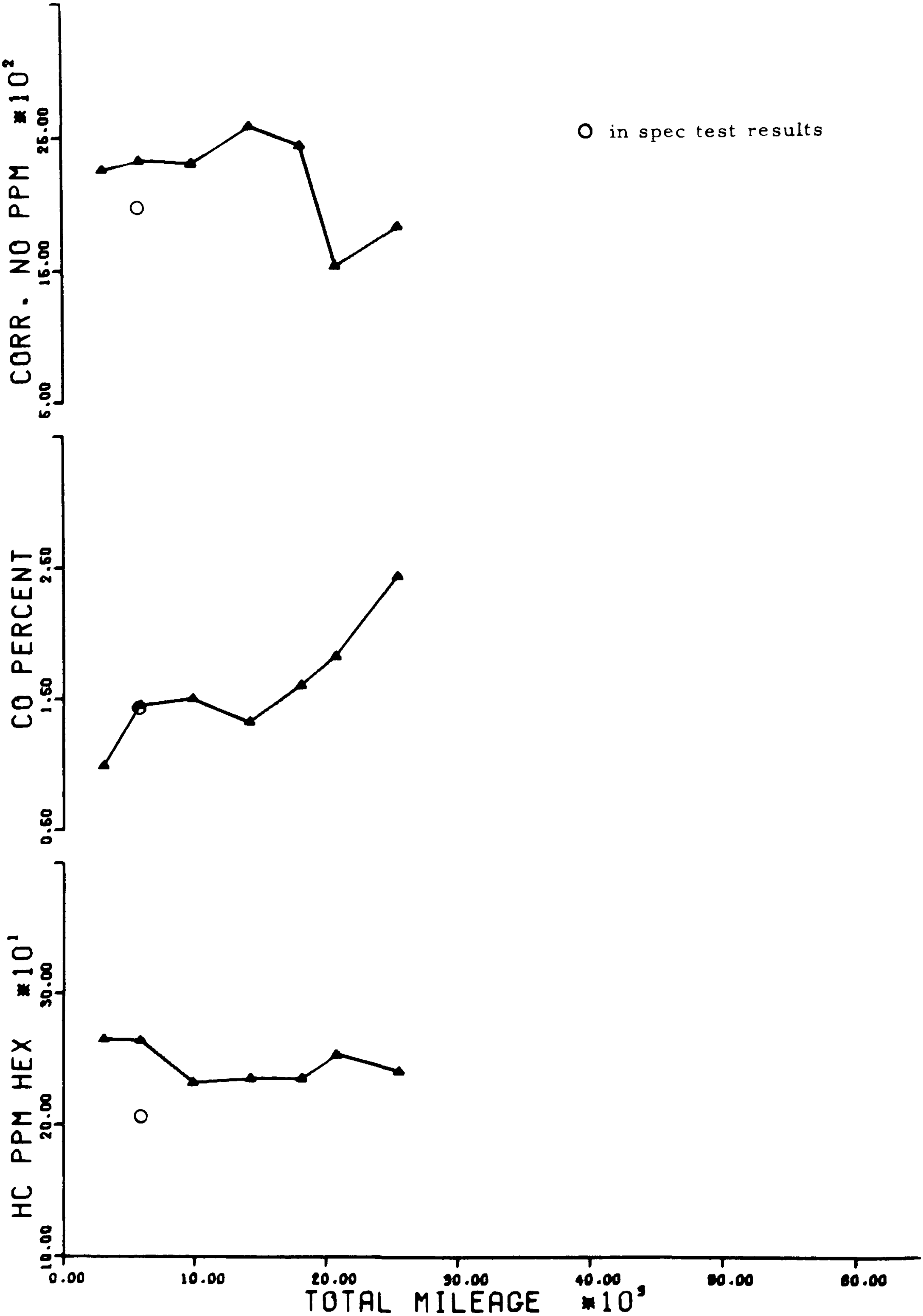



FIGURE E-49 UNIT 049 70 IHC 10000 LB GVW CREW TR 304 CID V8 ENGINE

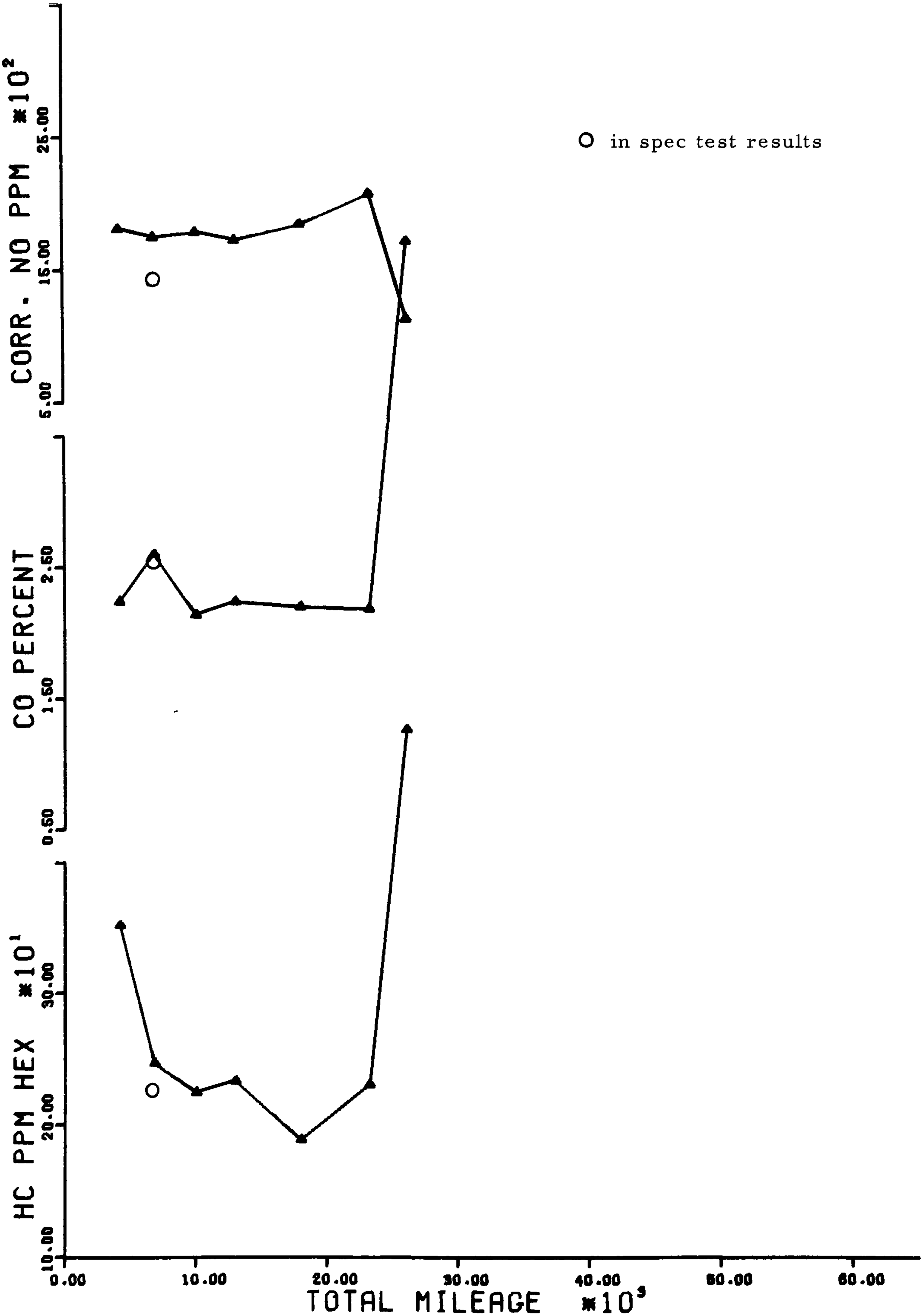



FIGURE E-50 UNIT 050 70 IHC 10000 LB GVW CREW TR 304 CID V8 ENGINE

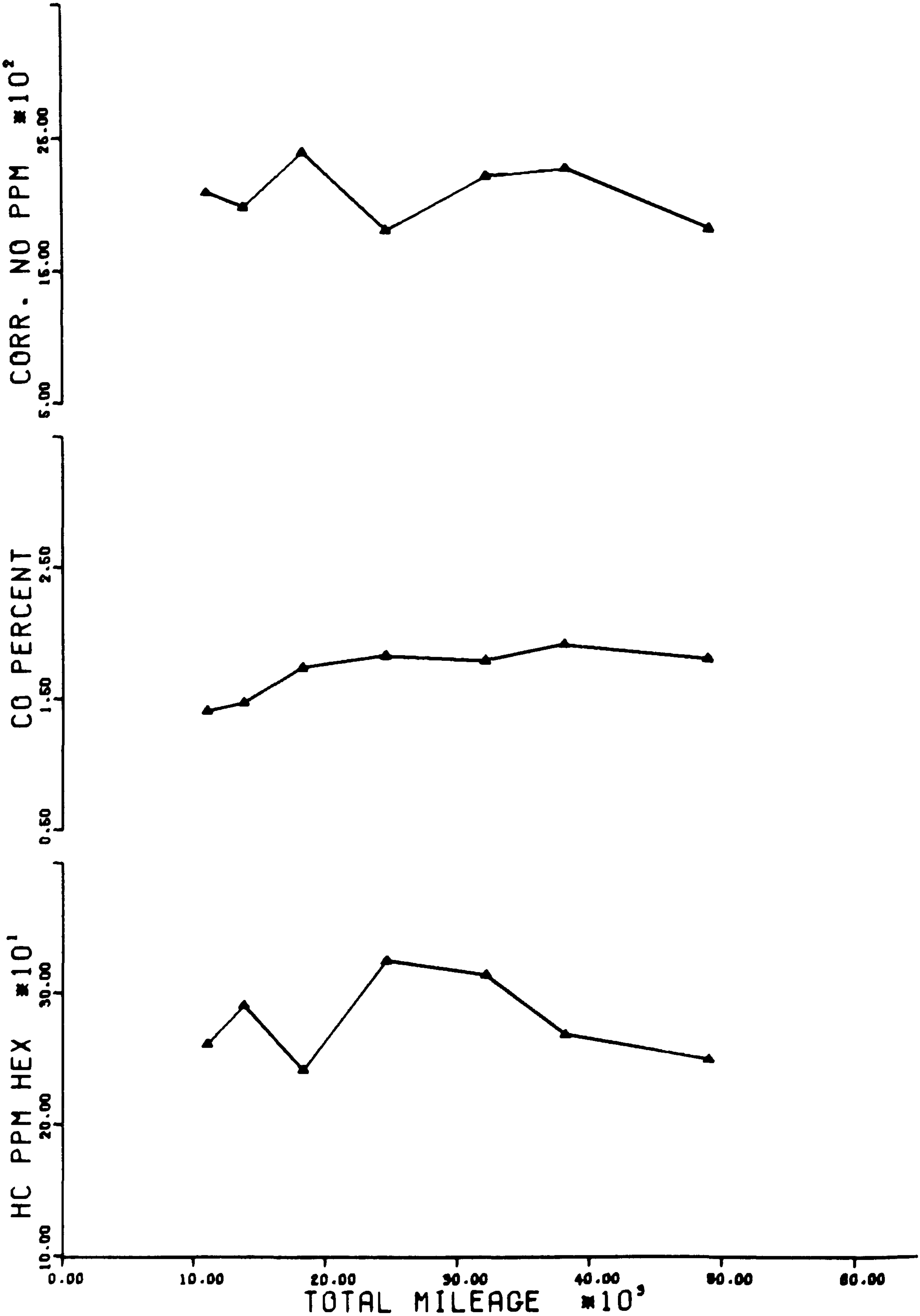



FIGURE E-51 UNIT 051 70 IHC 7500 LB GVW DELV 304 CID V8 ENGINE

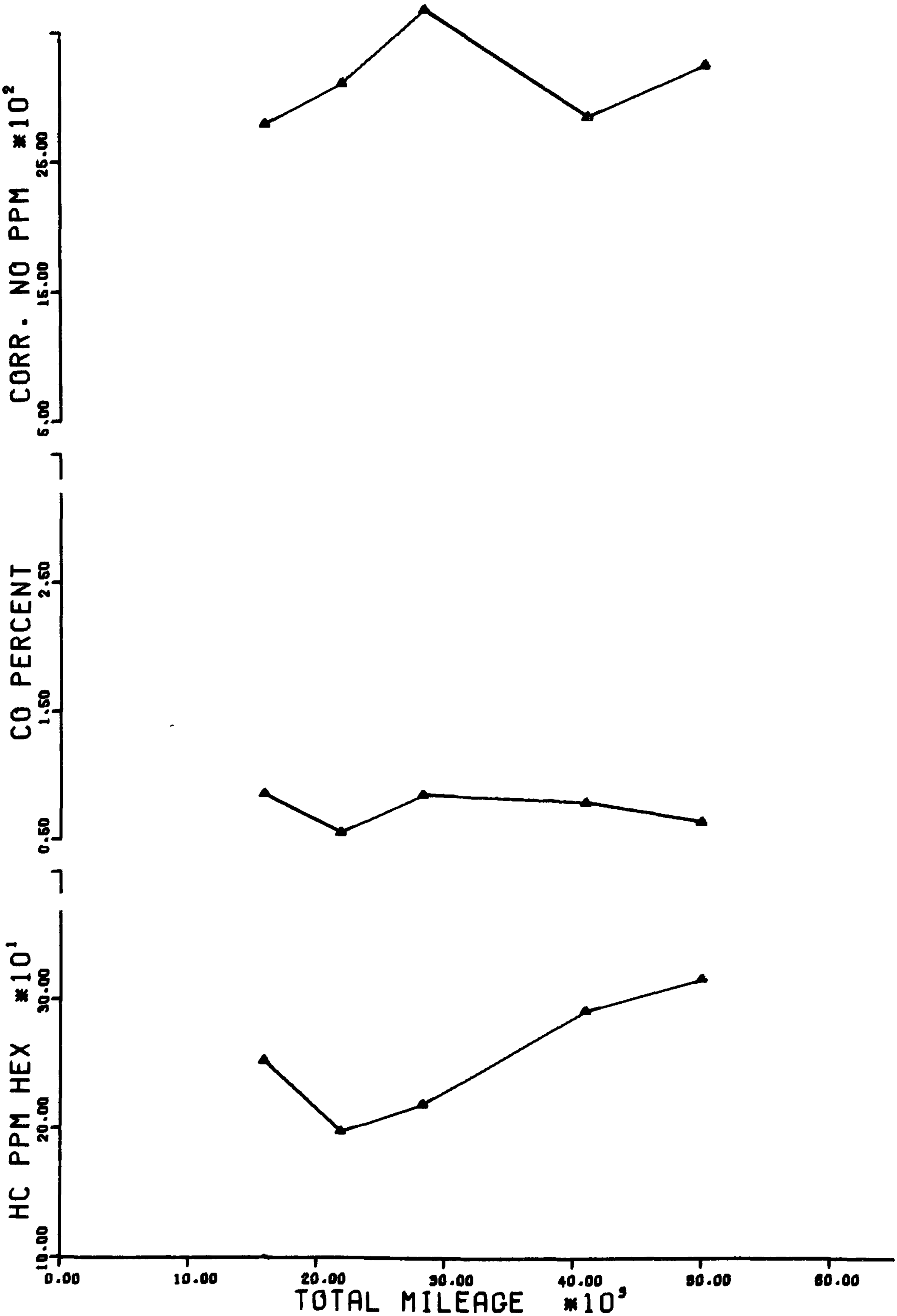



FIGURE E-52 UNIT 052 70 GMC 7500 LB GVW DELV 292 CID I6 ENGINE

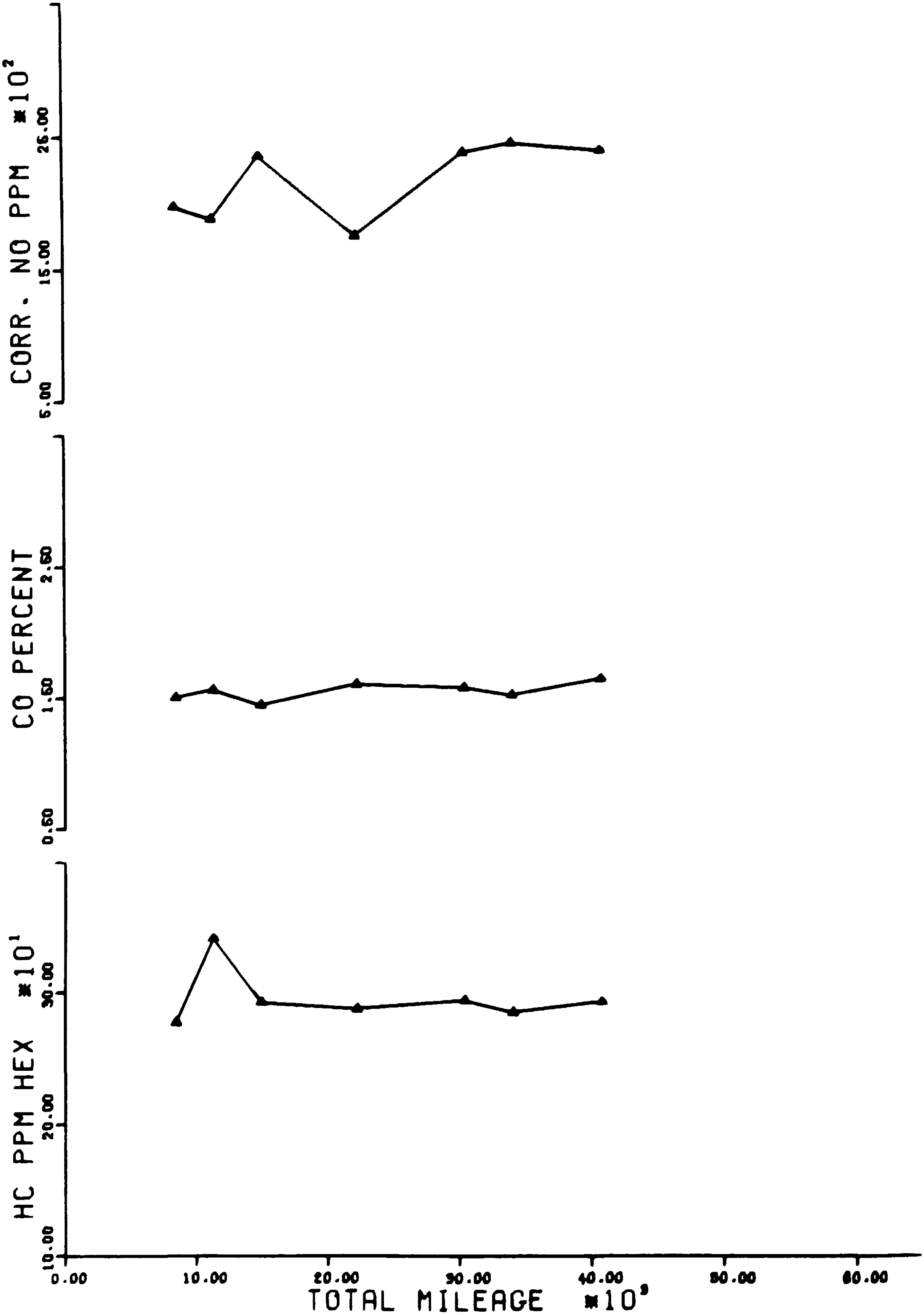



FIGURE E-53 UNIT 053 70 DODGE 7500 LB GVW DELV 318 CID V8 ENGINE

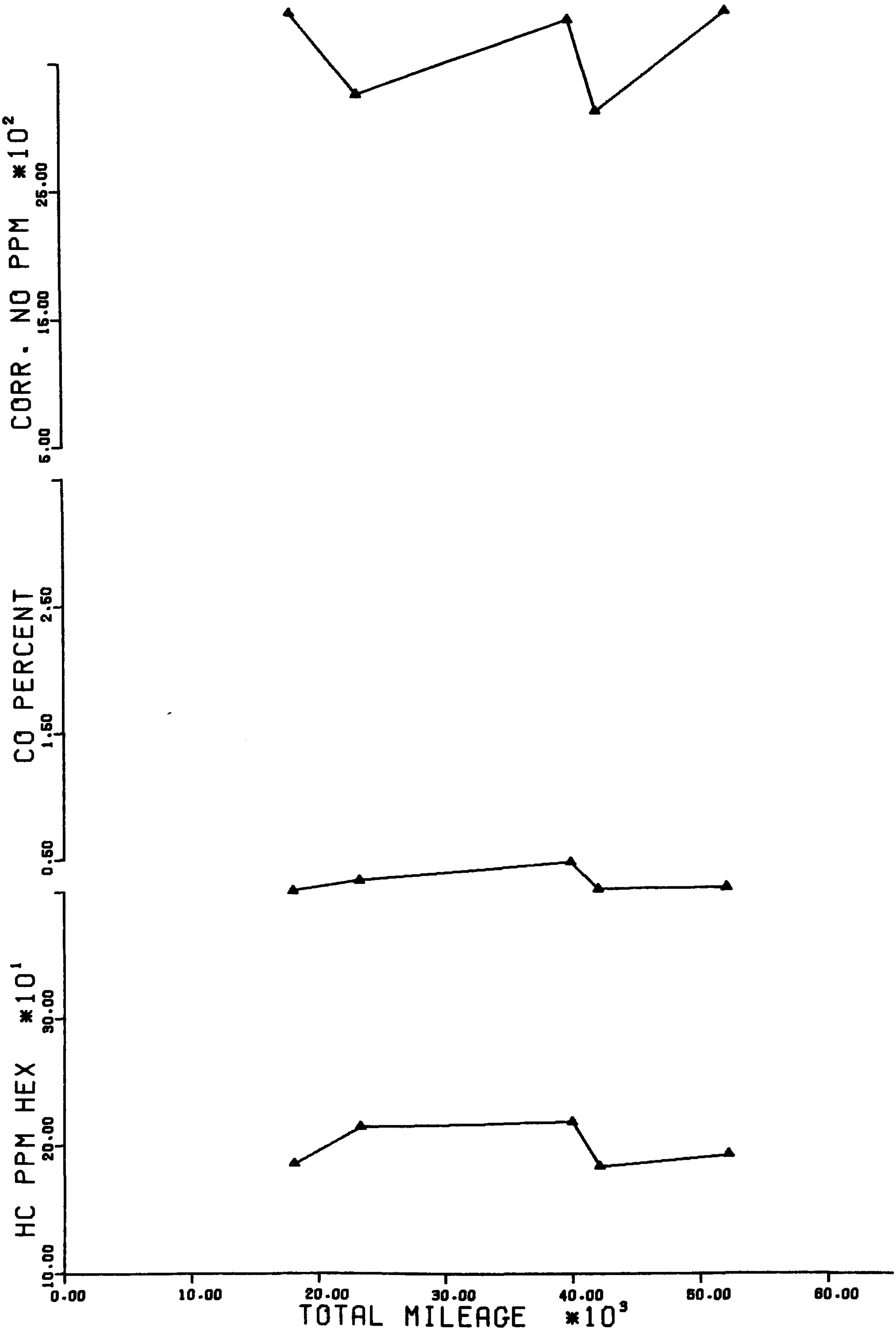



FIGURE E-54 UNIT 054 70 FORD 7500 LB GVW DELV 300 CID I6 ENGINE

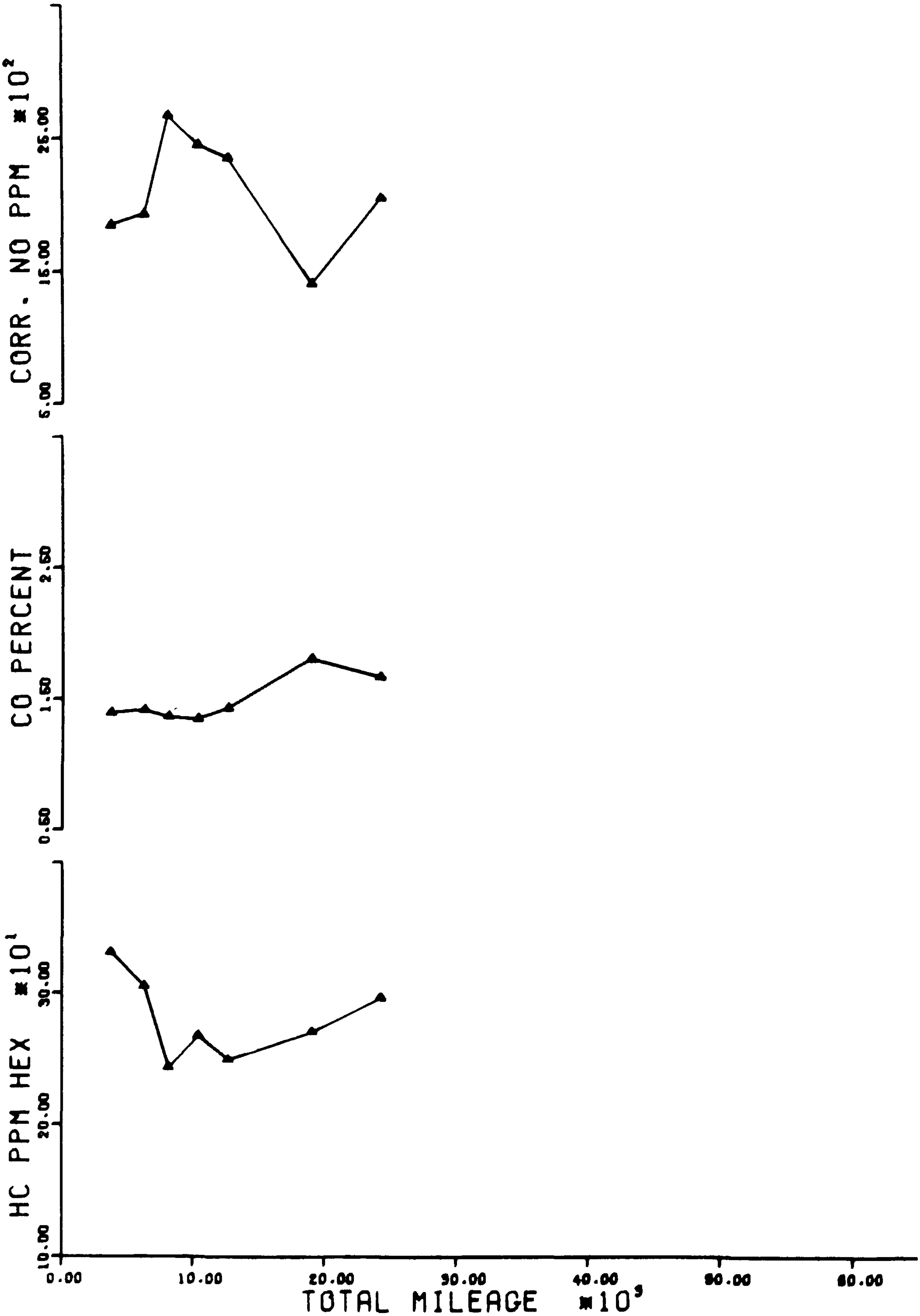



FIGURE E-55 UNIT 055 70 IHC 19700 LB GVW SERVICE 304 CID V8 ENGINE

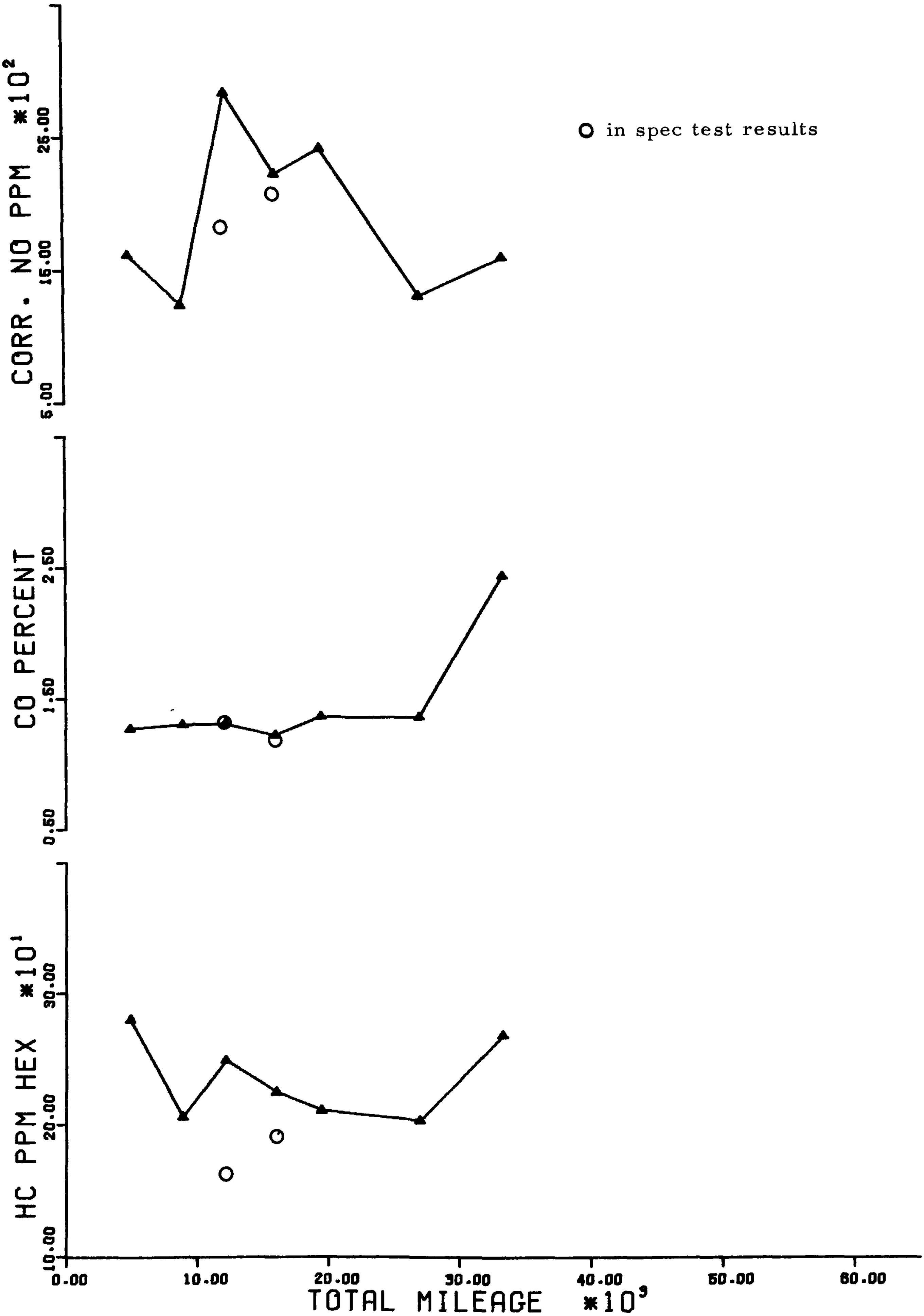



FIGURE E-56 UNIT 056 70 IHC 19700 LB GVW SERVICE 304 CID V8 ENGINE

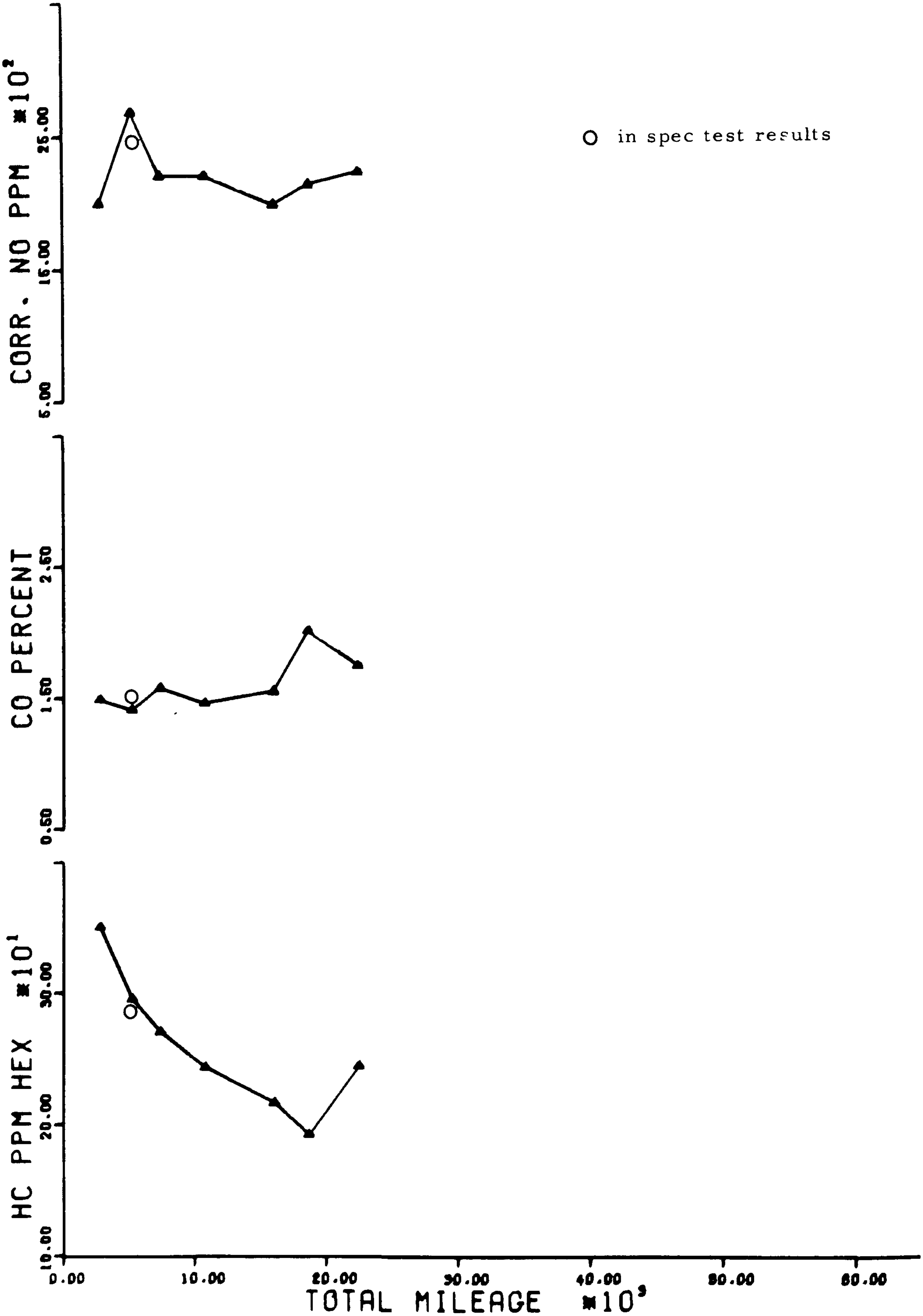



FIGURE E-57 UNIT 057 70 IHC 18700 LB GVW SERVICE 304 CID V8 ENGINE

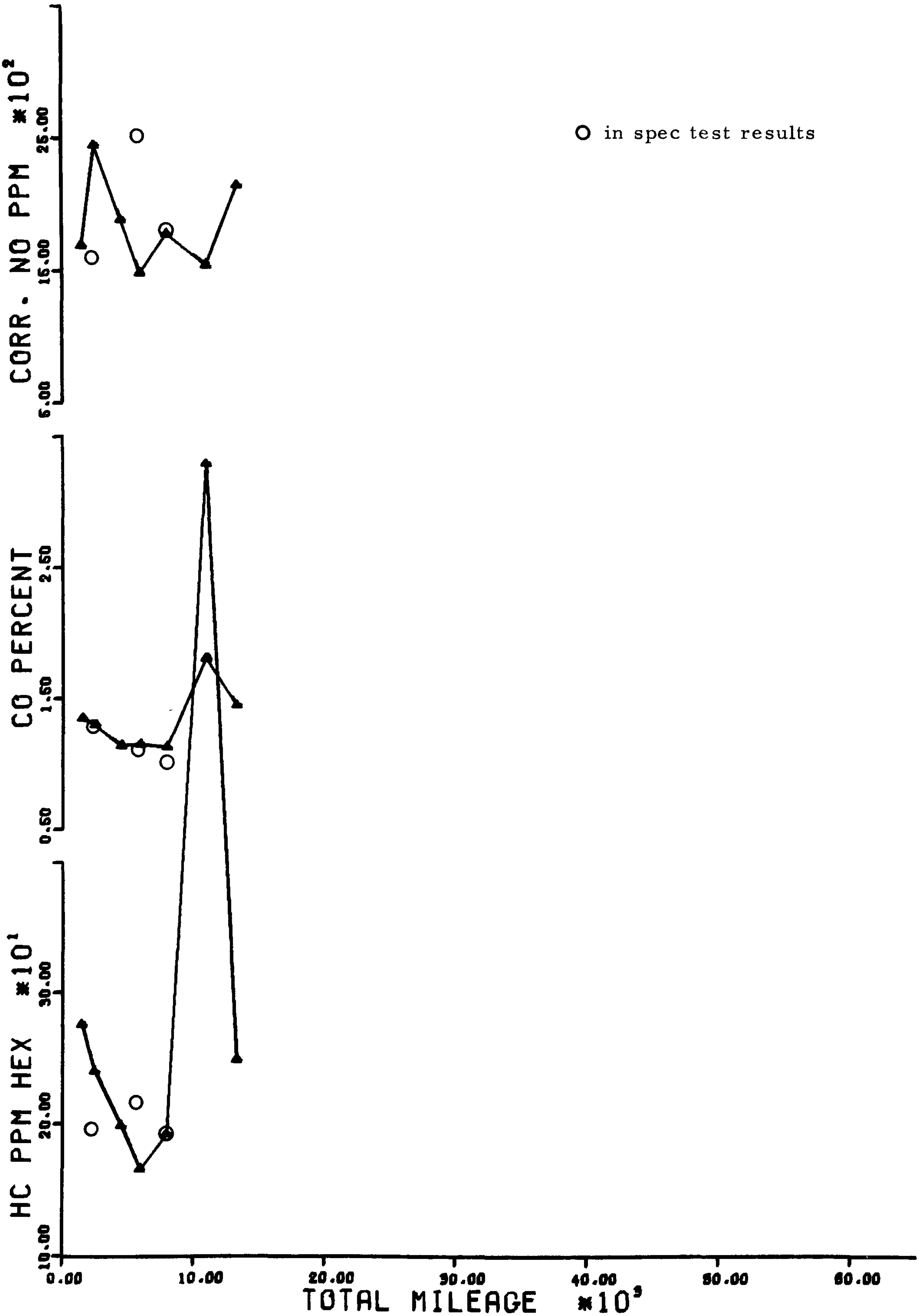



FIGURE E-58 UNIT 058 70 IHC 19700 LB GVW SERVICE 304 CID V8 ENGINE

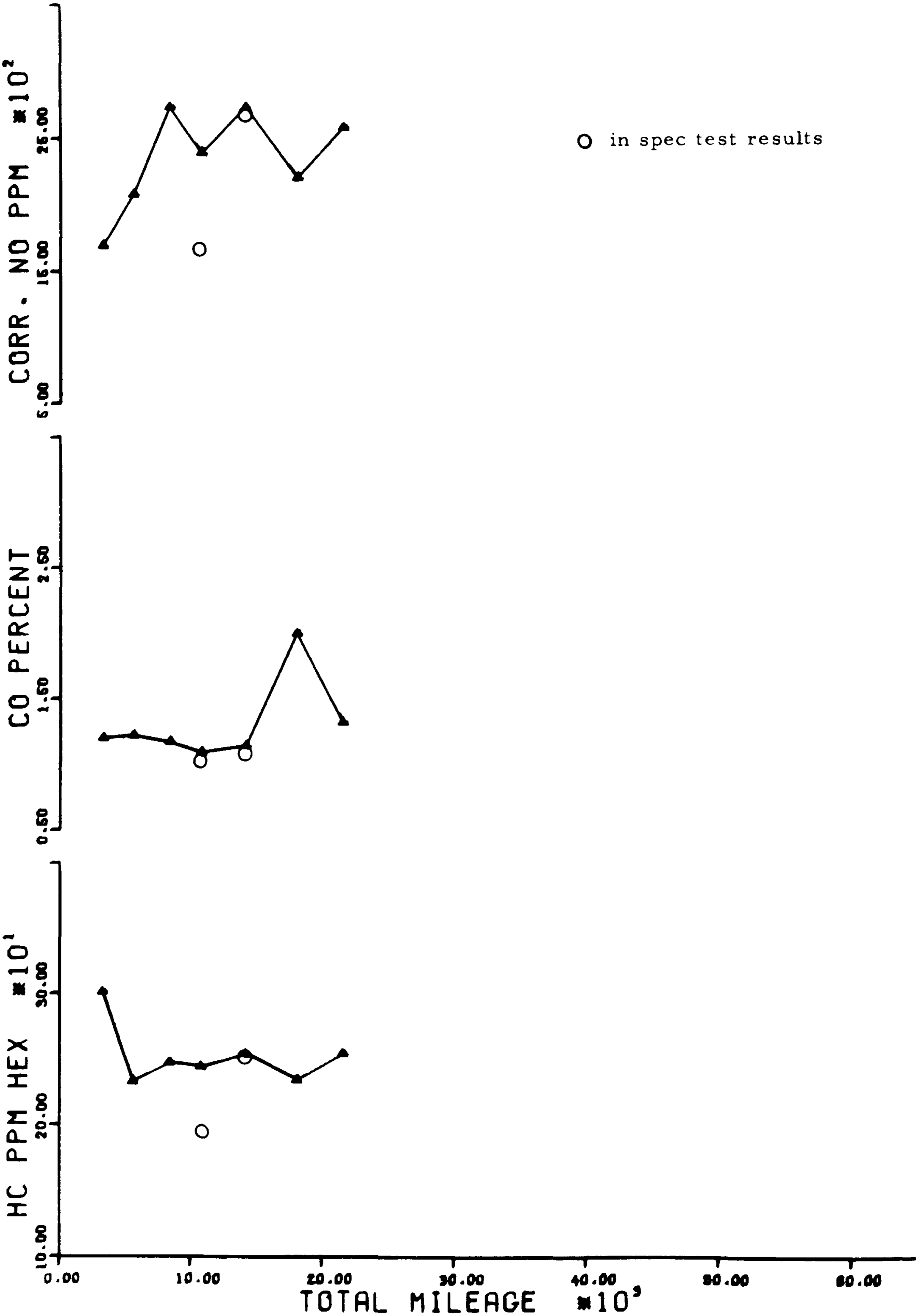



FIGURE E-59 UNIT 059 70 IHC 19700 LB GVW SERVICE 304 CID V8 ENGINE

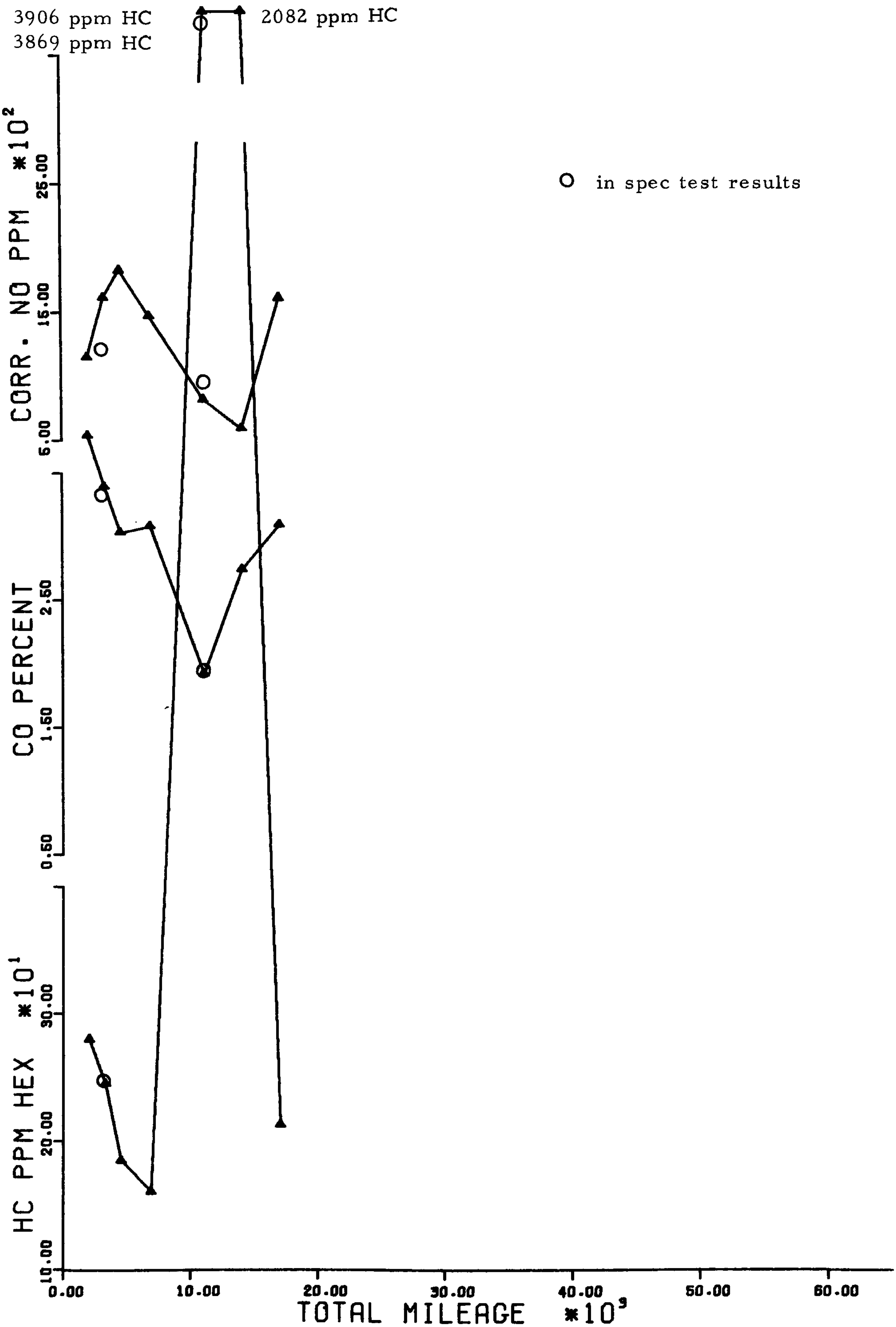



FIGURE E-60 UNIT 060 70 CHEV 7500 LB GVW SERVICE 307 CID V8 ENGINE

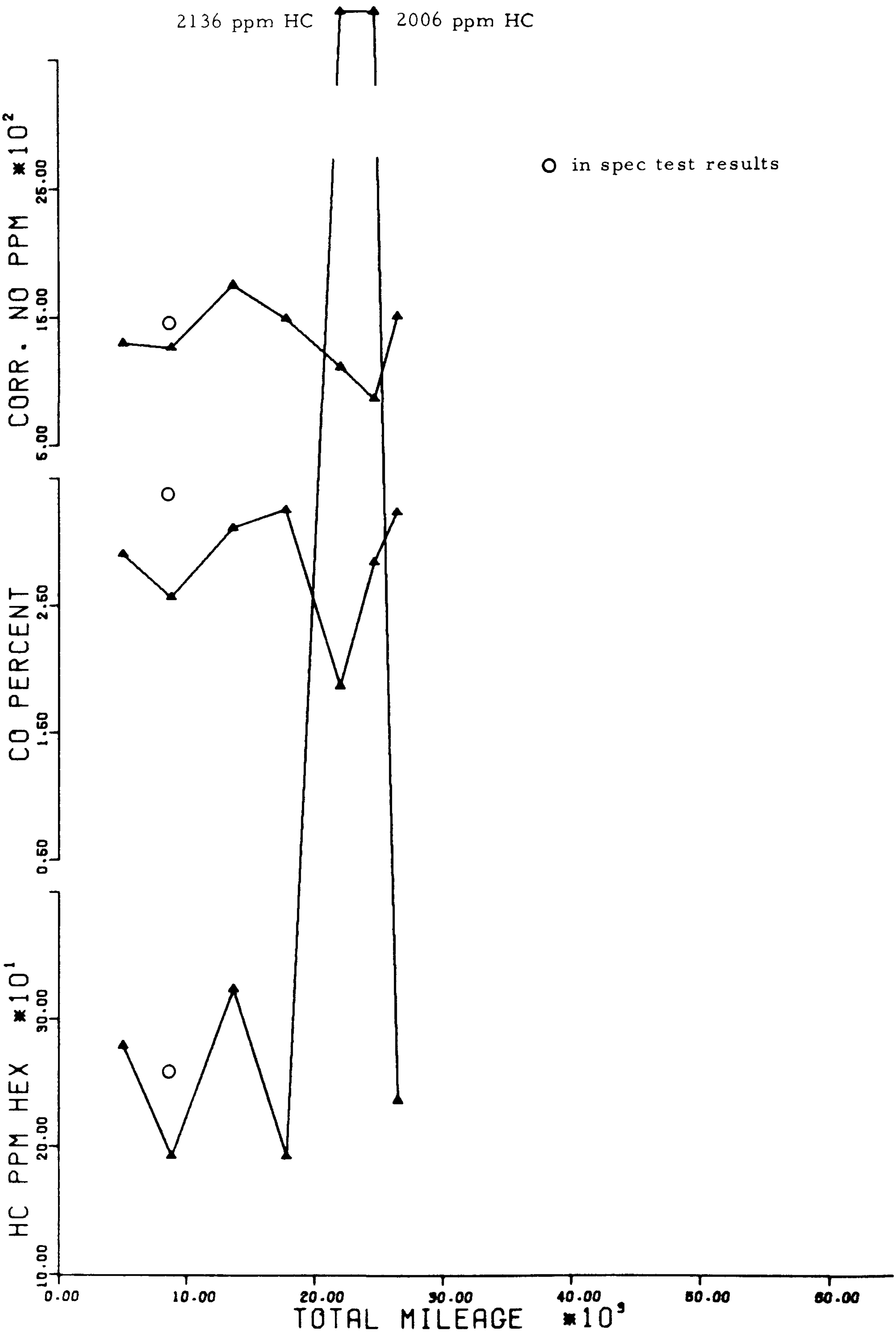


FIGURE E-61 UNIT 061 70 CHEV 7500 LB GVW SERVICE 307 CID V8 ENGINE

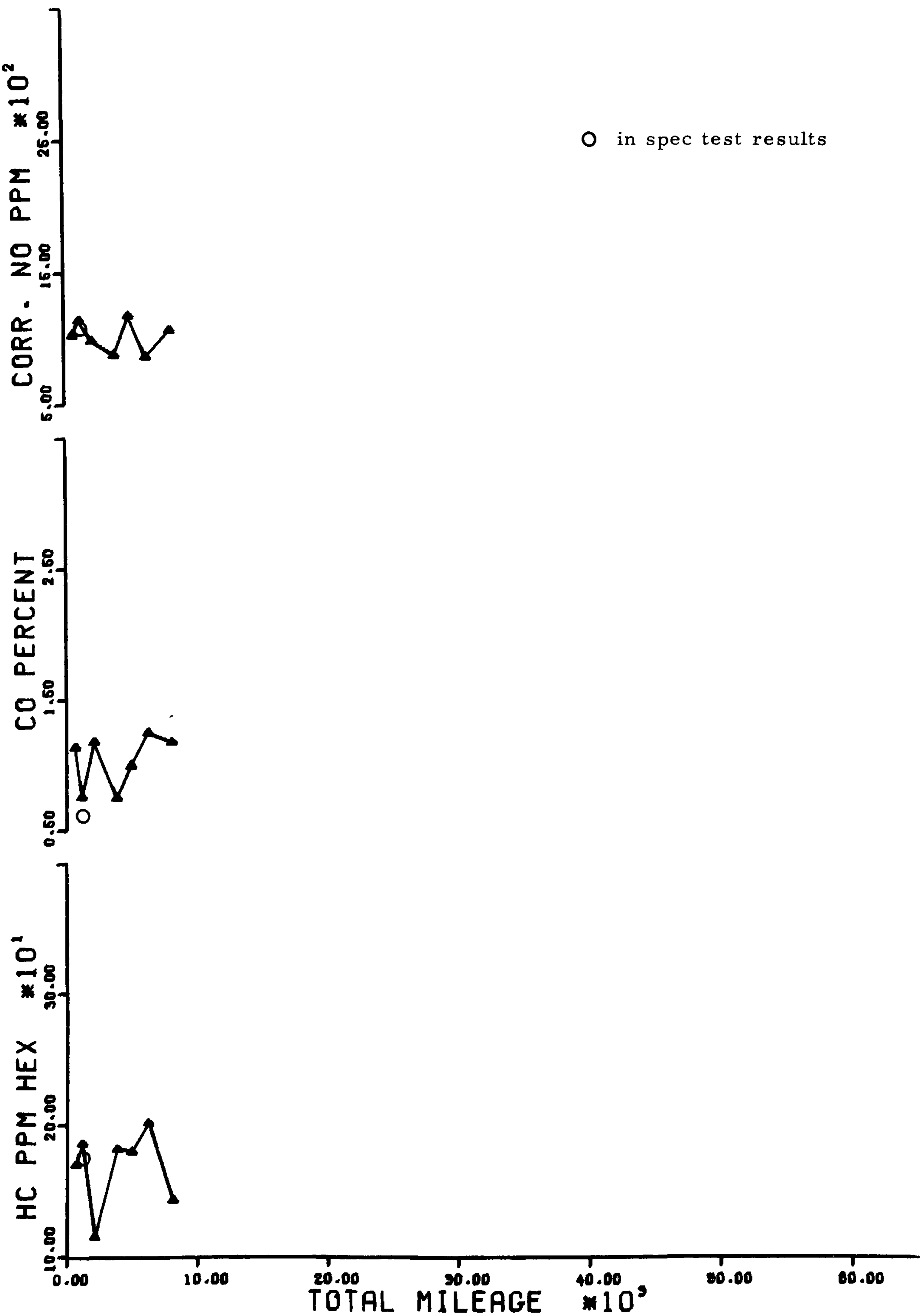



FIGURE E-62 UNIT 062 70 CHEV 32000 LB GVW CRANE 366 CID V8 ENGINE

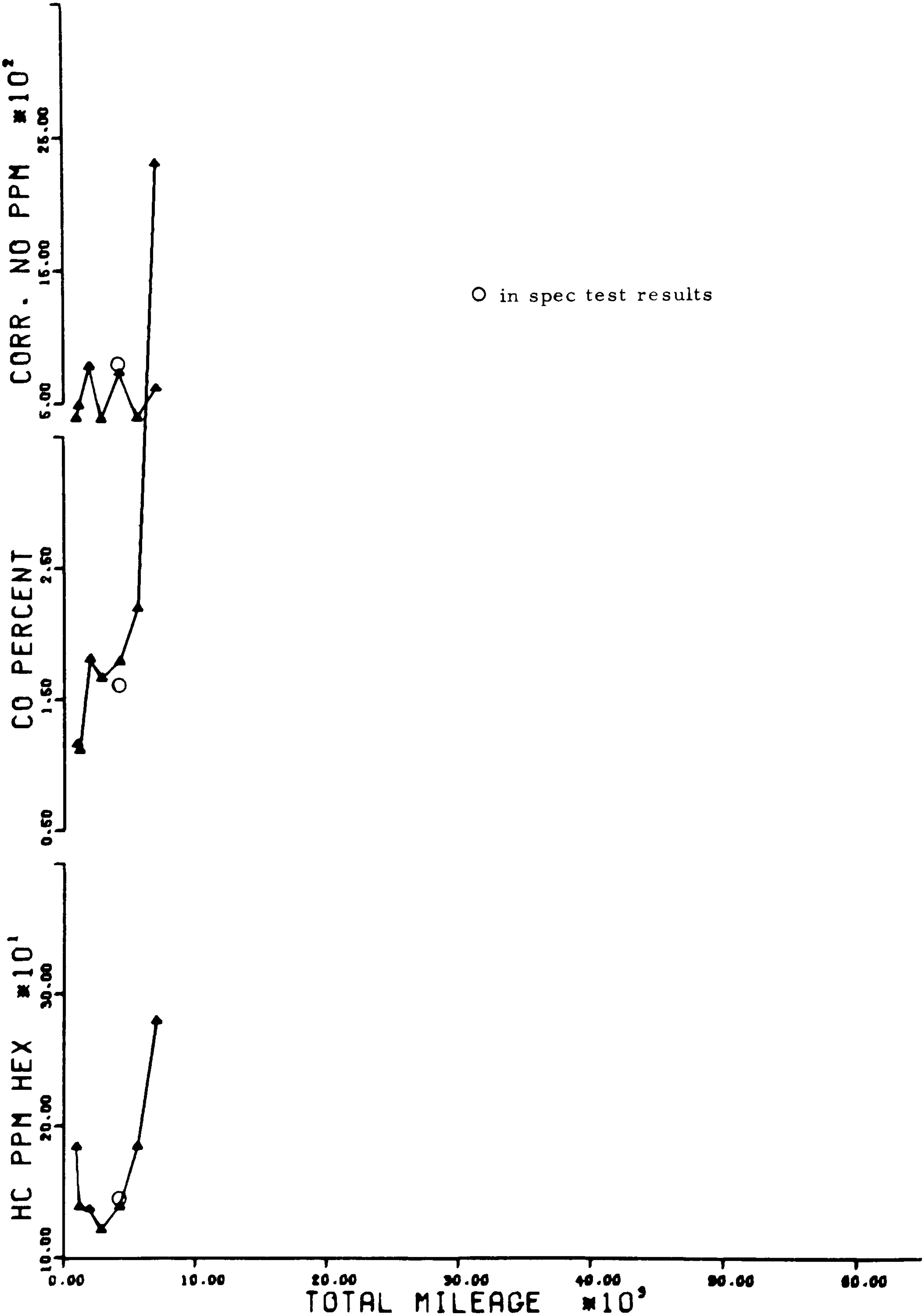



FIGURE E-63 UNIT 063 70 CHEV 32000 LB GVW CRANE 366 CID V8 ENGINE

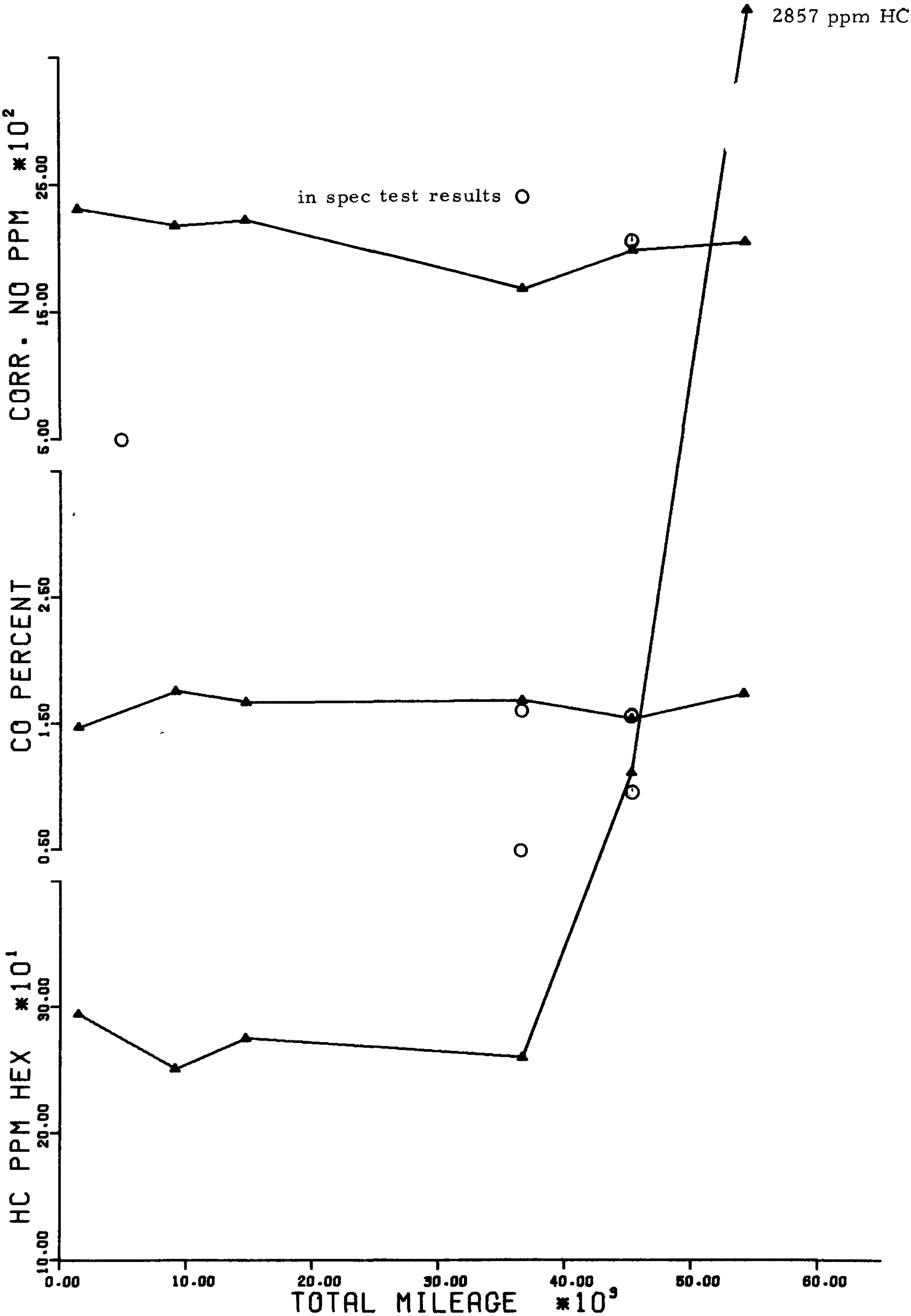



FIGURE E-64 UNIT 064 70 DODGE 24000 LB GVW FRGHT 318 CID V8 ENGINE

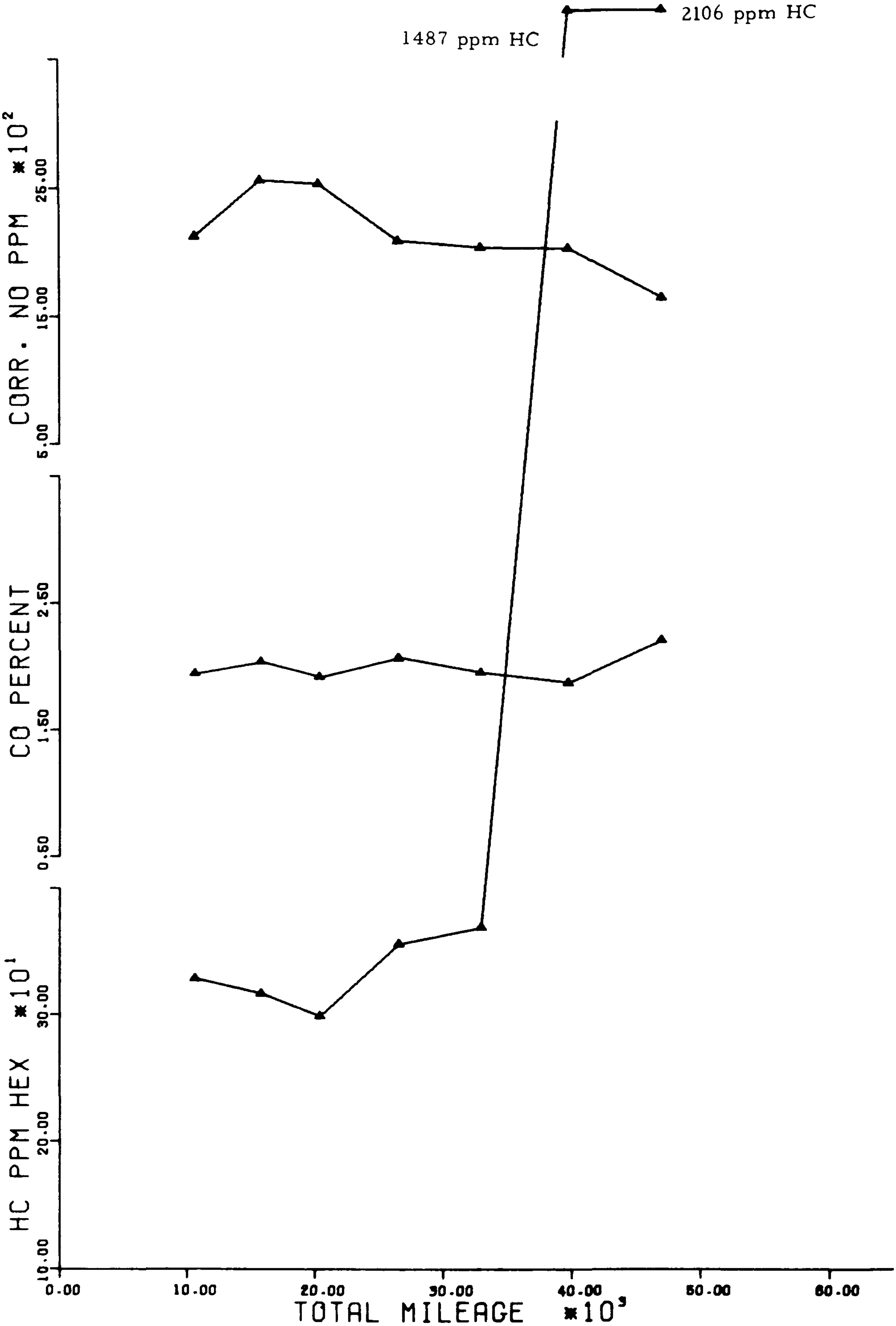



FIGURE F-65 UNIT 065 70 DODGE 24000 LB GVW FRGHT 318 CID V8 ENGINE

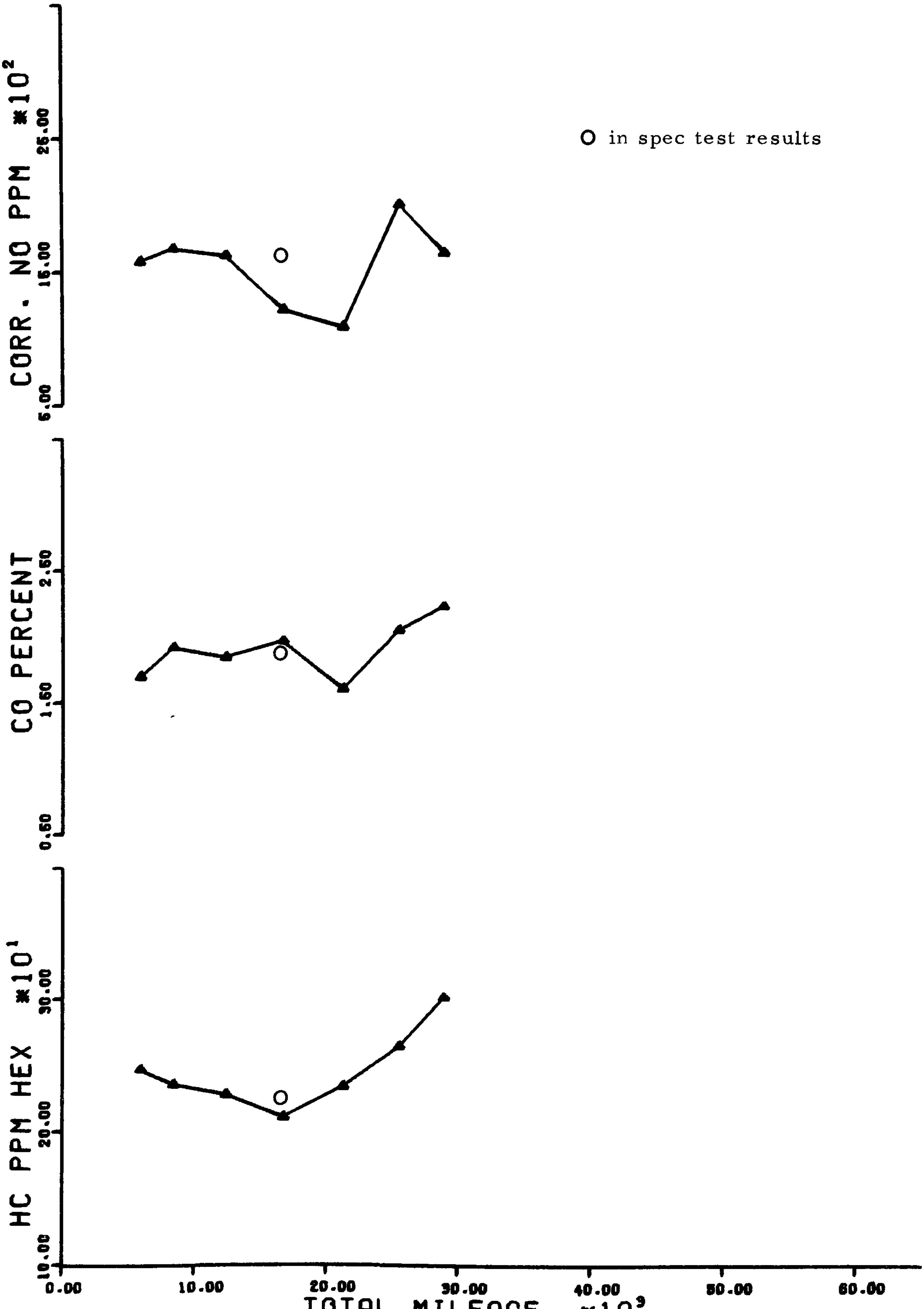



FIGURE E-66 UNIT 066 70 DODGE 7500 LB GVW METER 318 CID V8 ENGINE

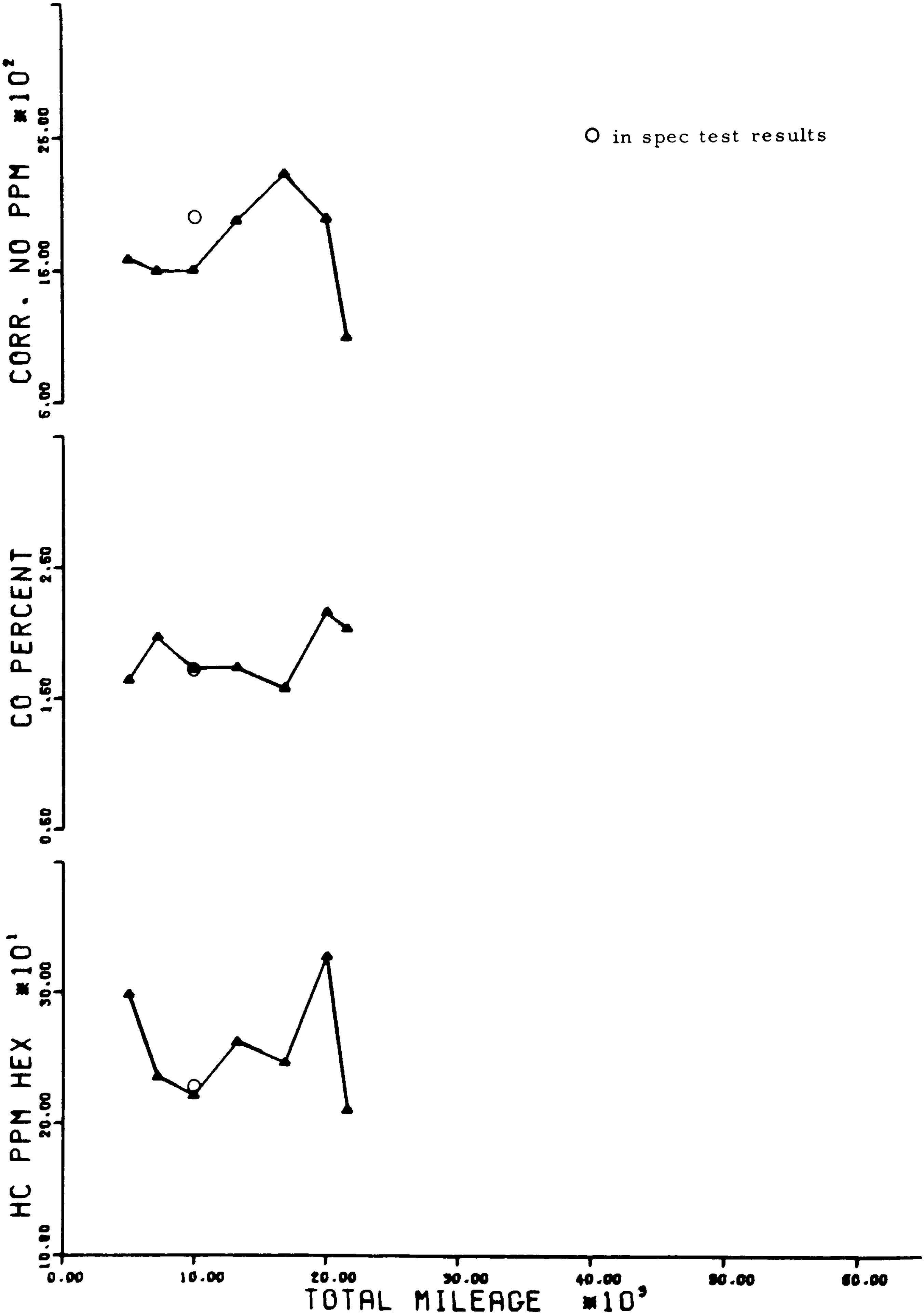



FIGURE E-67 UNIT 067 70 DODGE 7500 LB GVW SERVICE 318 CID V8 ENGINE

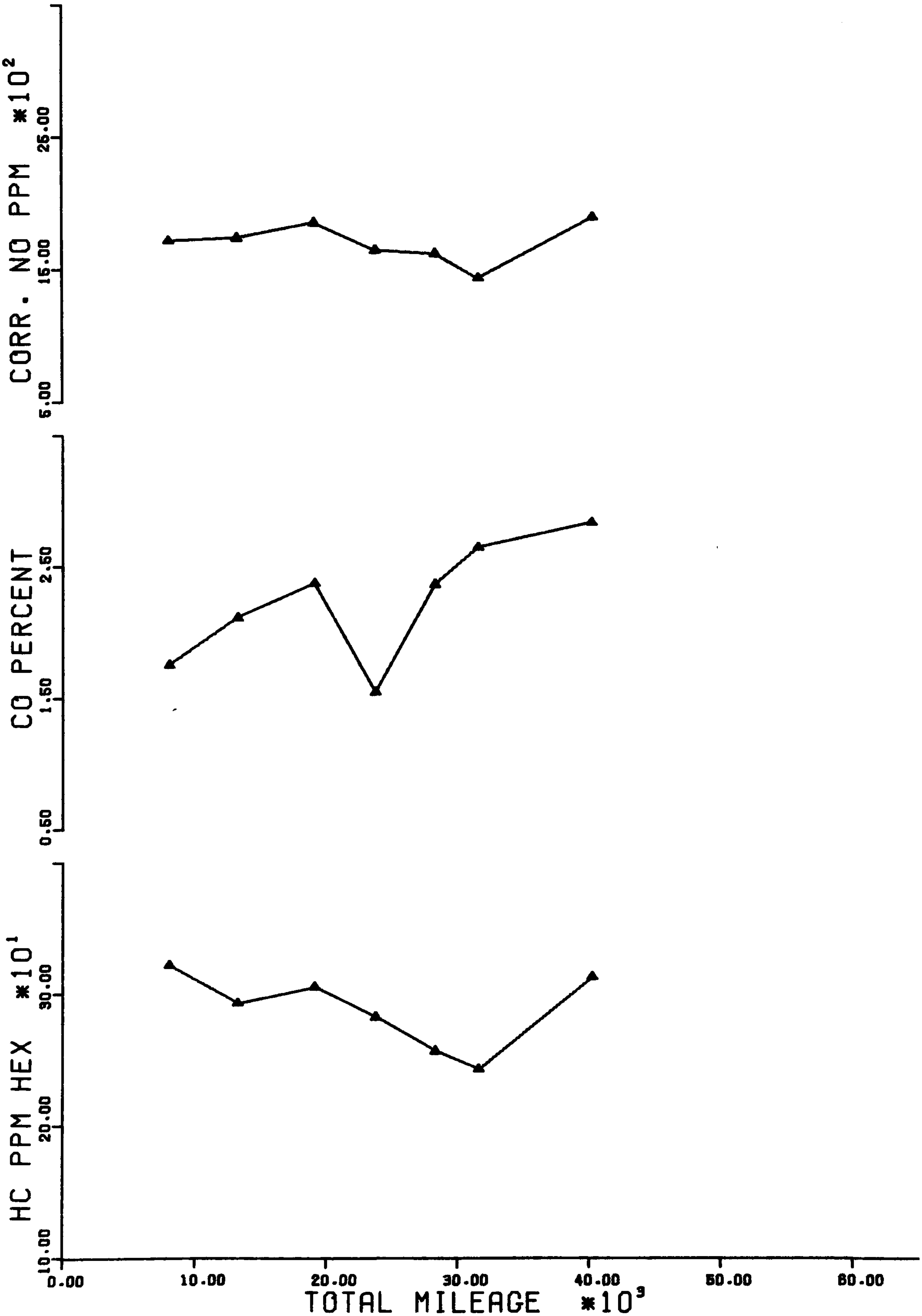



FIGURE E-68 UNIT 068 70 FORD 25500 LB GVW DUMP 361 CID V8 ENGINE

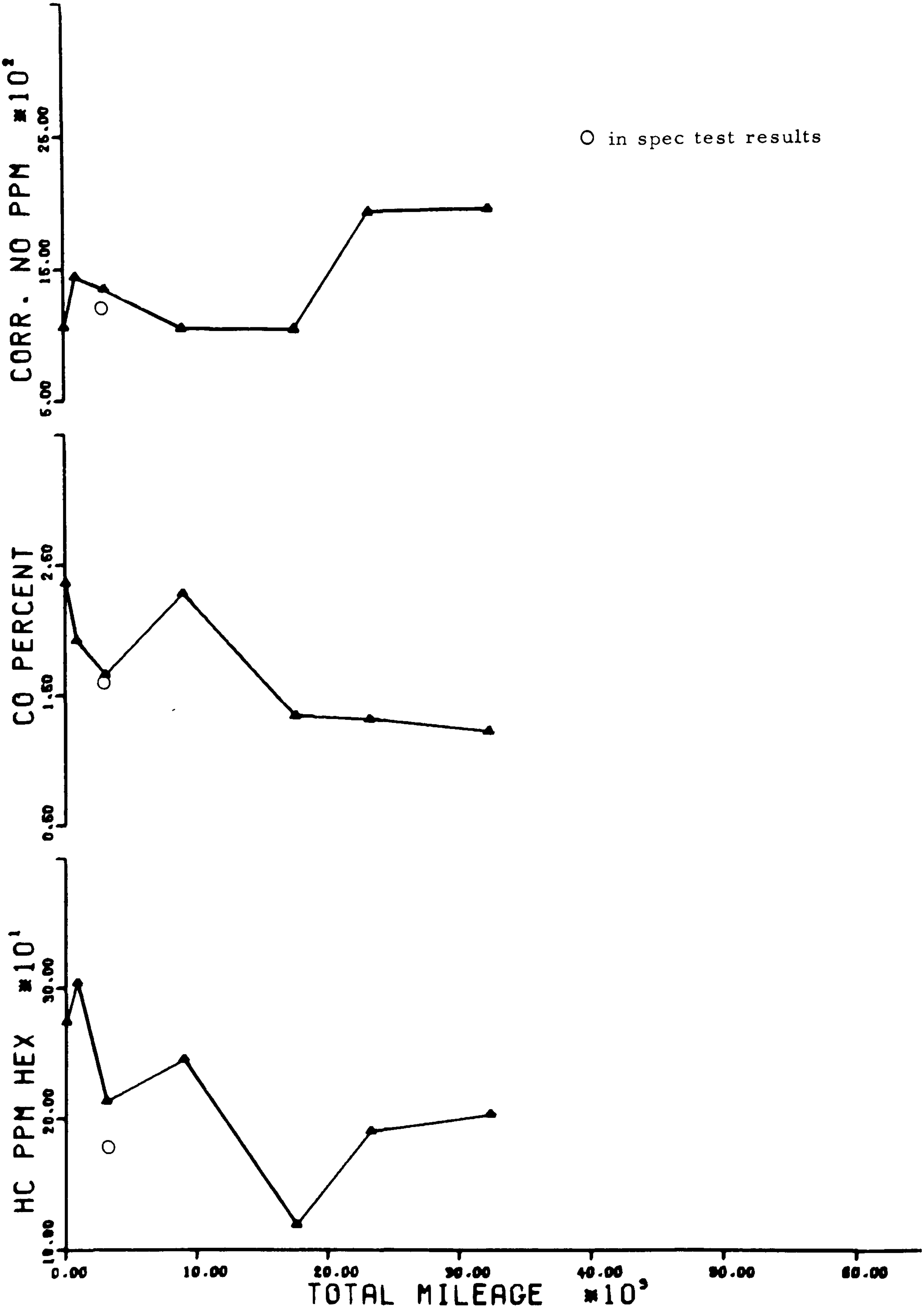



FIGURE E-69 UNIT 069 70 IHC 25500 LB GVW LINE 392 CID V8 ENGINE

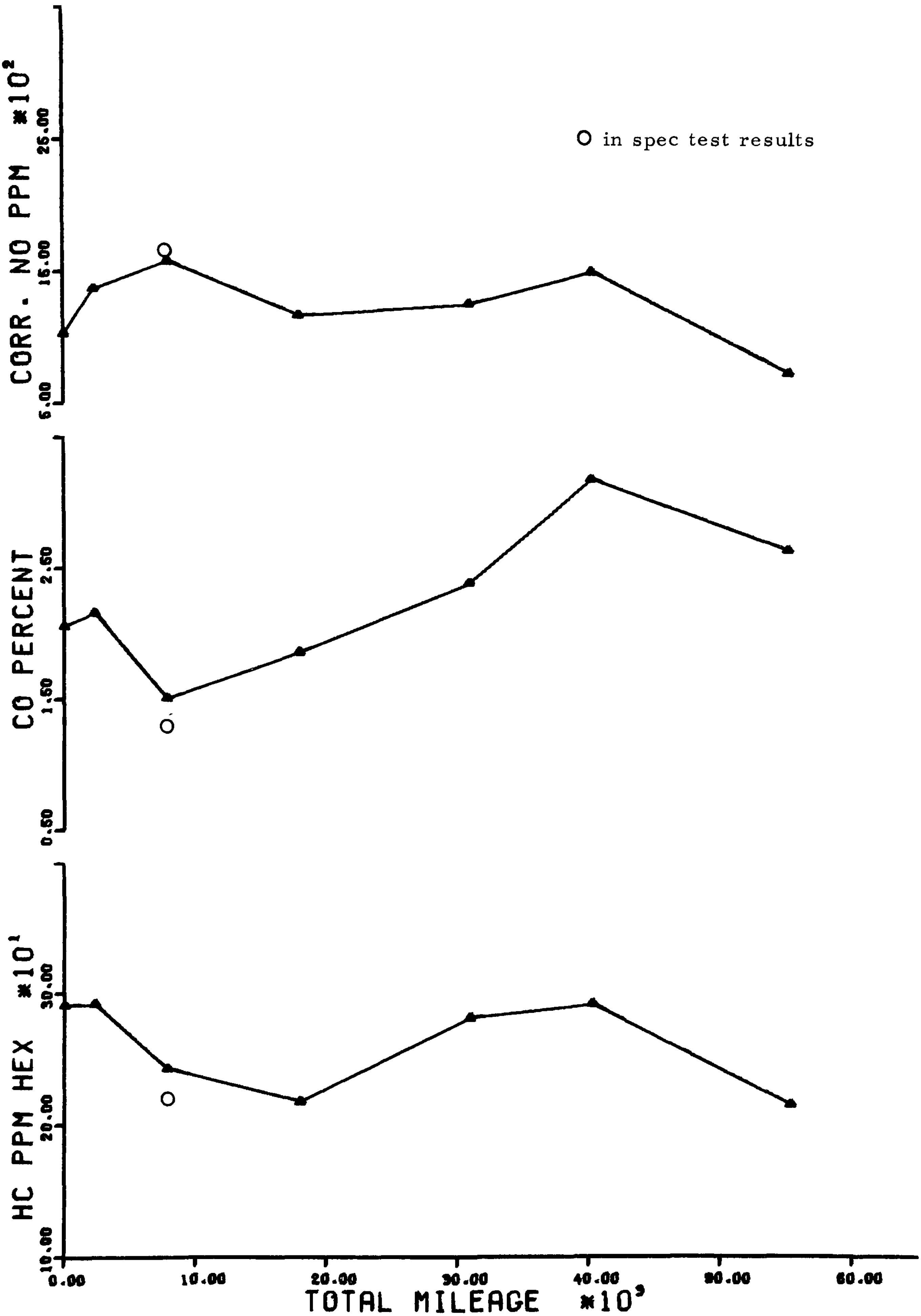



FIGURE E-70 UNIT 070 70 IHC 25500 LB GVW LINE 392 CID V8 ENGINE

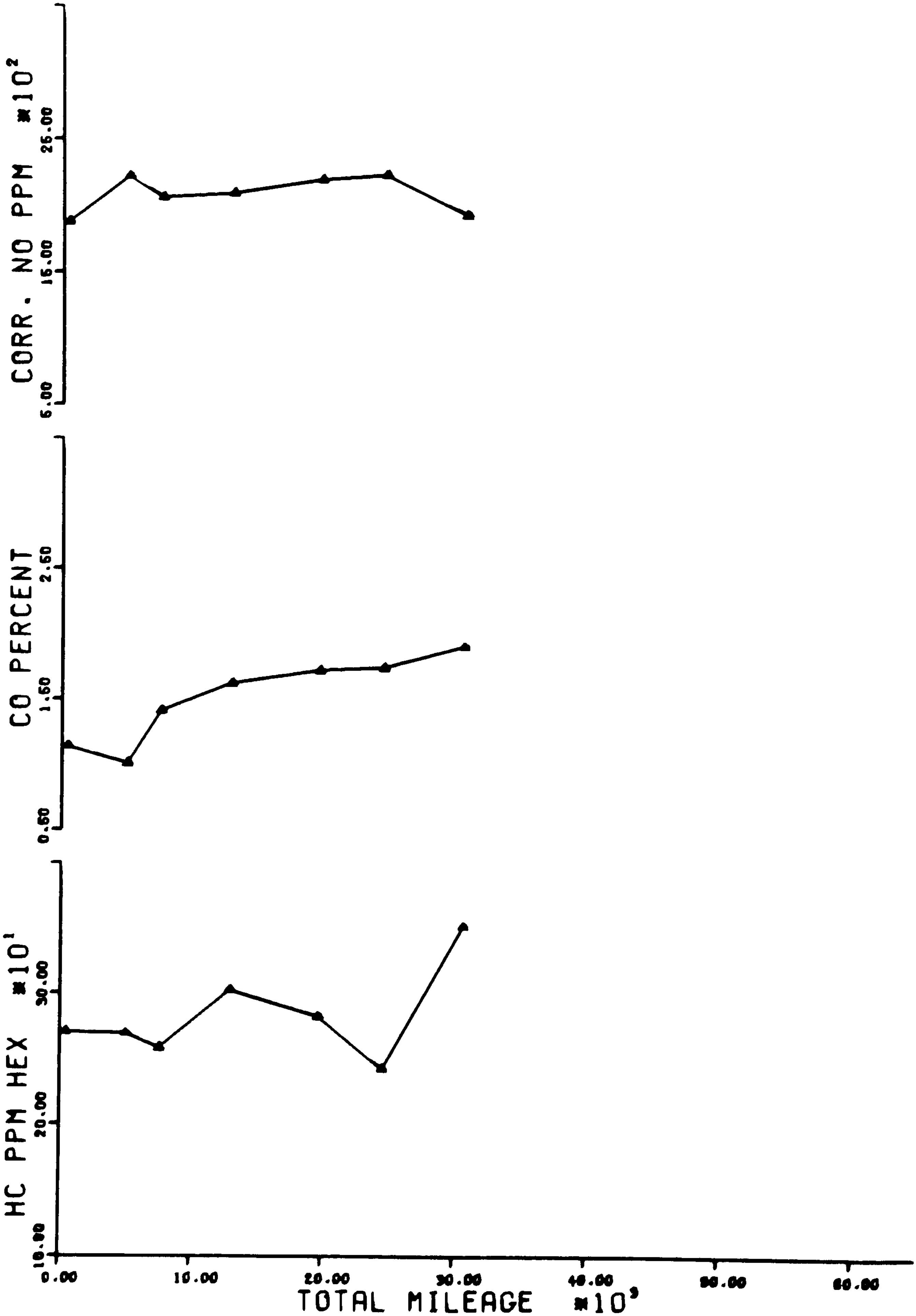



FIGURE E-71 UNIT 071 71 IHC 25000 LB GVW DIGGER 345 CID V8 ENGINE

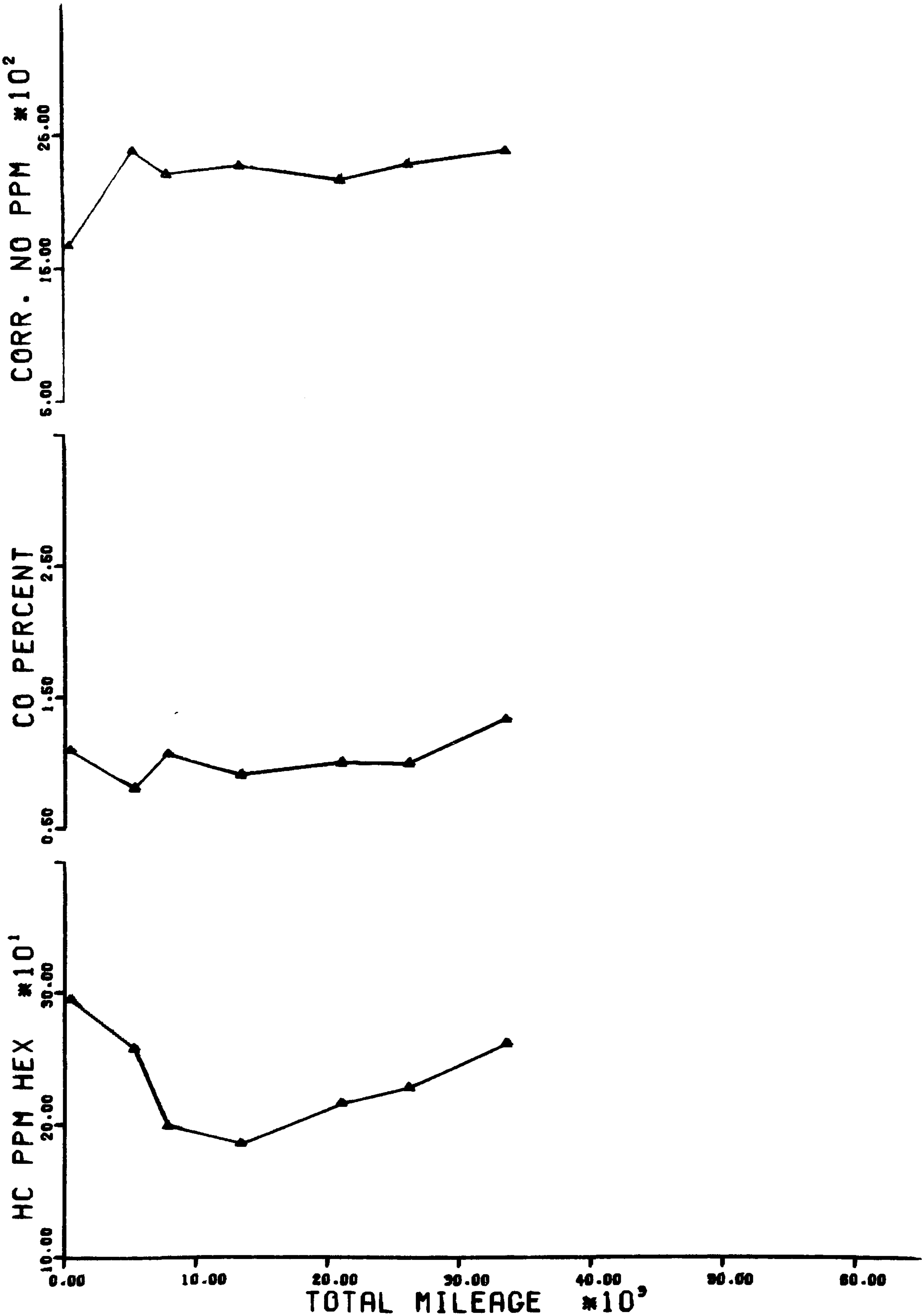



FIGURE E-72 UNIT 072 71 IHC 25000 LB GVW DIGGER 345 CID V8 ENGINE

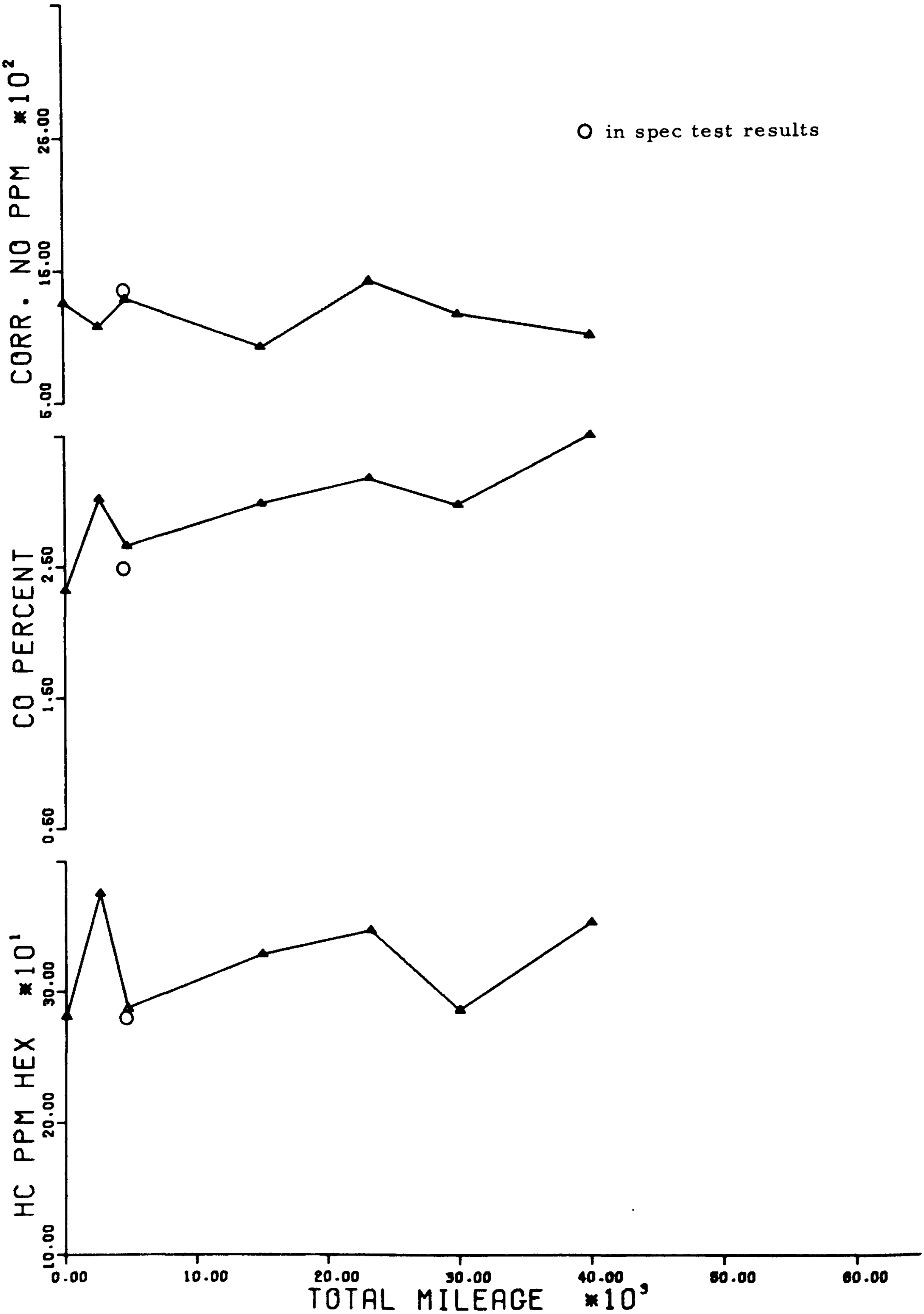



FIGURE E-73 UNIT 073 70 IHC 25500 LB GVW LINE 392 CID V8 ENGINE

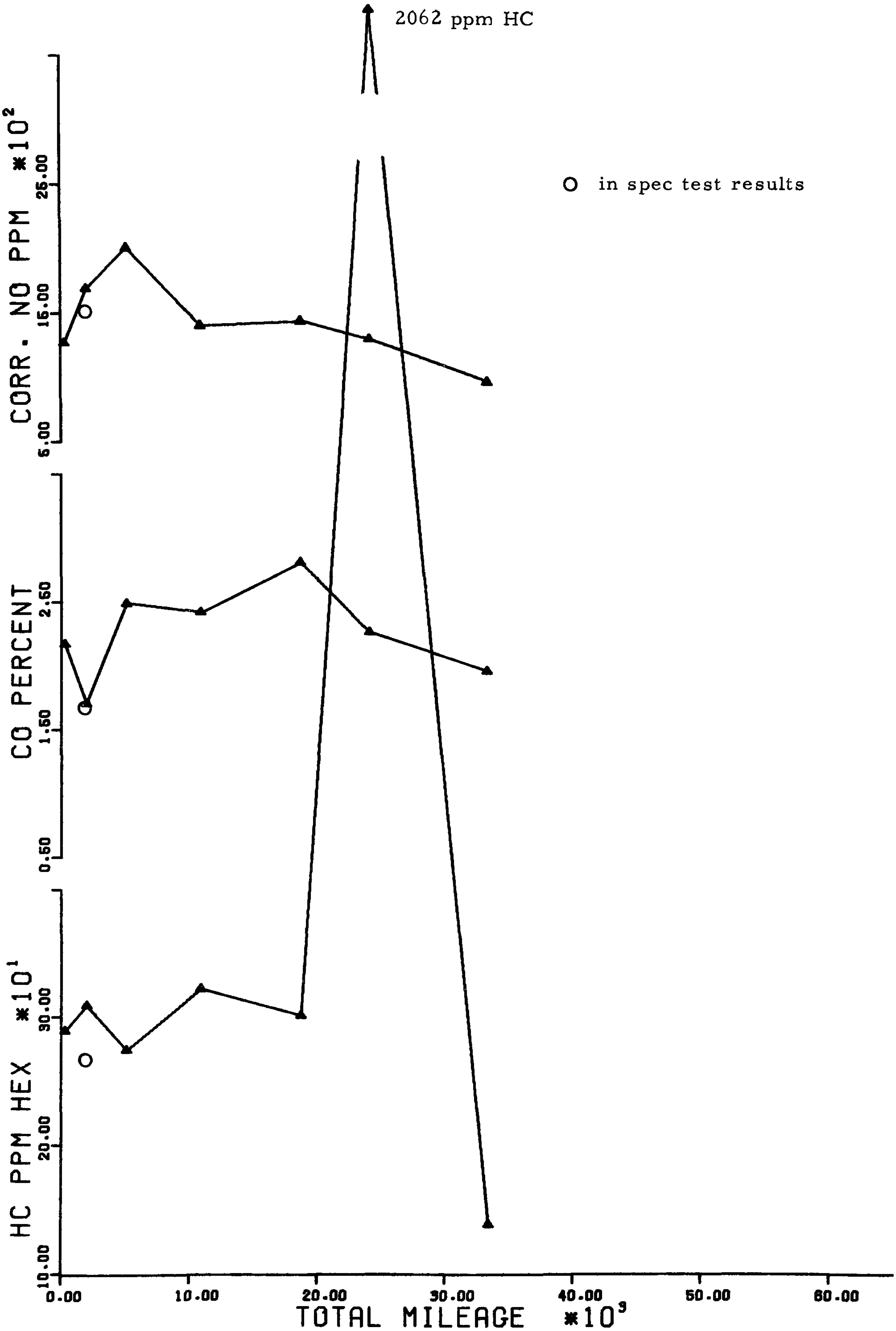



FIGURE E-74 UNIT 074 70 IHC 25500 LB GVW LINE 392 CID V8 ENGINE

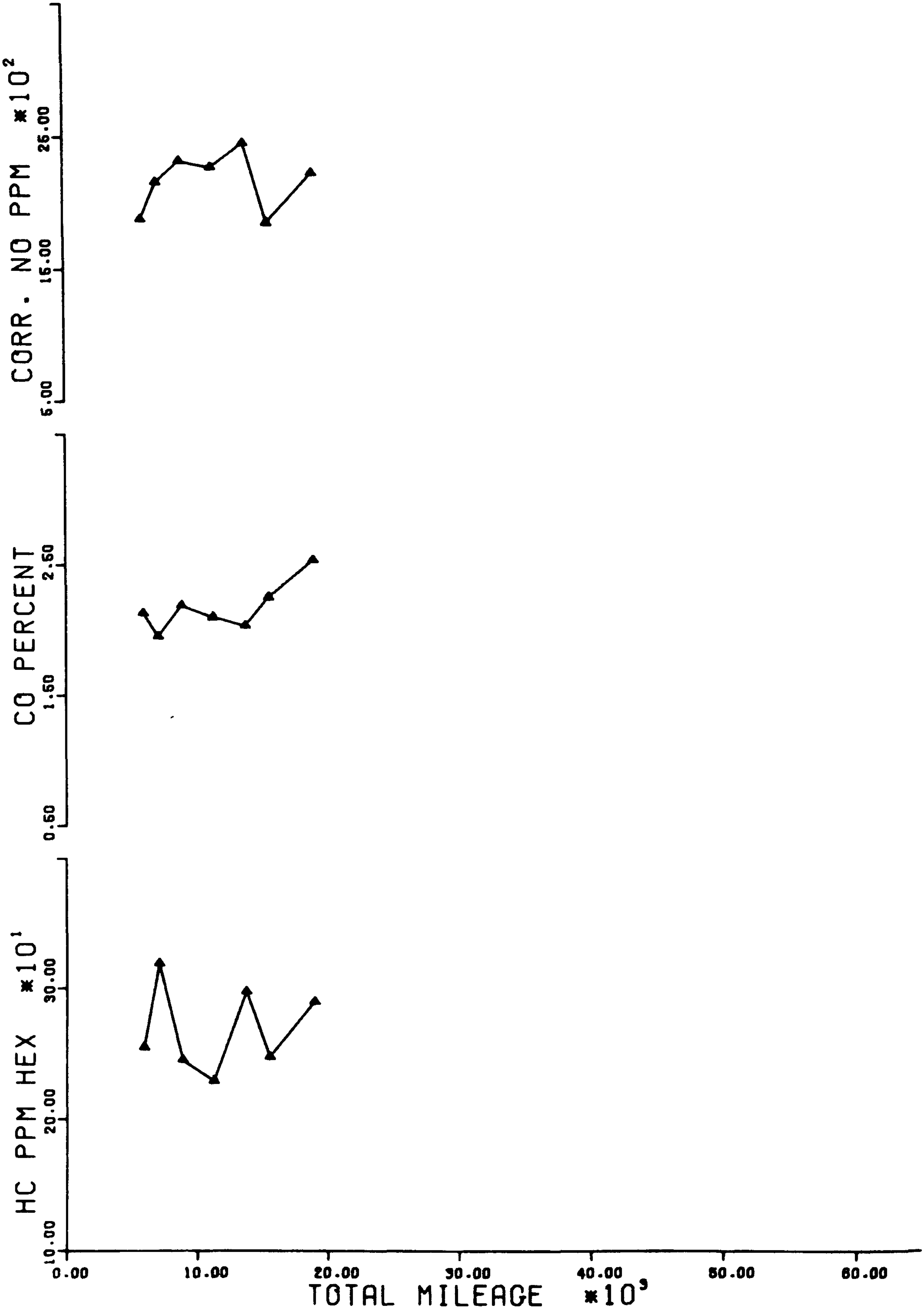



FIGURE E-75 UNIT 075 70 DODGE 7500 LB GVW PICKUP 225 CID 6 ENGINE

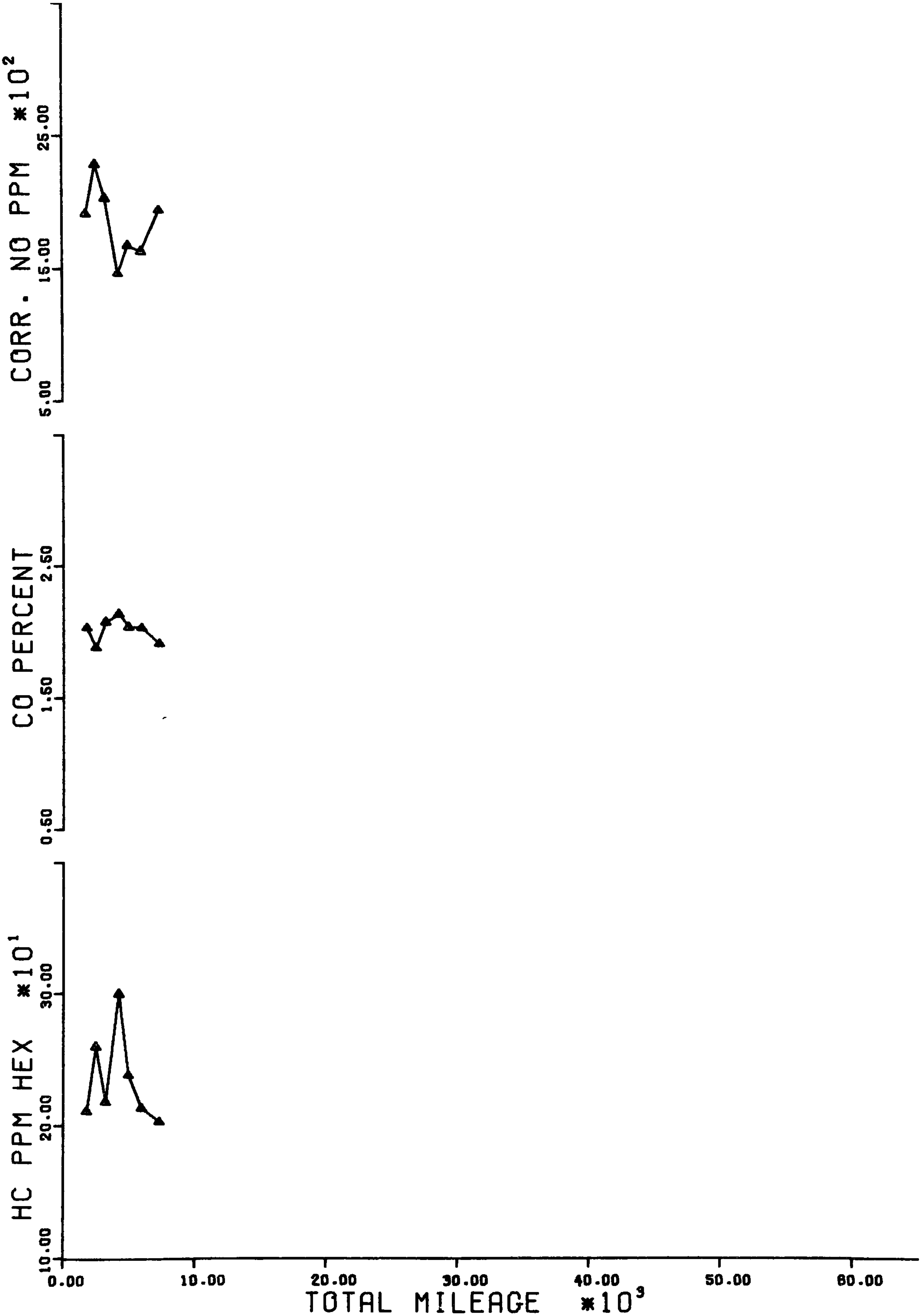



FIGURE E-76 UNIT 076 70 DODGE 7500 LB GVW PICKUP 225 CID I6 ENGINE

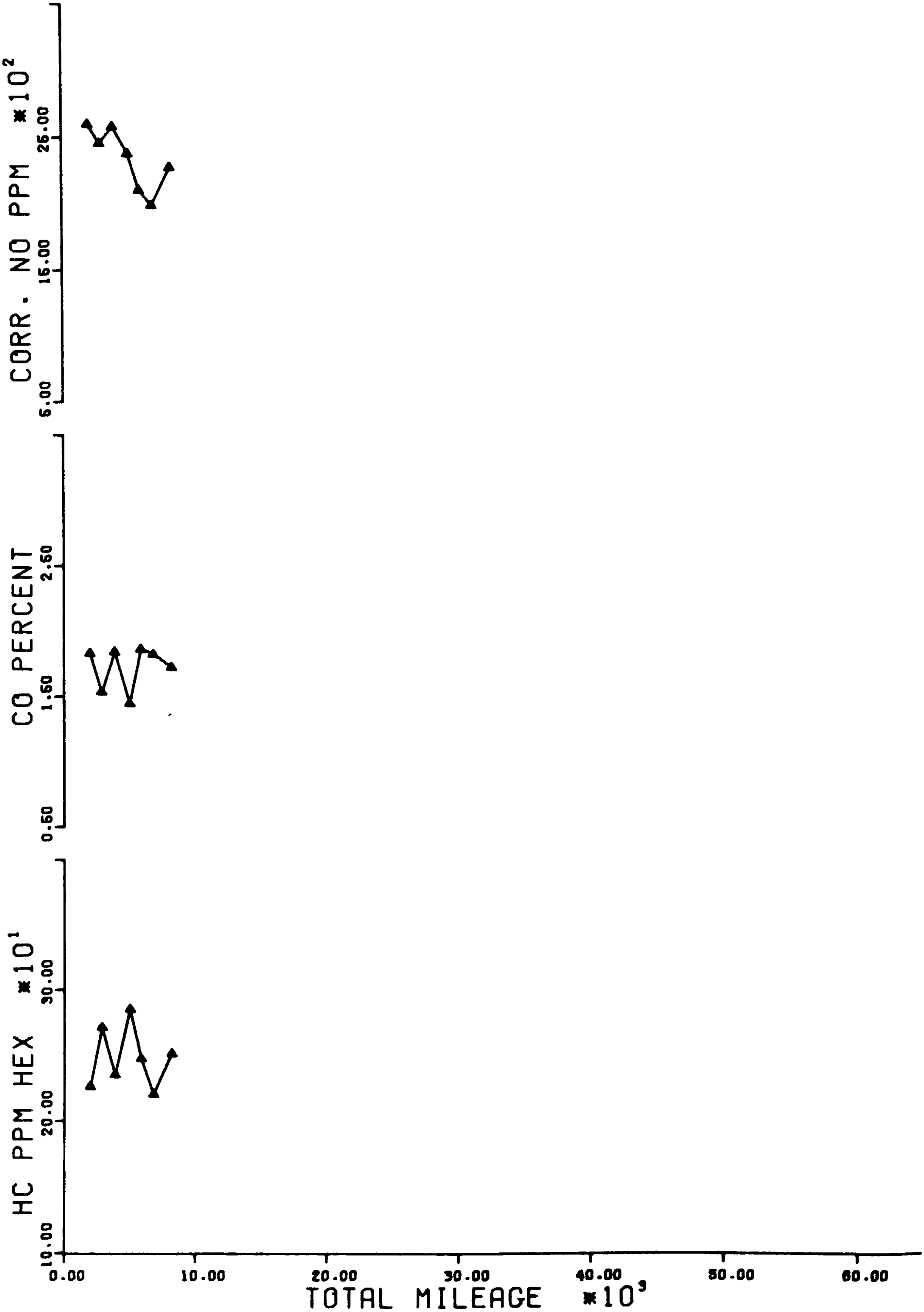



FIGURE E-77 UNIT 077 70 DODGE 7500 LB GVW PICKUP 225 CID I6 ENGINE

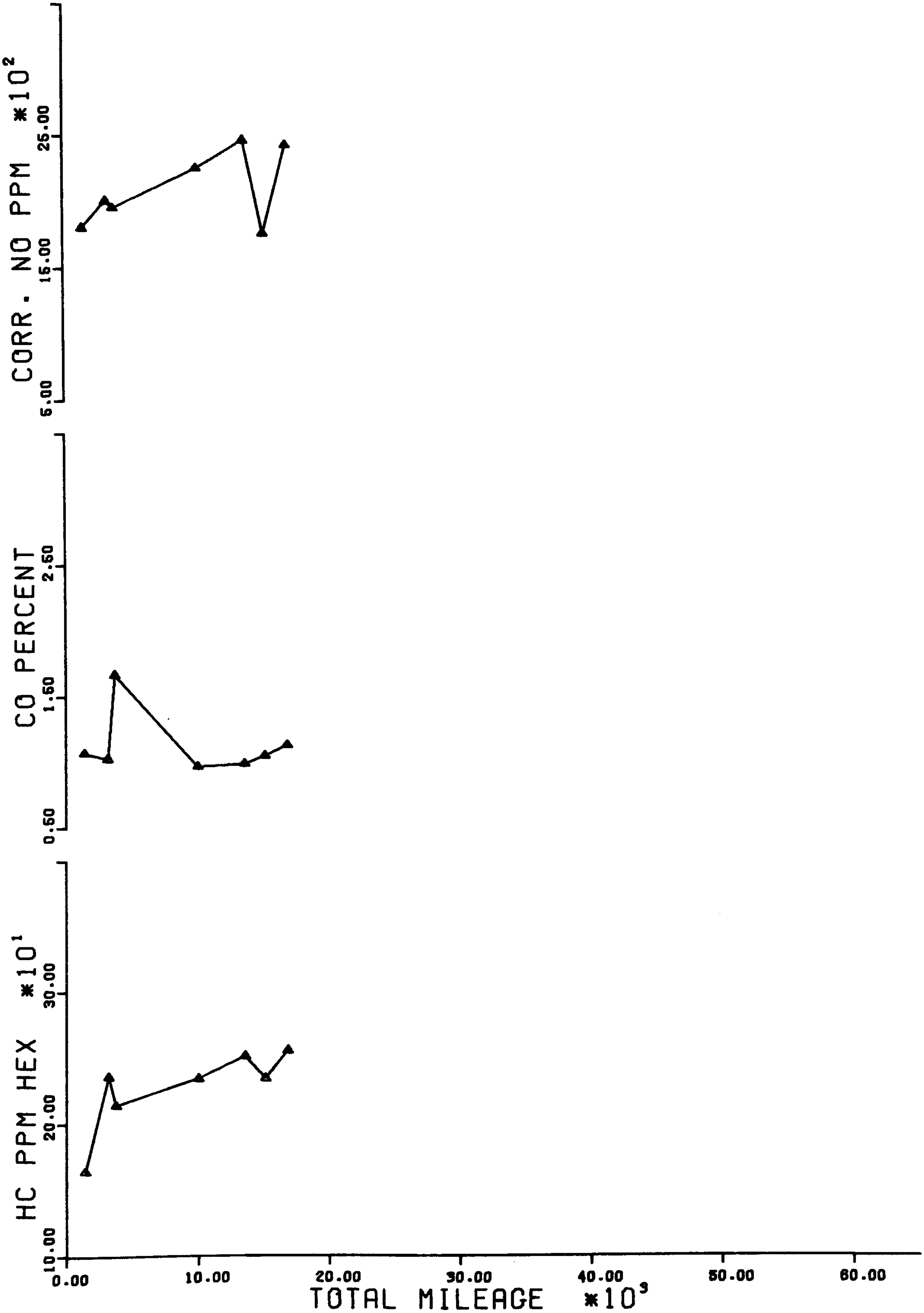



FIGURE E-78 UNIT 078 70 FORD 6800 LB GVW VAN 302 CID V8 ENGINE

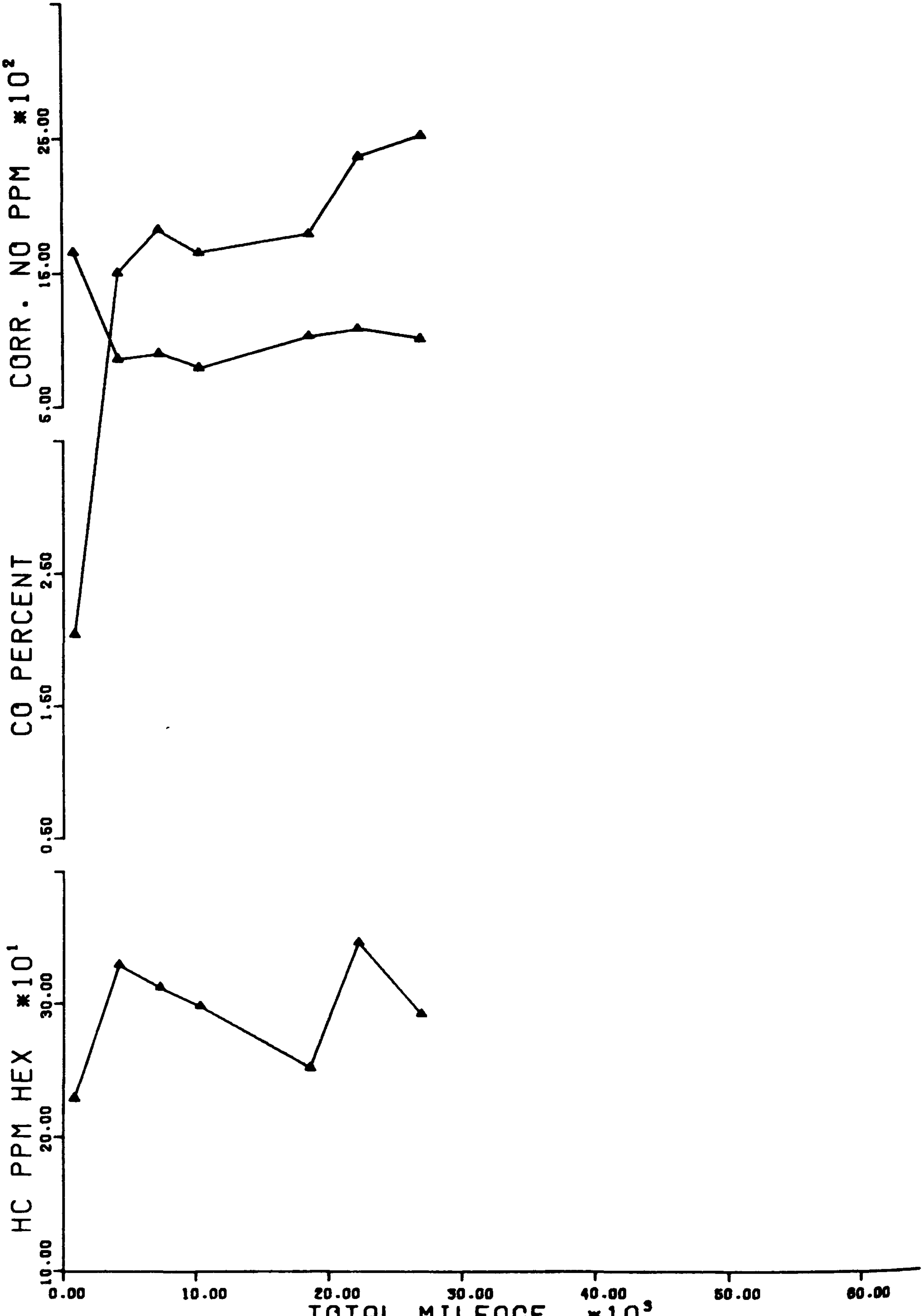



FIGURE E-79 UNIT 079 70 GMC 27000 LB GVW BUS 401 CID V6 ENGINE

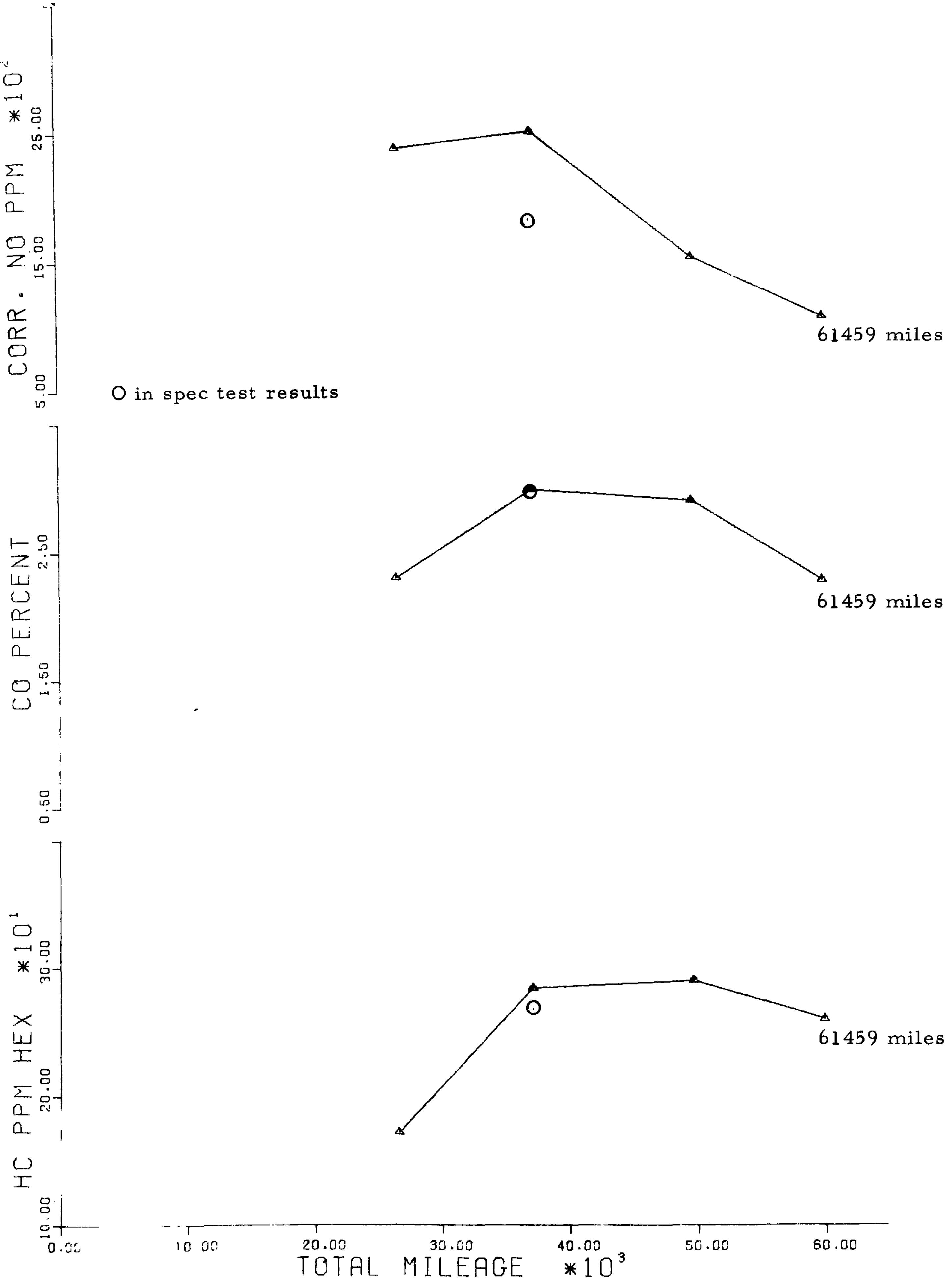



FIGURE E-80 UNIT 080 70 CHEV 6600 LB GVW DELVY 307 CID V8 ENGINE

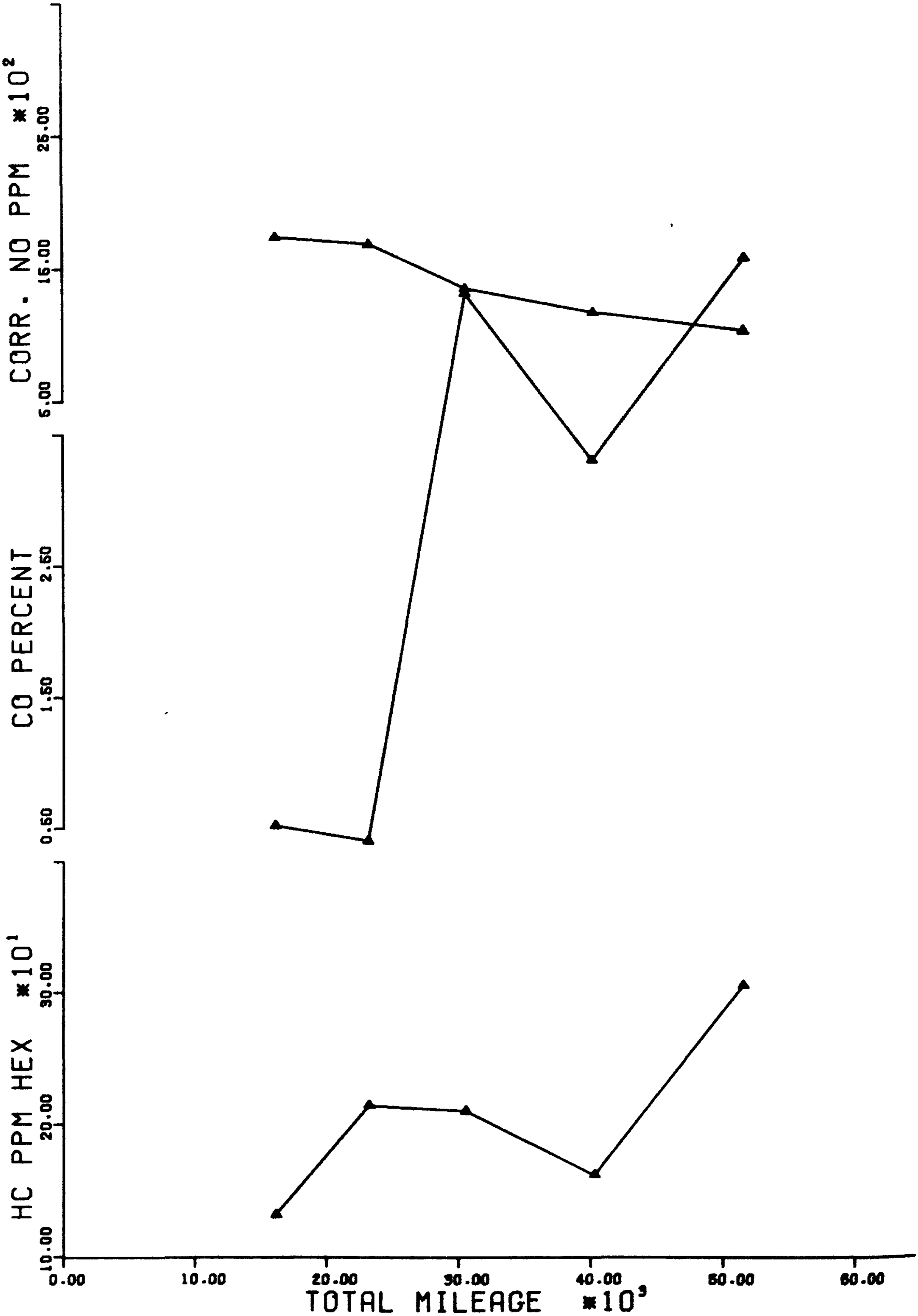



FIGURE E-81 UNIT 081 70 FORD 21000 LB GVW FRGHT 300 CID I6 ENGINE

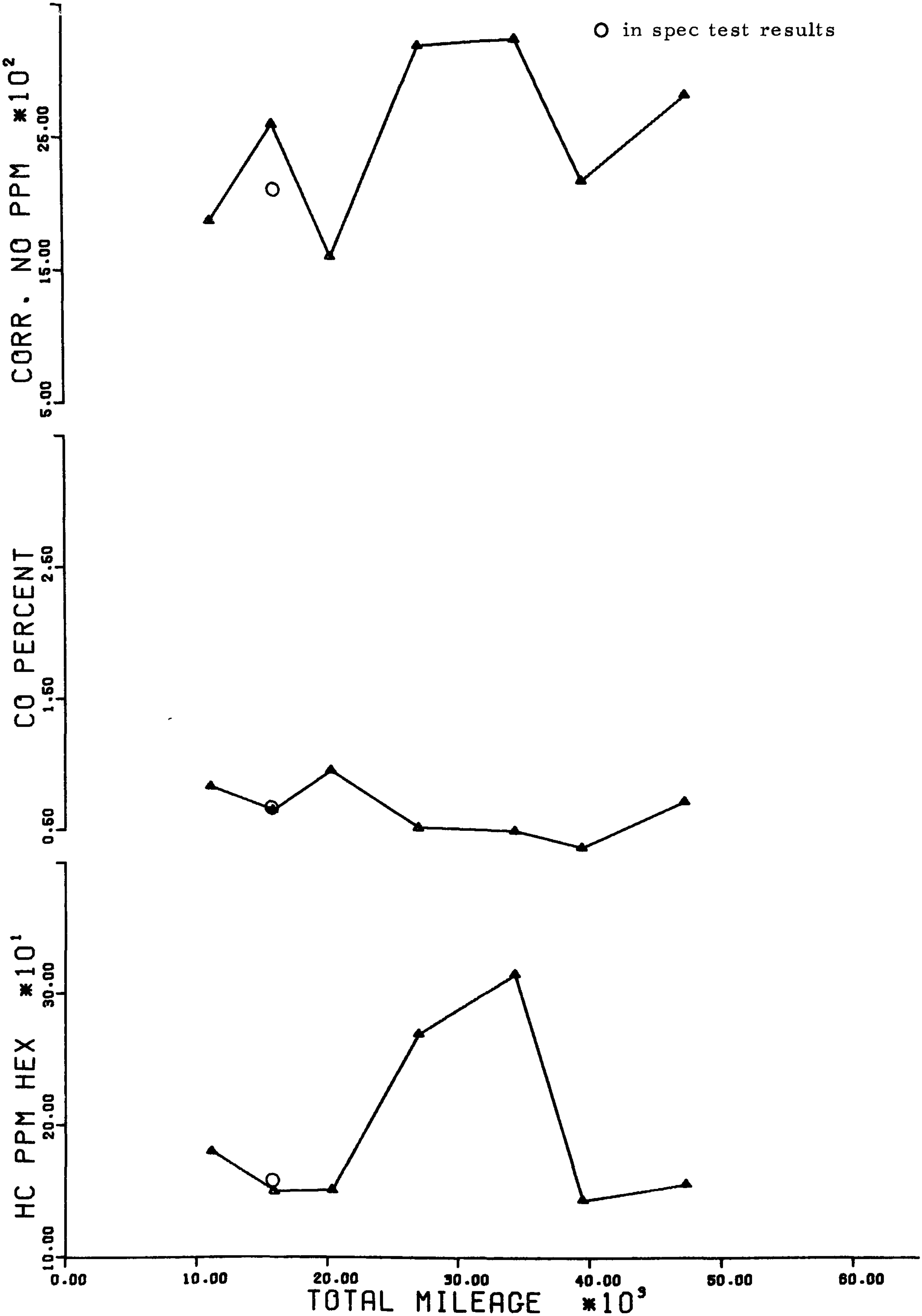



FIGURE E-82 UNIT 082 70 FORD 21000 LB GVW FRGHT 300 CID I6 ENGINE

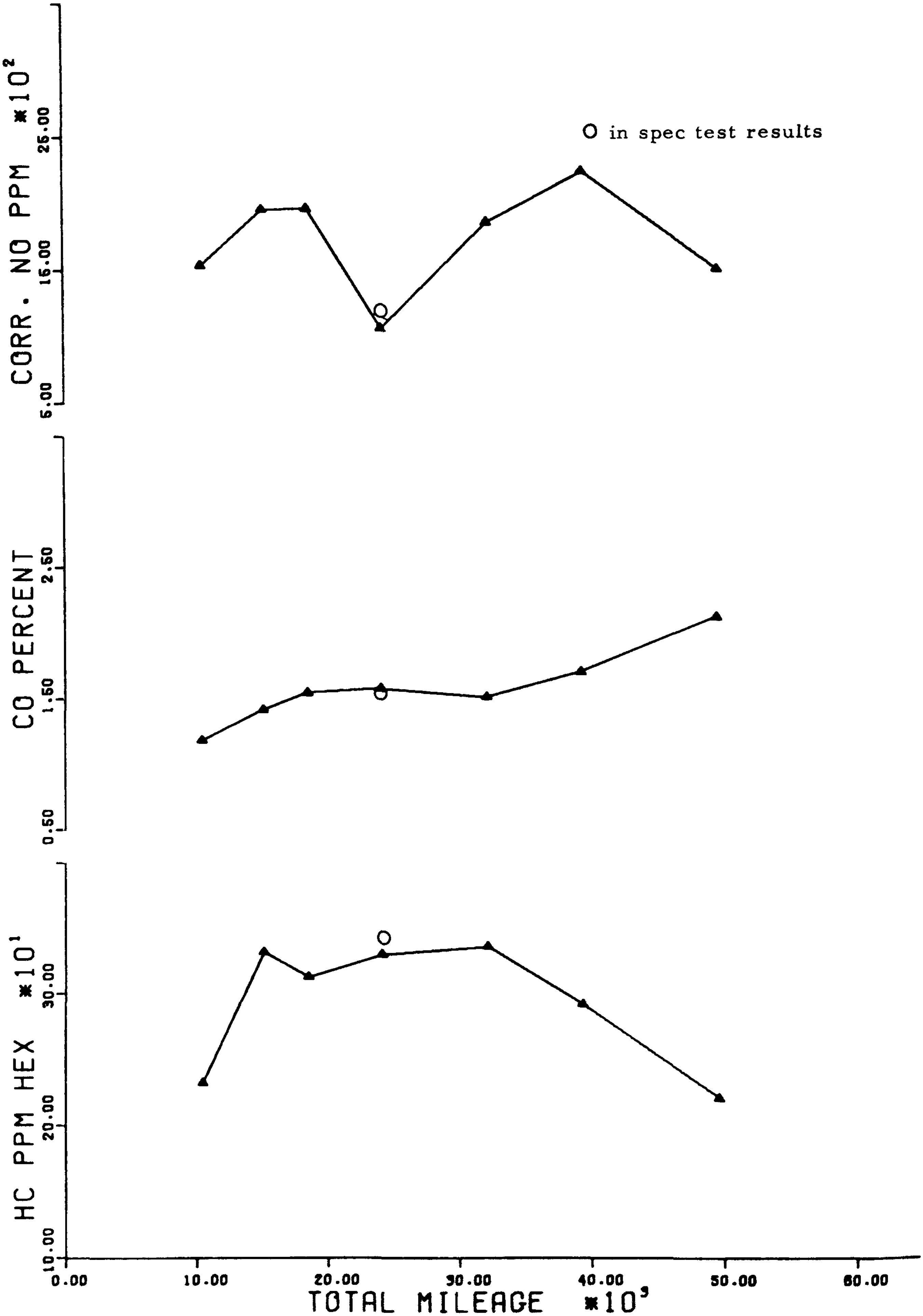



FIGURE E-83 UNIT 083 70 FORD 22000 LB GVW FRGHT 361 CID V8 ENGINE

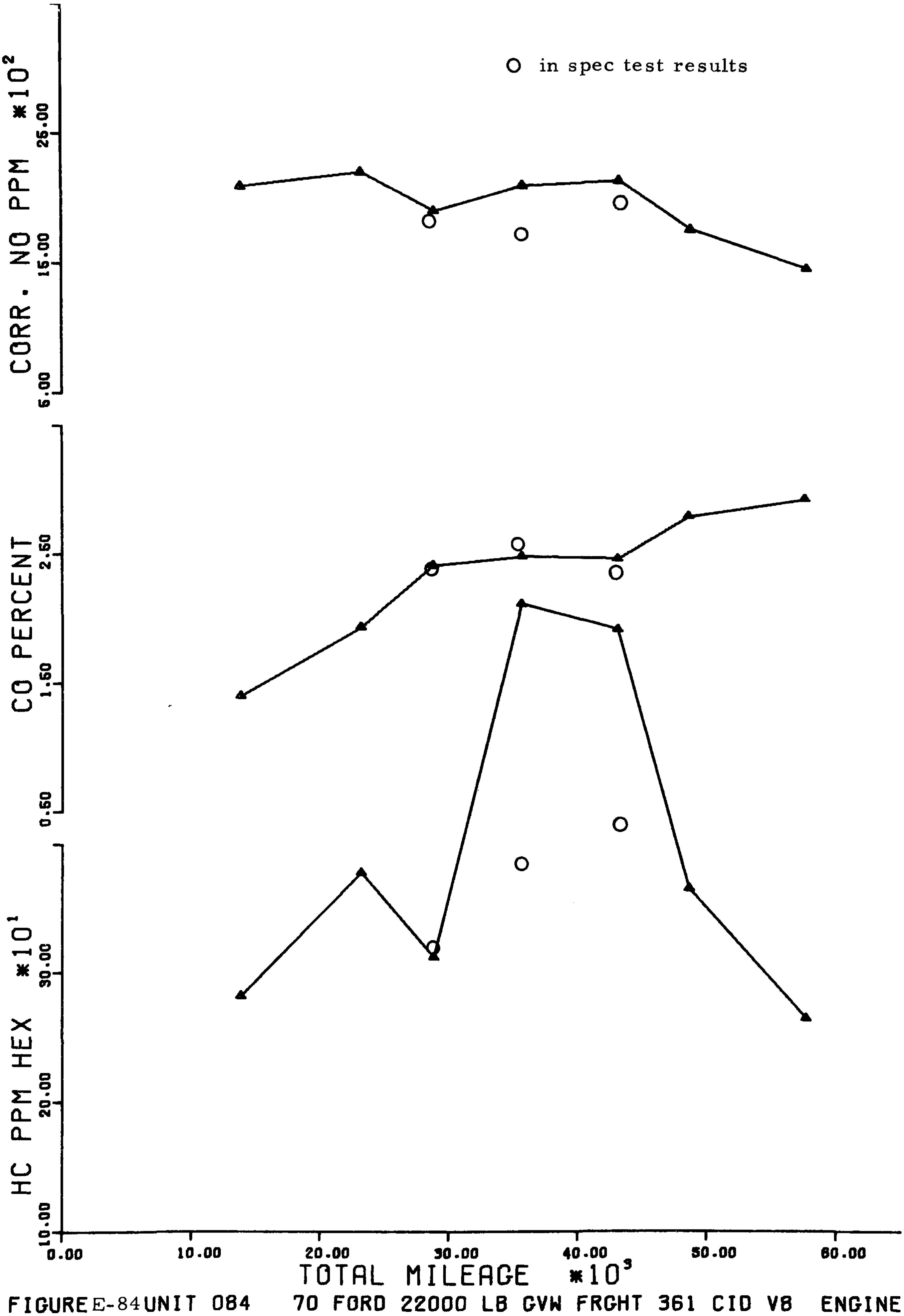



FIGURE E-84 UNIT 084 70 FORD 22000 LB GVW FRGHT 361 CID V8 ENGINE

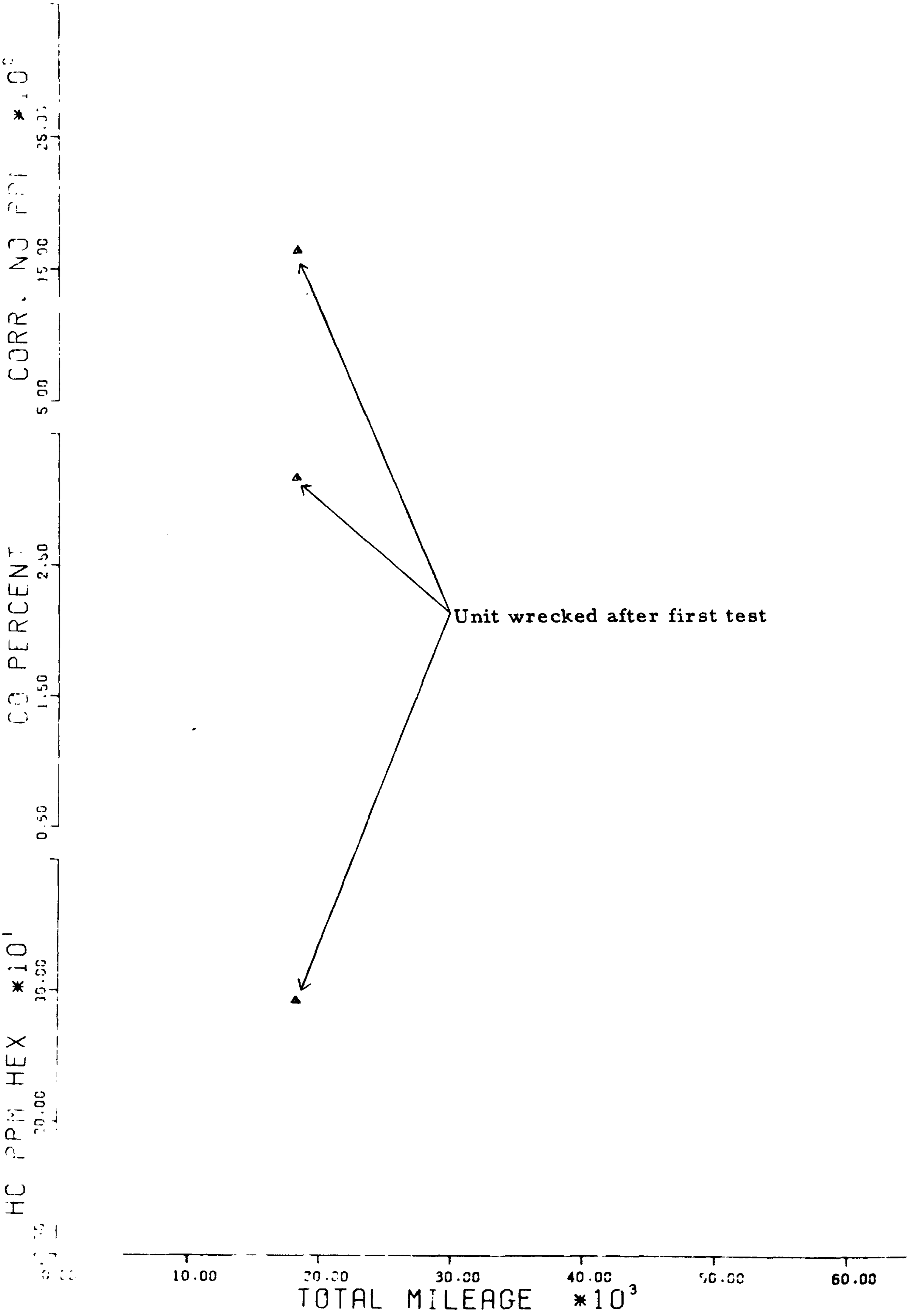



FIGURE E-85 UNIT 085 70 CHEV 7500 LB GVW SERVICE 307 CID V8 ENGINE

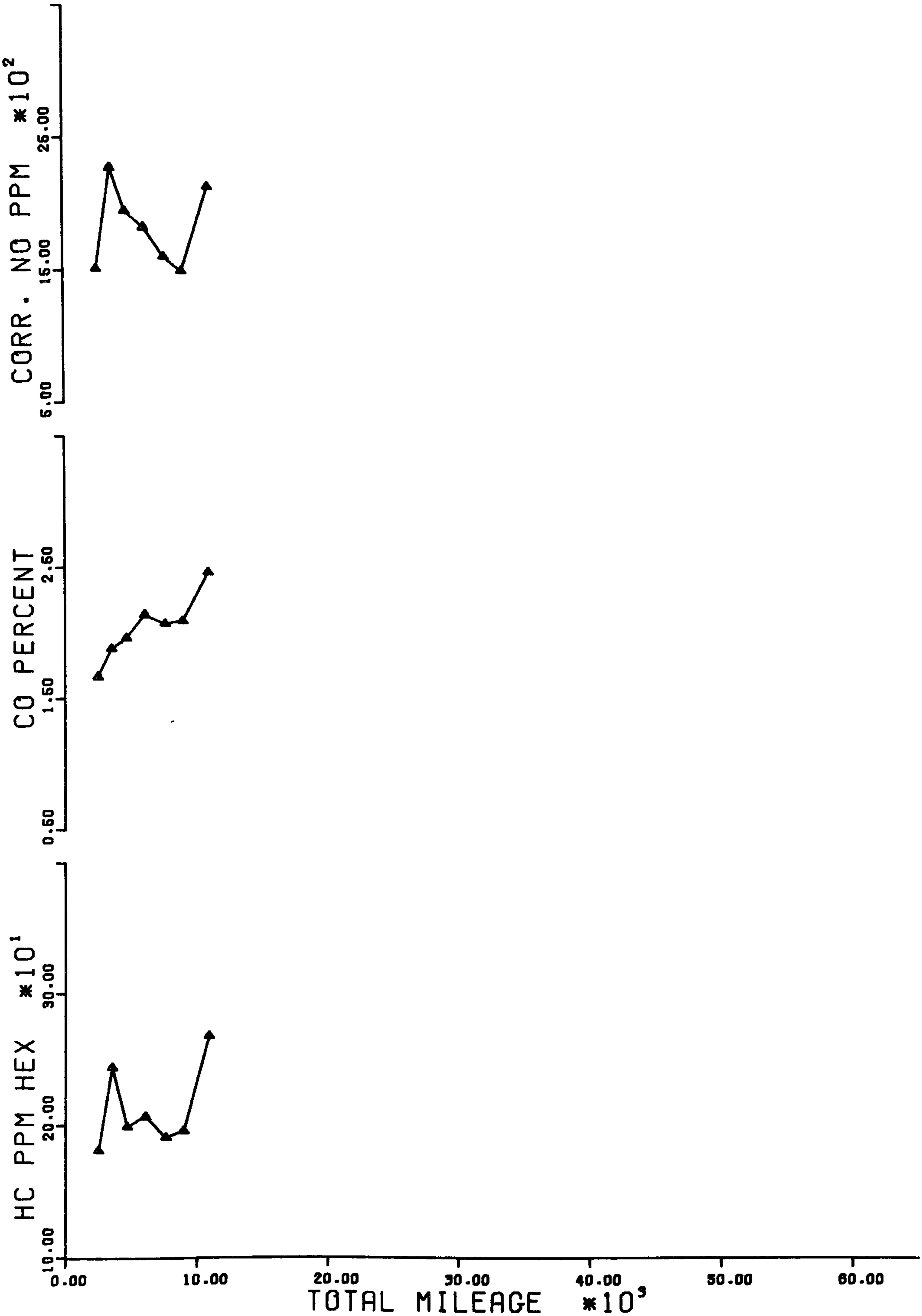



FIGURE E-86 UNIT 086 70 DODGE 10000 LB GVW LAUNDRY 225 CID I6 ENGINE

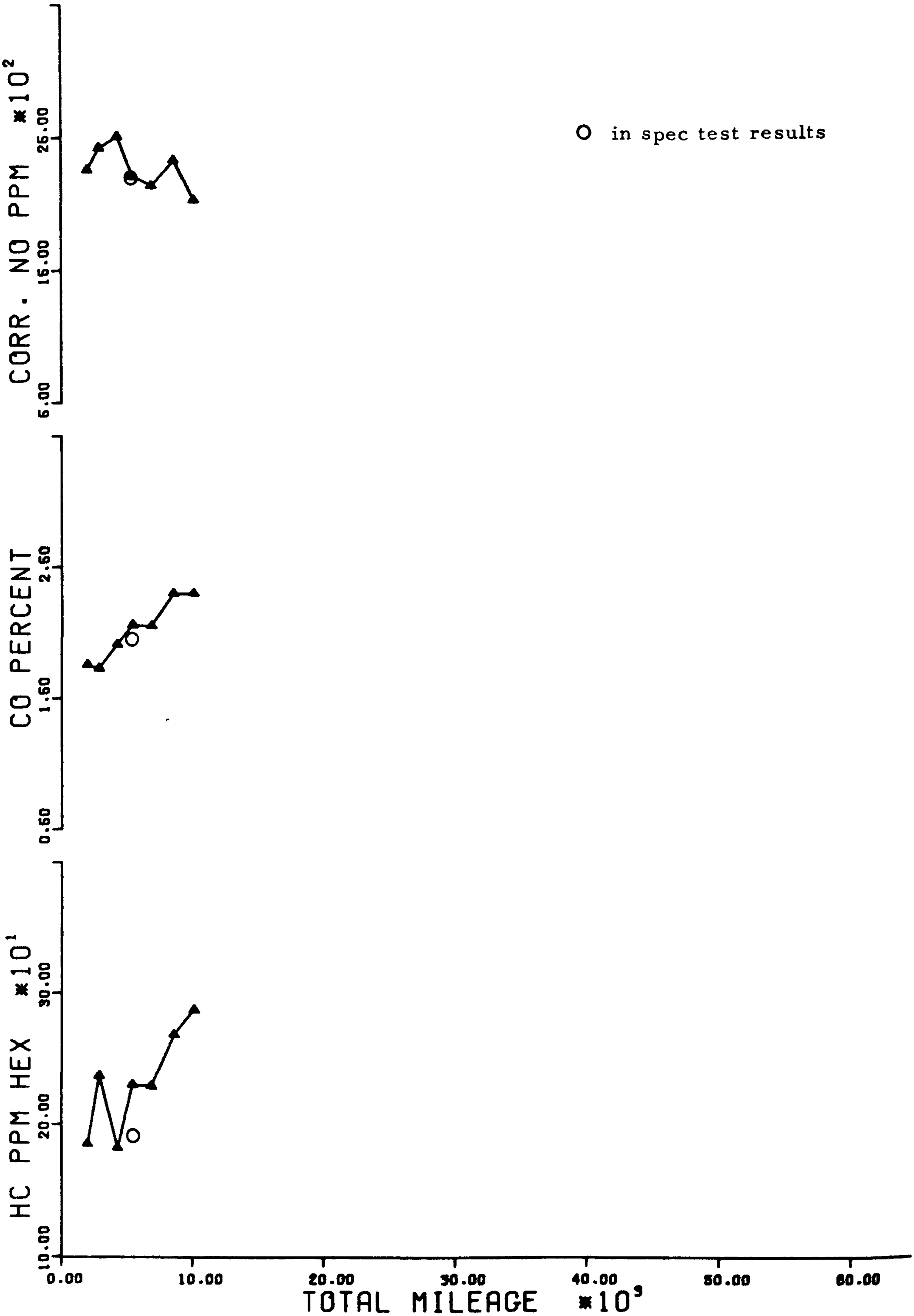
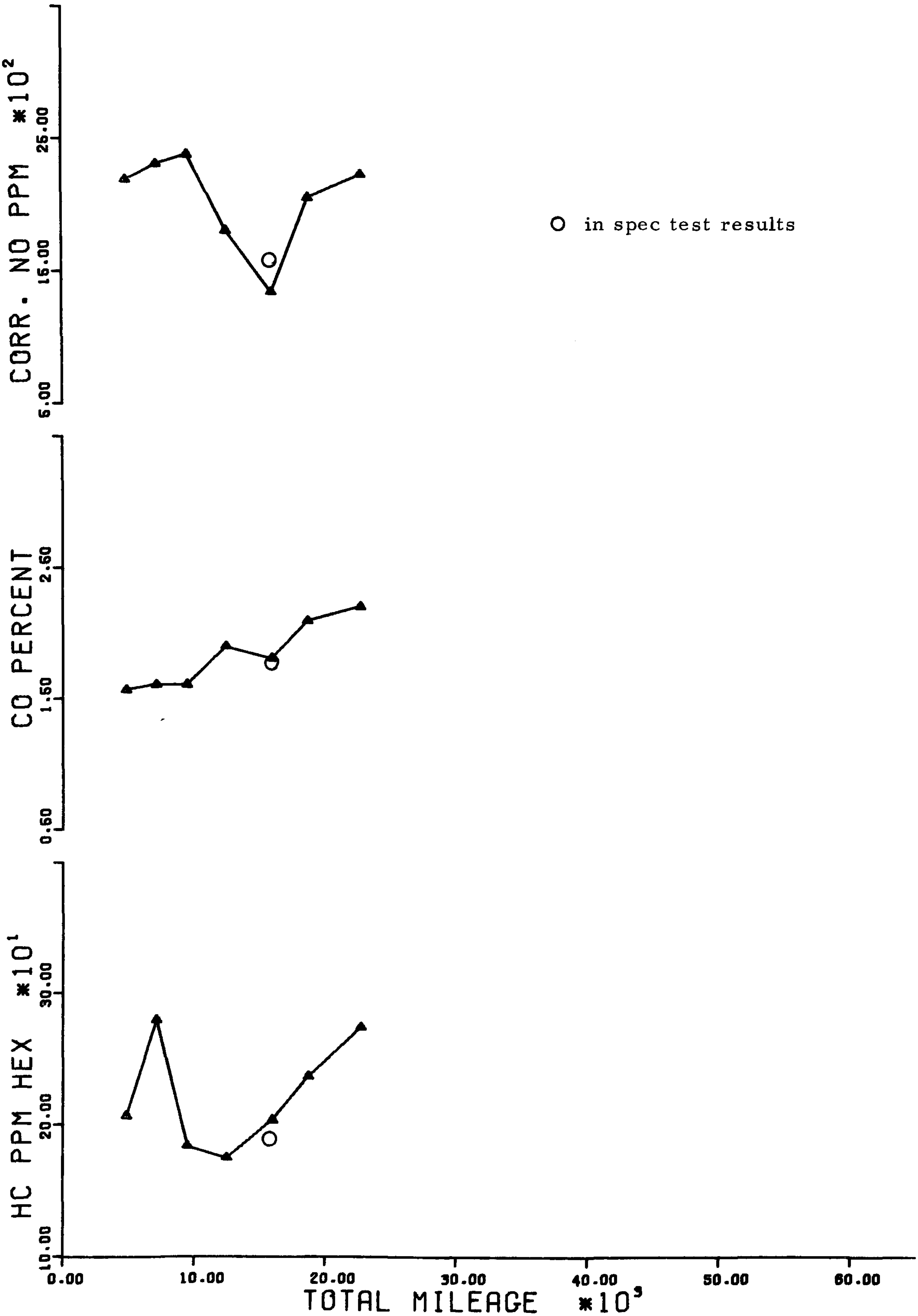


FIGURE E-87 UNIT 087 70 DODGE 10000 LB GVW GROUNDS 225 CID I6 ENGINE




FIGUREE-88 UNIT 088 70 DODGE 7500 LB GVW SERVICE 225 CID I6 ENGINE

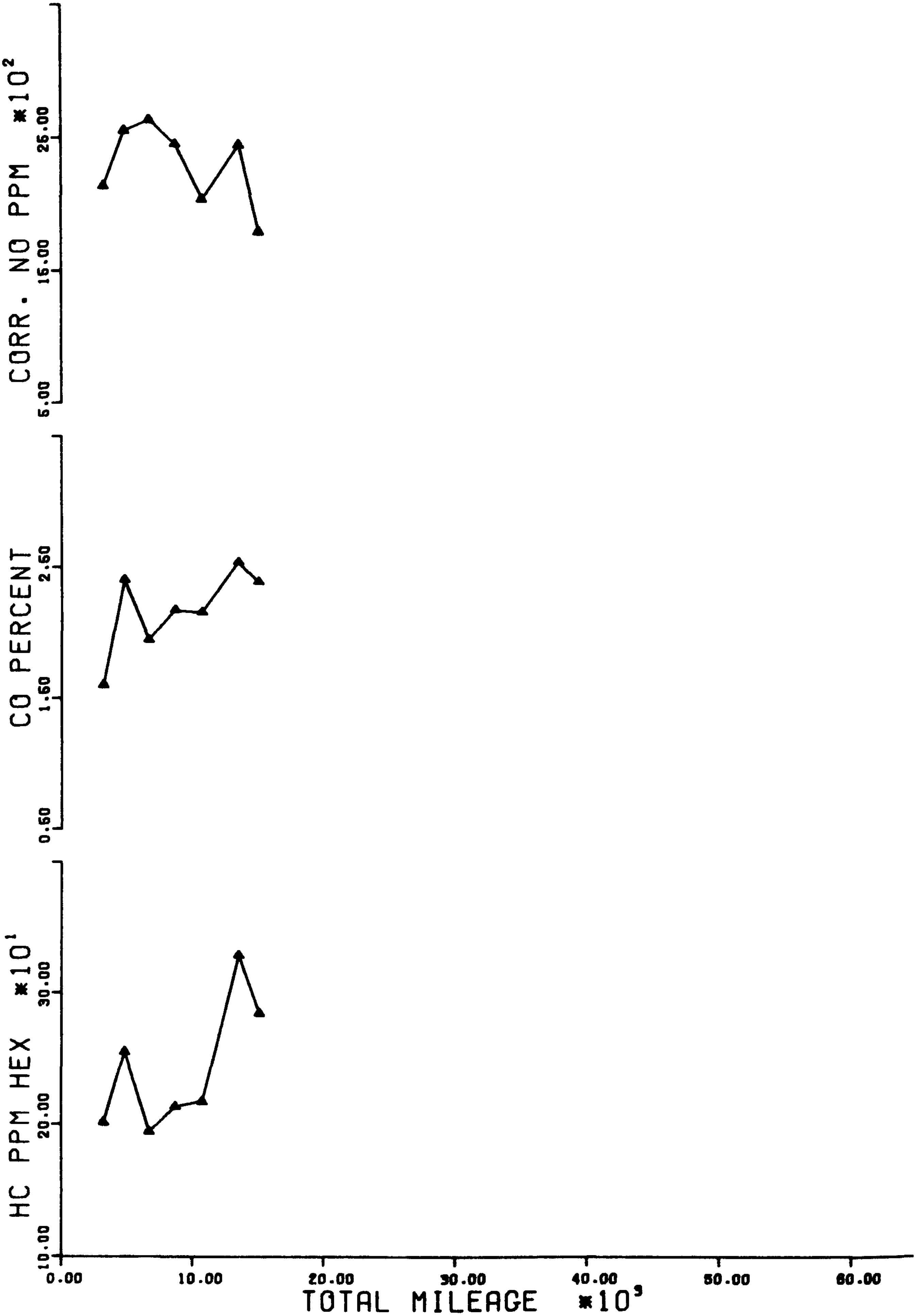



FIGURE E-89 UNIT 089 70 DODGE 10000 LB GVW MAINT. 225 CID I6 ENGINE

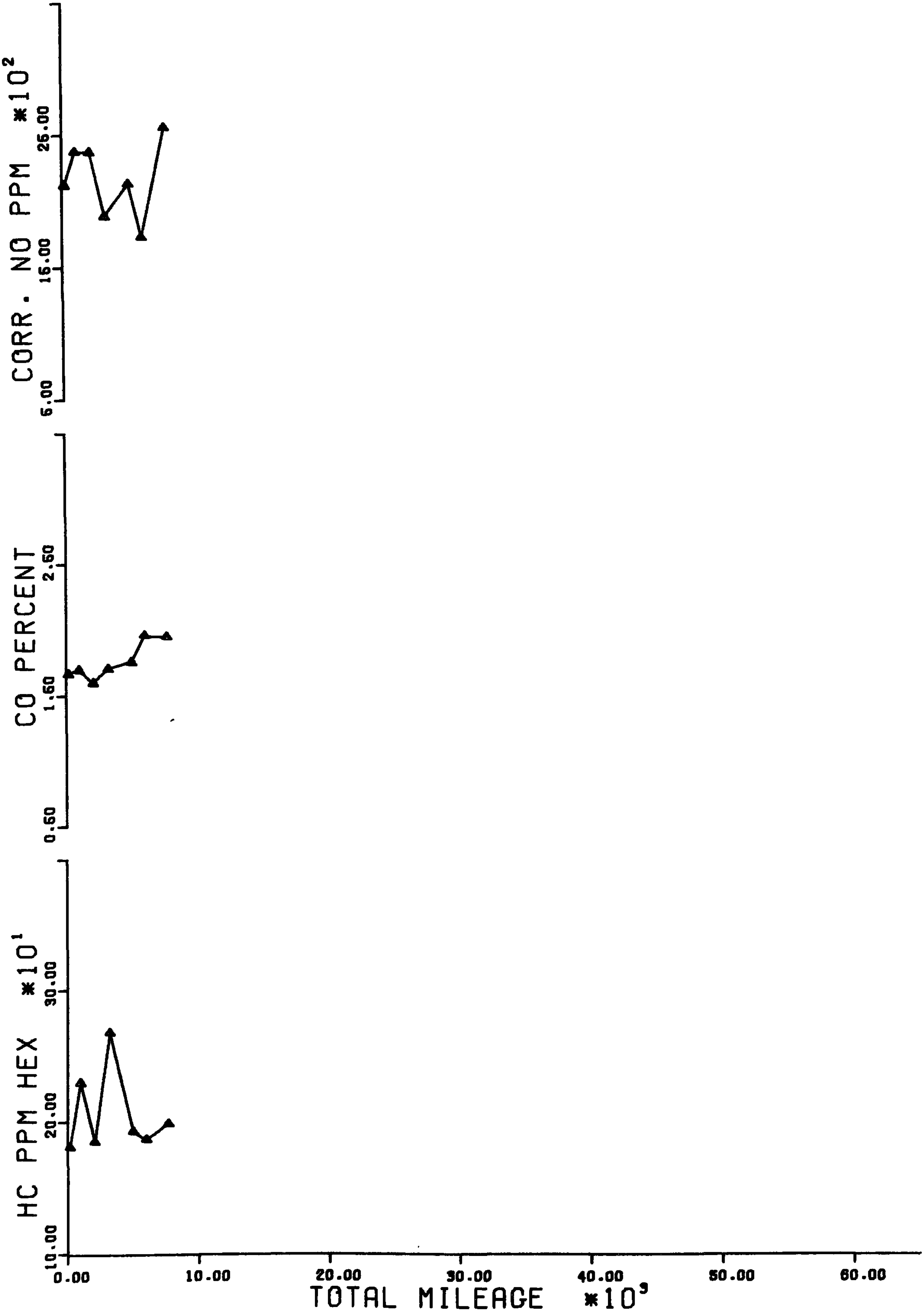



FIGURE E-90 UNIT 090 70 DODGE 10000 LB GVW GROUNDS 225 CID I6 ENGINE

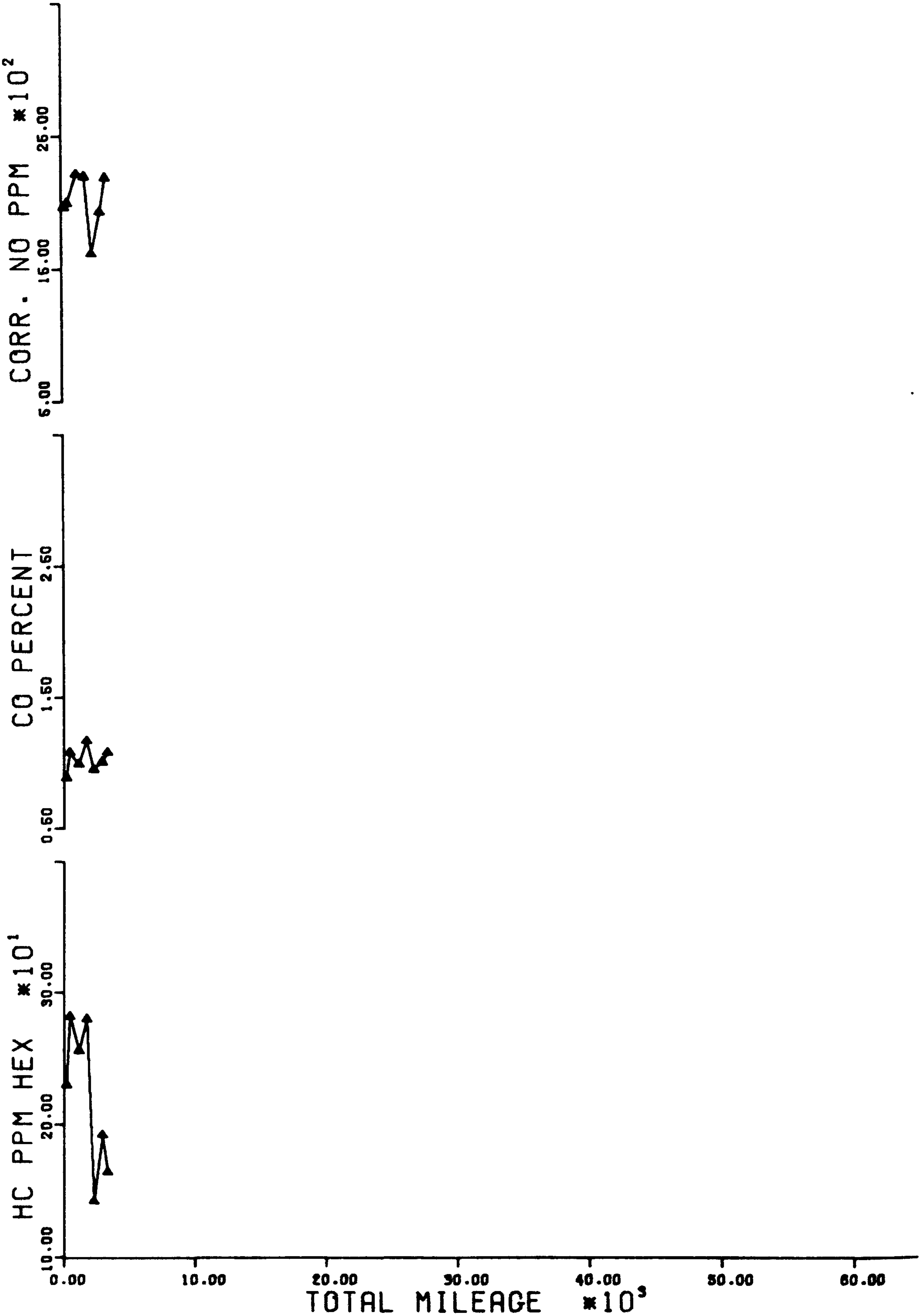



FIGURE E-91 UNIT 091 70 IHC 19000 LB GVW WATER TR 345 CID V8 ENGINE

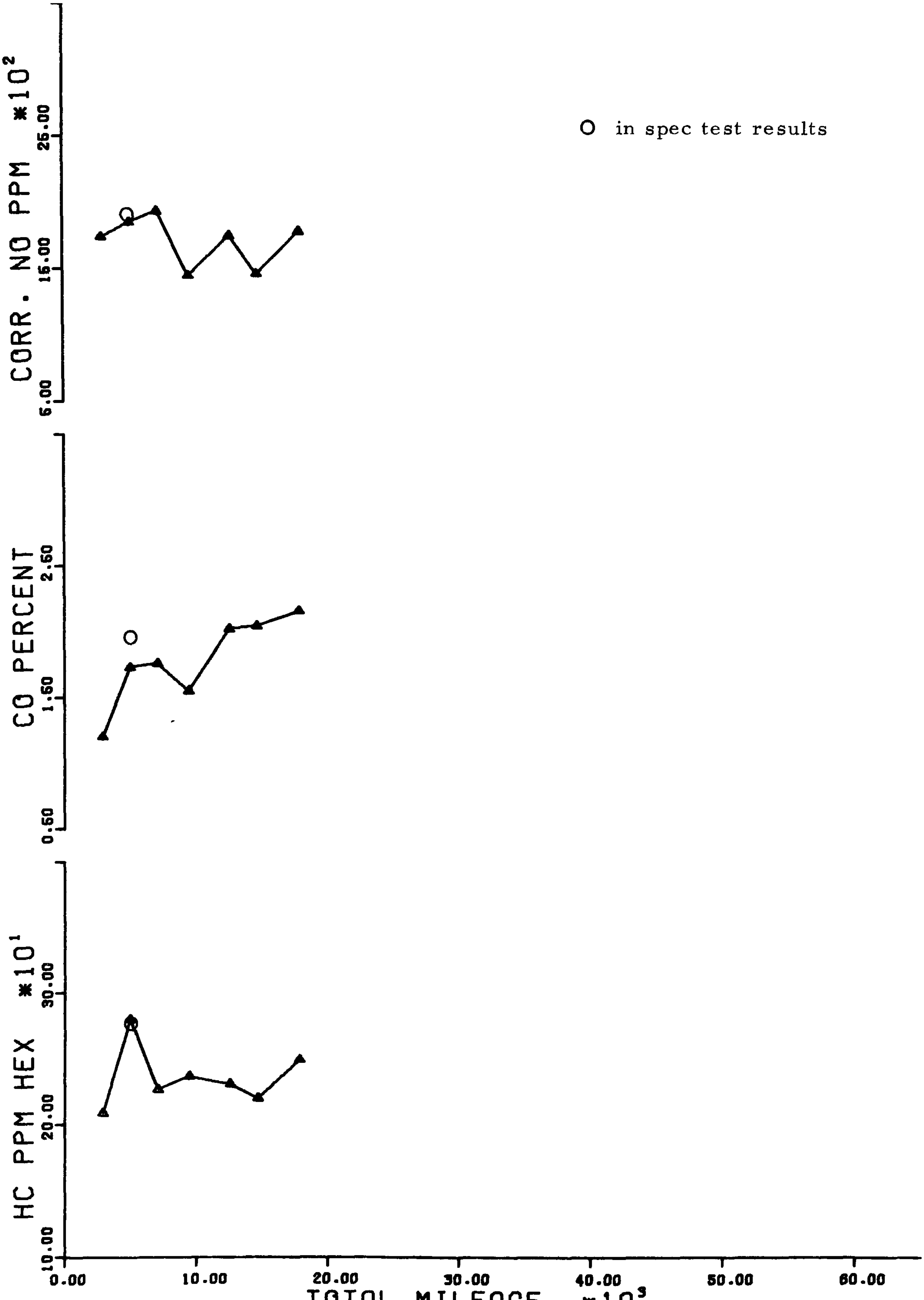



FIGURE E-92 UNIT 092 70 FORD 8300 LB GVW MAINT. 360 CID V8 ENGINE

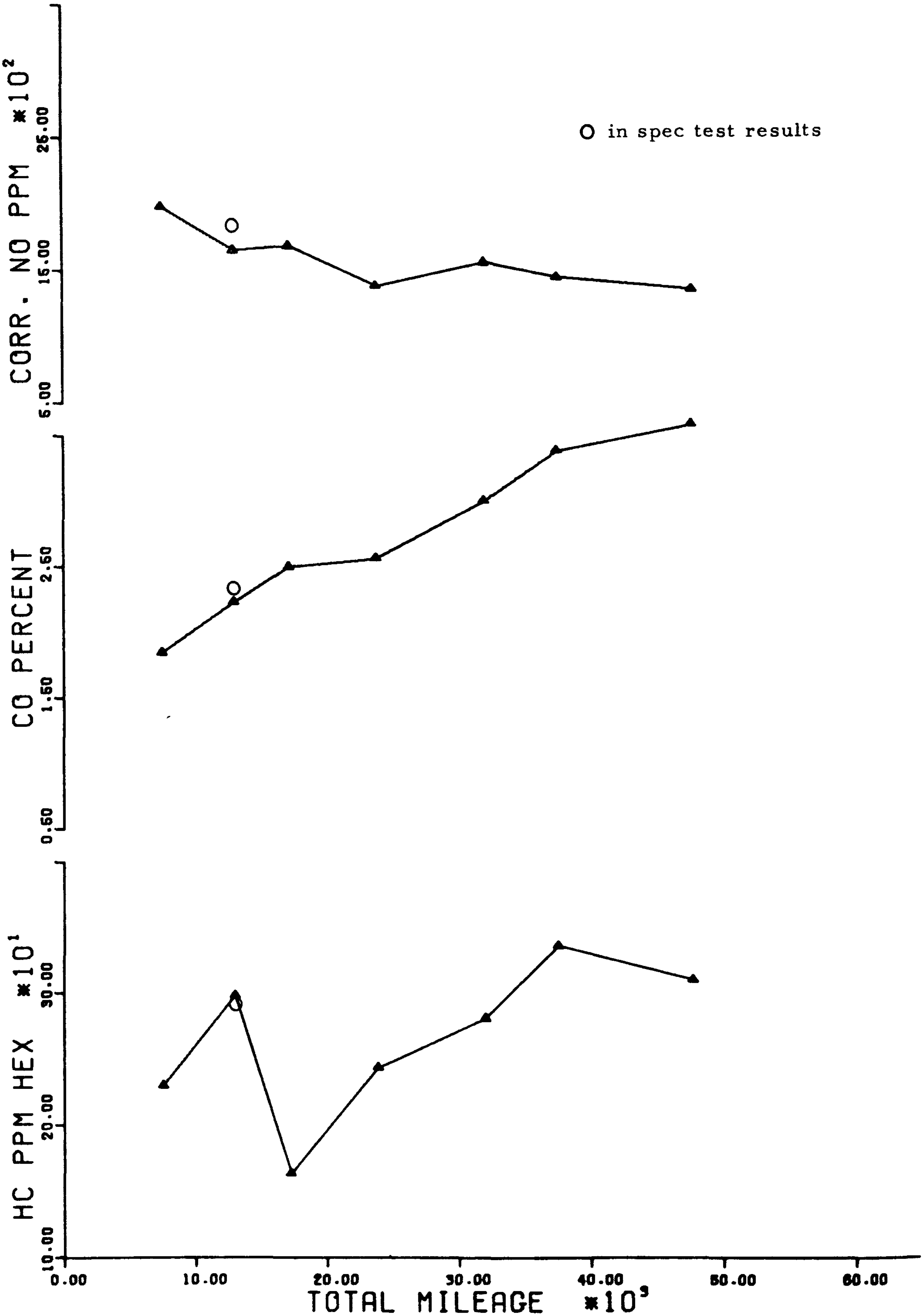



FIGURE E-93 UNIT 093 70 FORD 7500 LB GVW REPAIR 360 CID V8 ENGINE

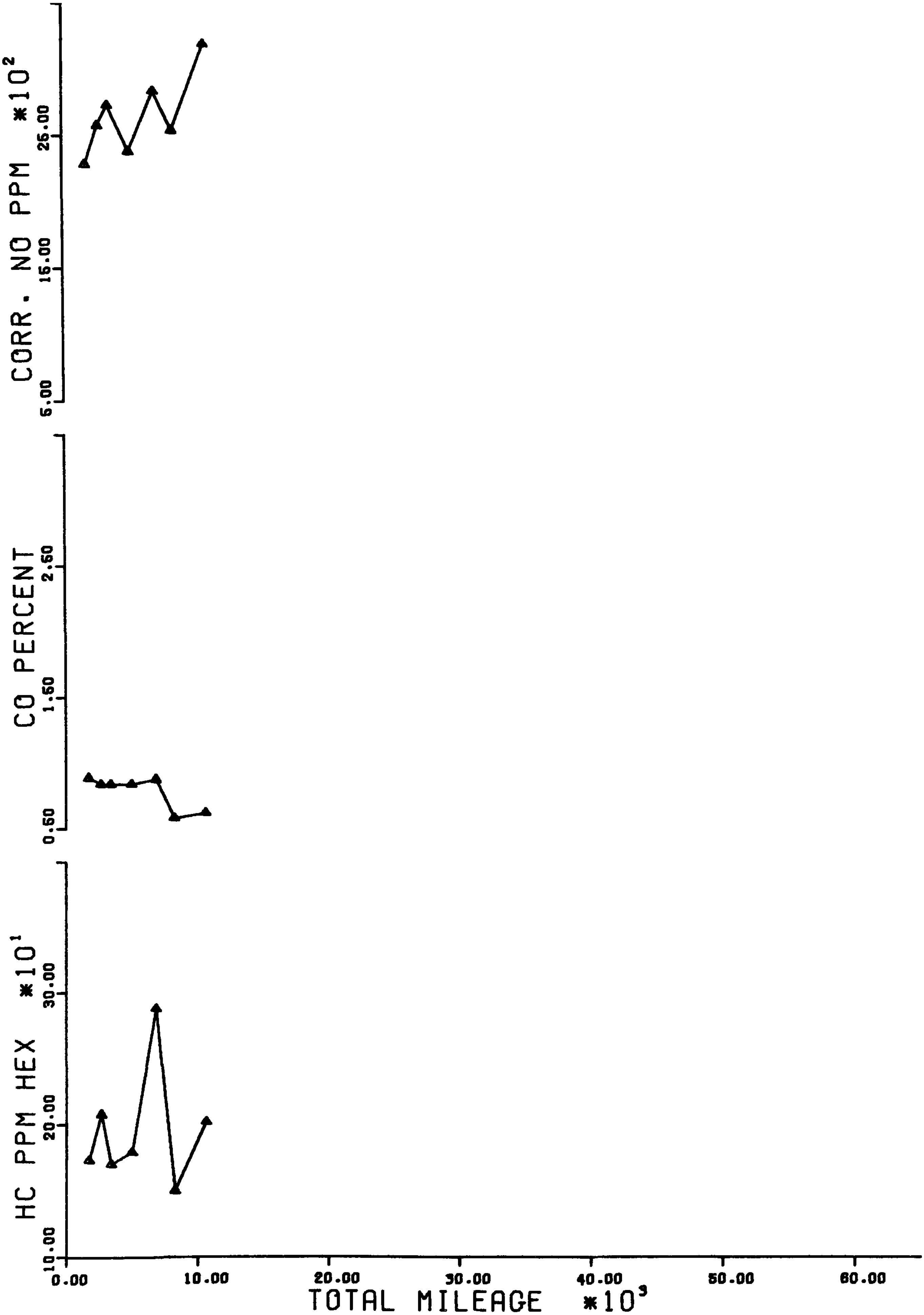



FIGURE E-94 UNIT 094 70 CHEV 14000 LB GVW MAINT. 292 CID I6 ENGINE

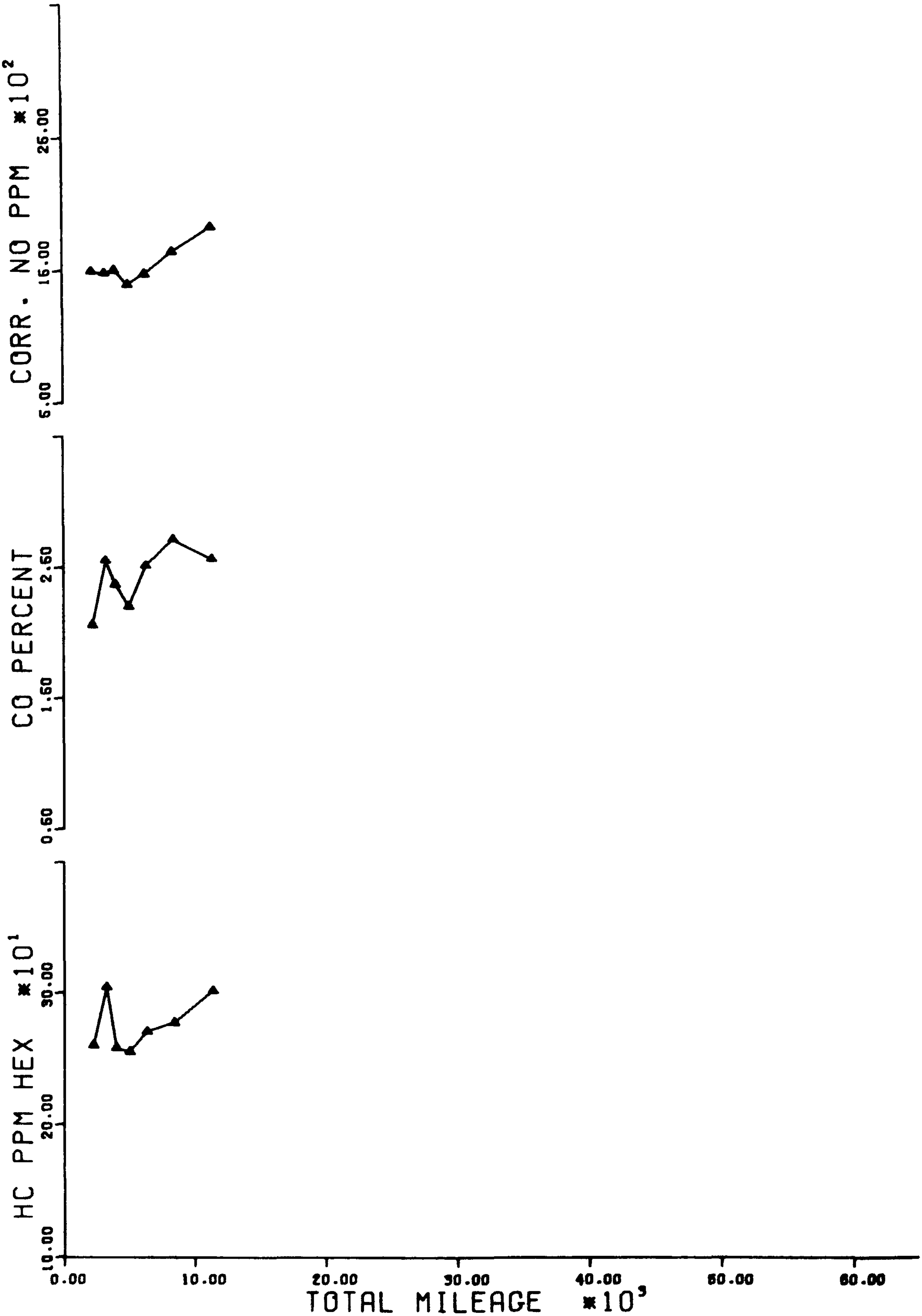



FIGURE E-95 UNIT 095 70 FORD 8300 LB GVW MAINT. 360 CID V8 ENGINE

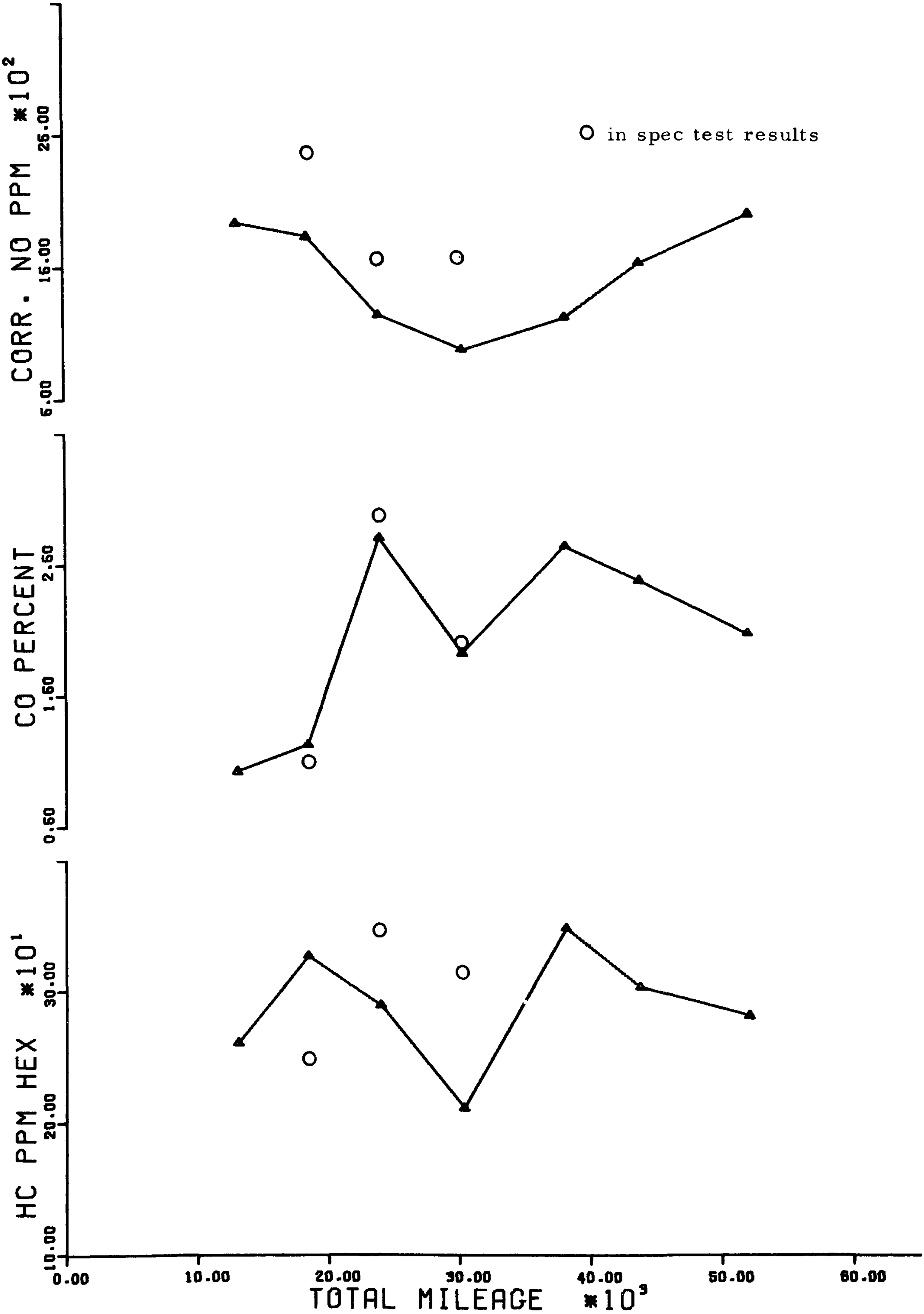



FIGURE E-96 UNIT 096 70 FORD 7500 LB GVW MAINT. 240 CID I6 ENGINE

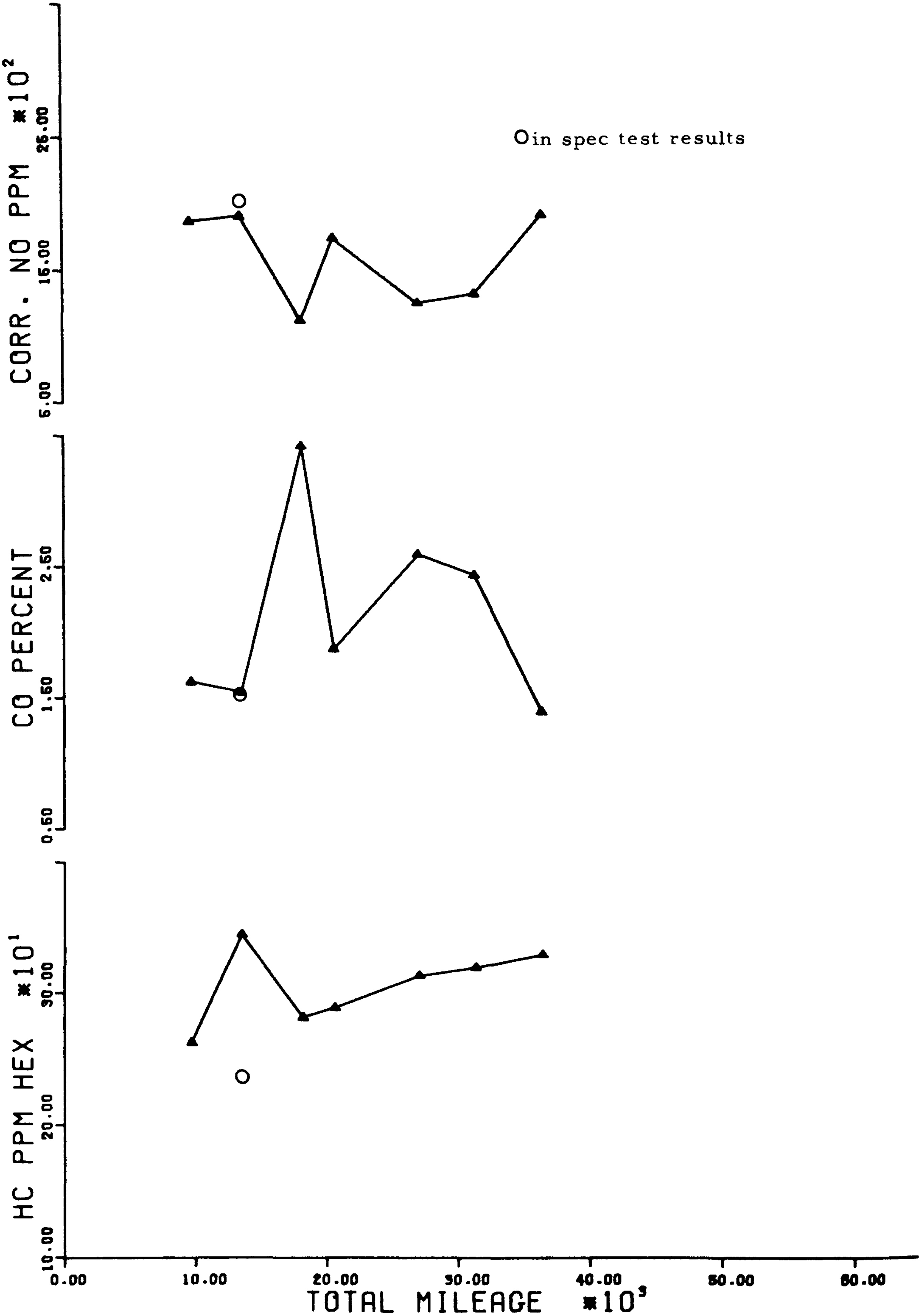



FIGURE E-97 UNIT 097 70 FORD 7500 LB GVW WELDER 240 CID I6 ENGINE

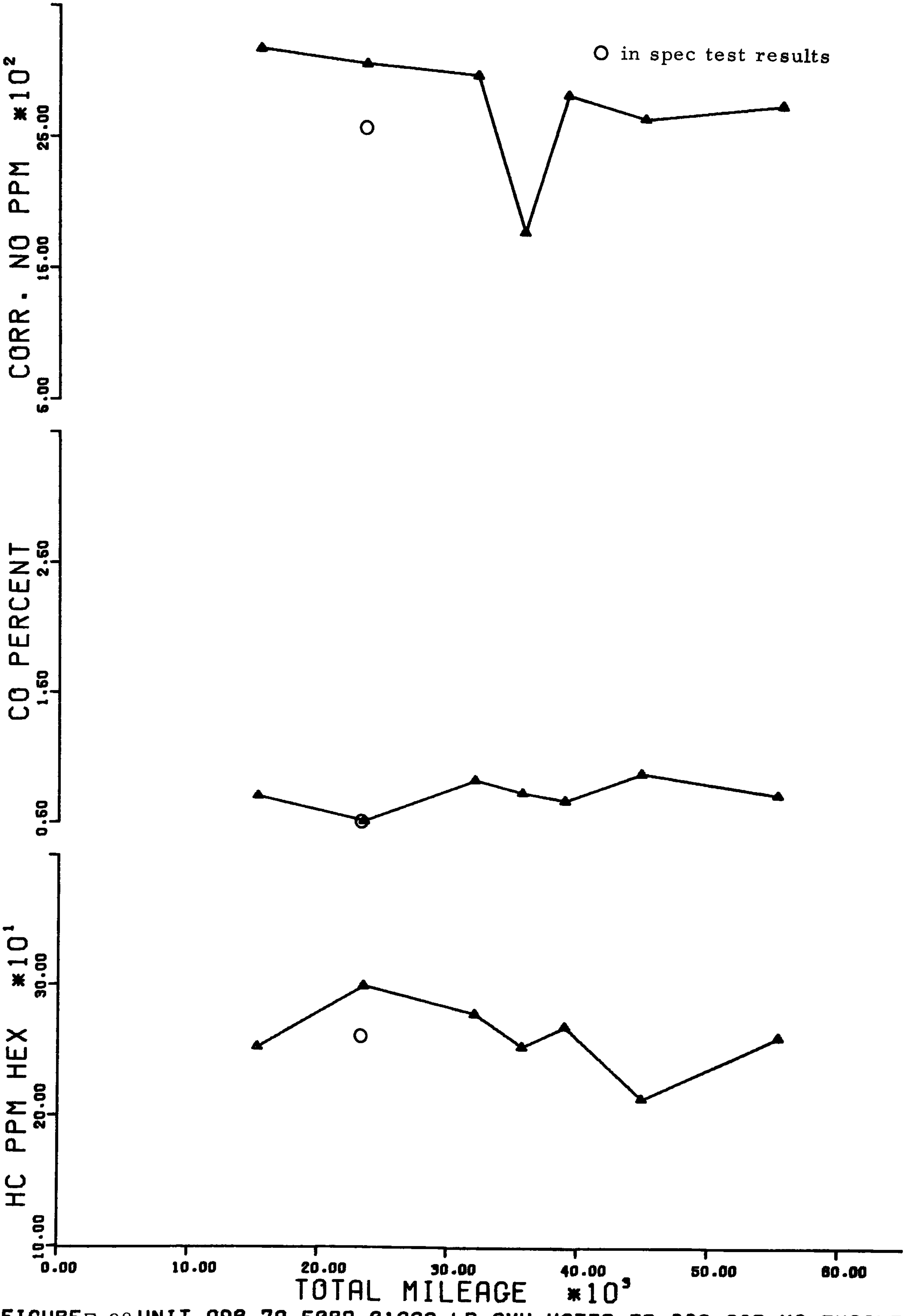



FIGURE E-98 UNIT 098 70 FORD 21000 LB GVW WATER TR 330 CID V8 ENGINE

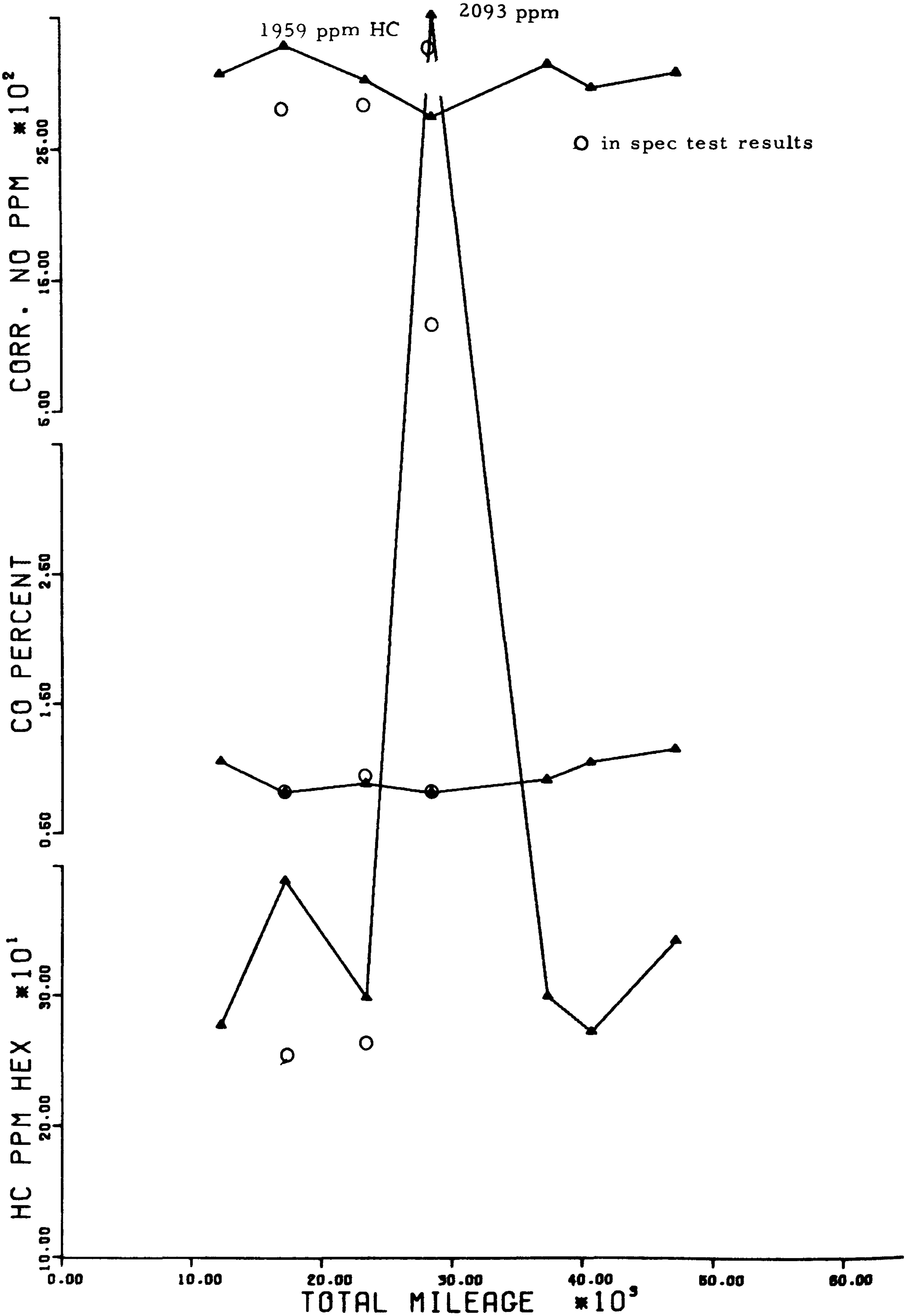



FIGURE E-99 UNIT 099 70 FORD 21000 LB GVW WATER TR 330 CID V8 ENGINE

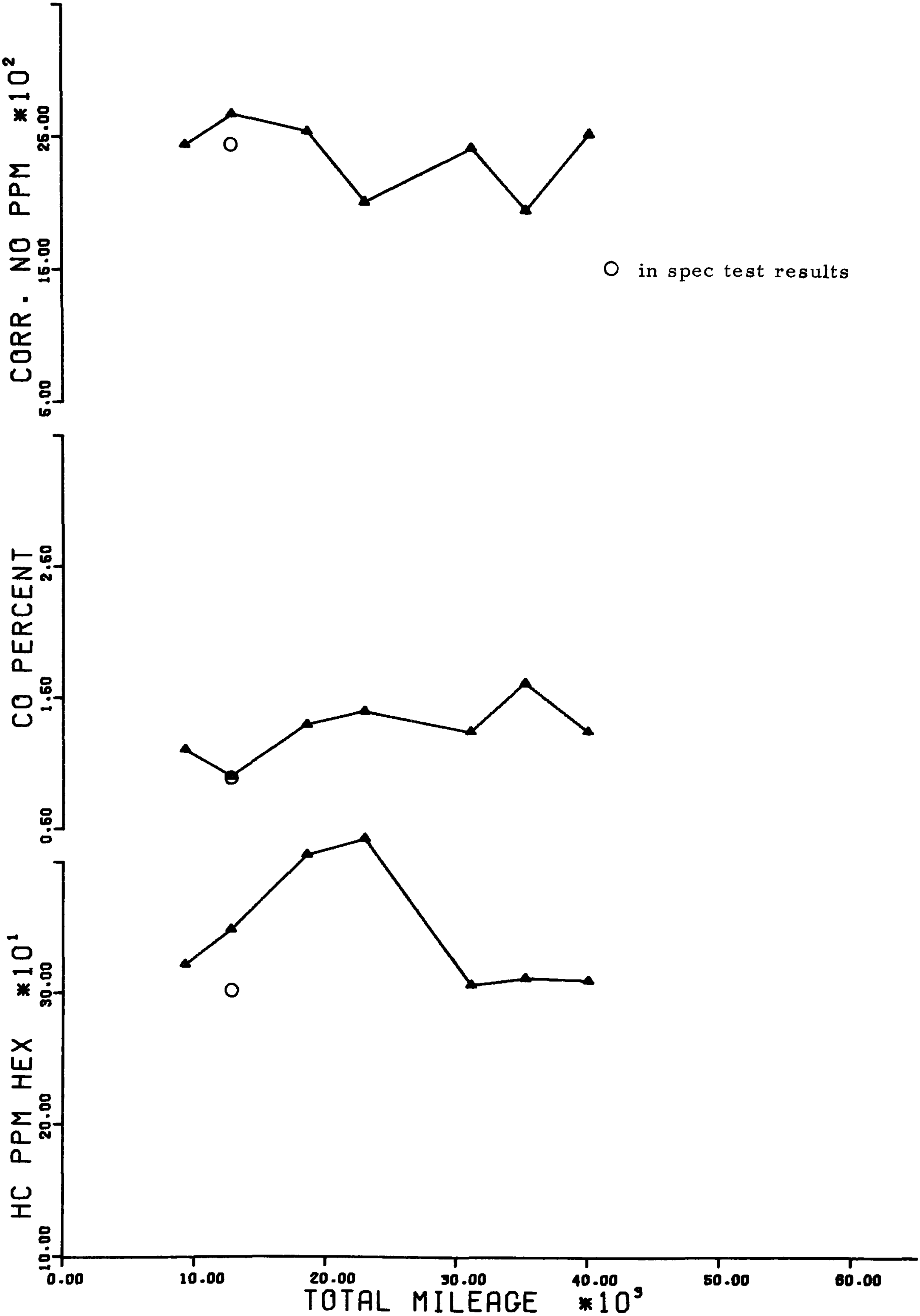



FIGURE E-100. UNIT 100 70 FORD 21000 LB GVW WATER TR 330 CID V8 ENGINE

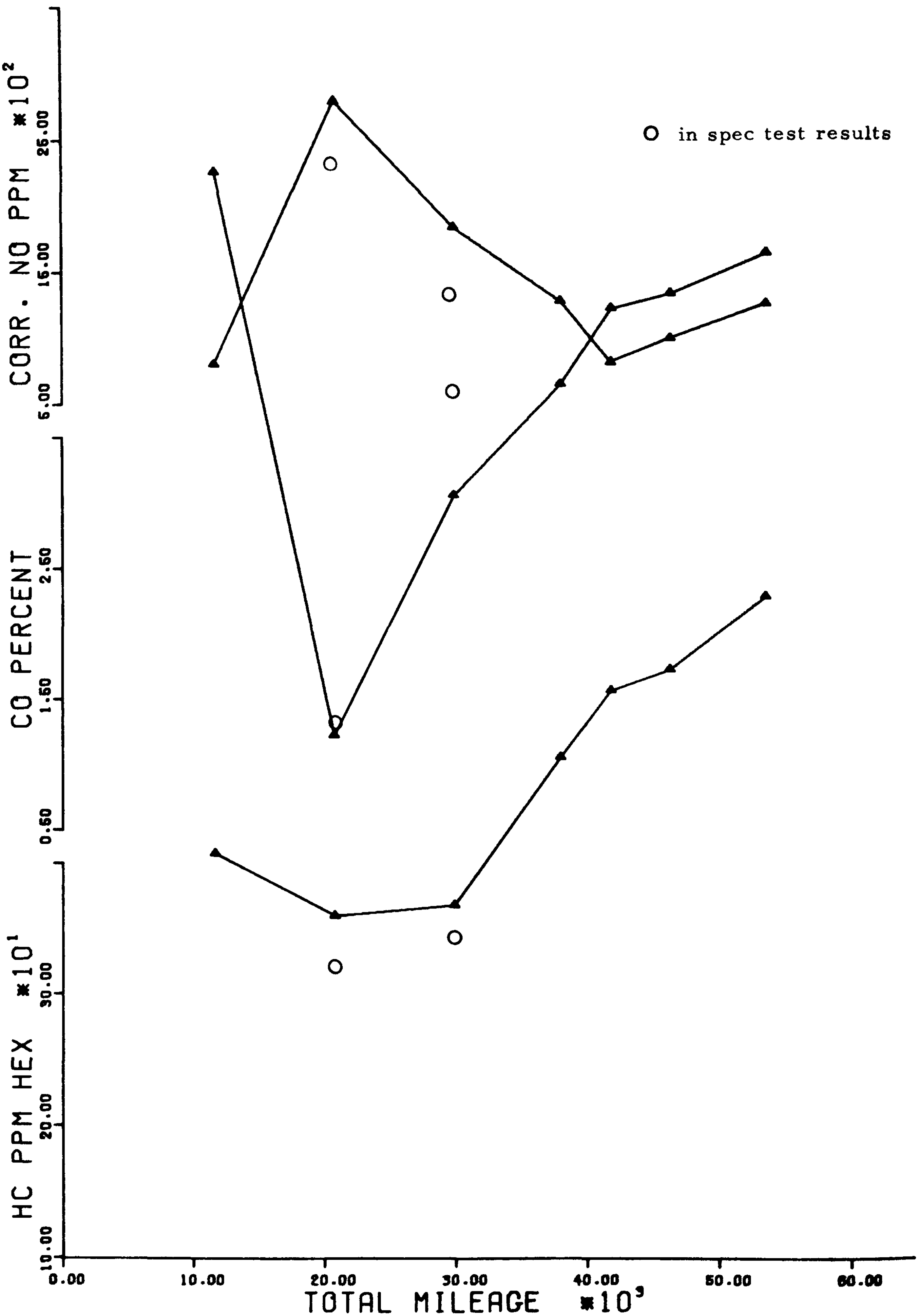



FIGURE E-101. UNIT 101 70 FORD 21000 LB GVW WATER TR 330 CID V8 ENGINE

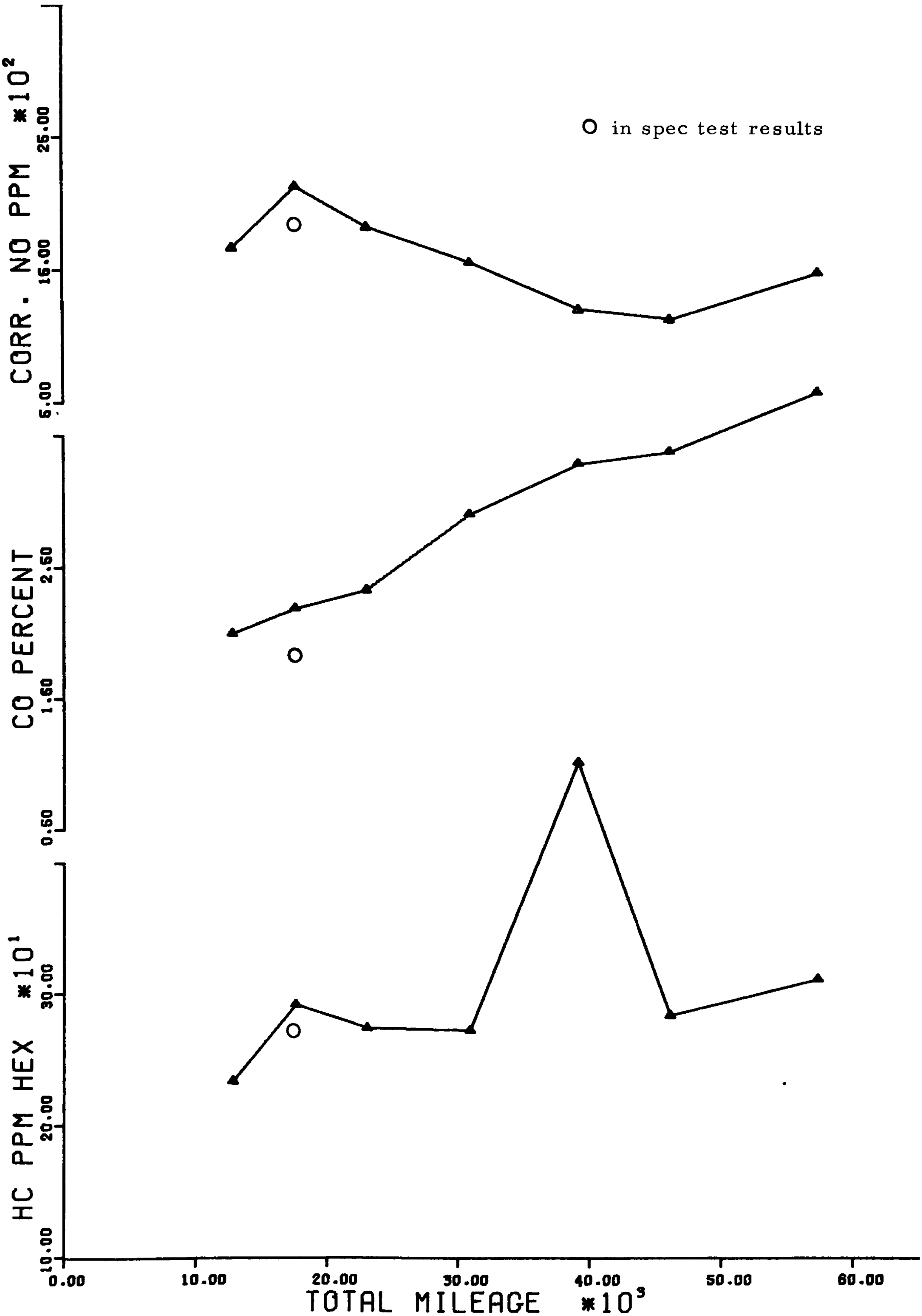



FIGURE E-102. UNIT 102 70 FORD 6100 LB GVW MAINT. 360 CID V8 ENGINE

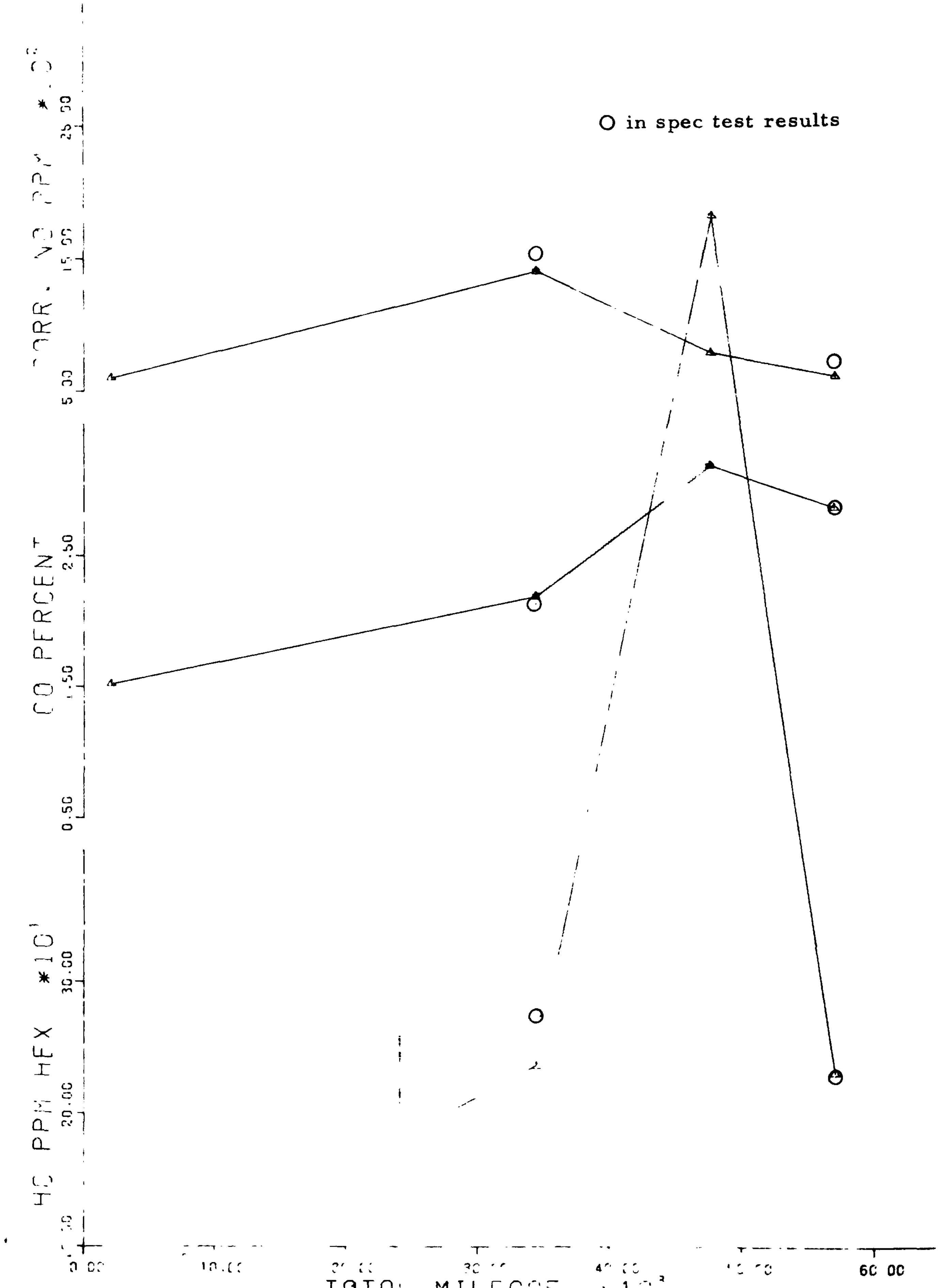



FIGURE E-103. NIT 1 GMC LB GVW MOVING TR ENGINE

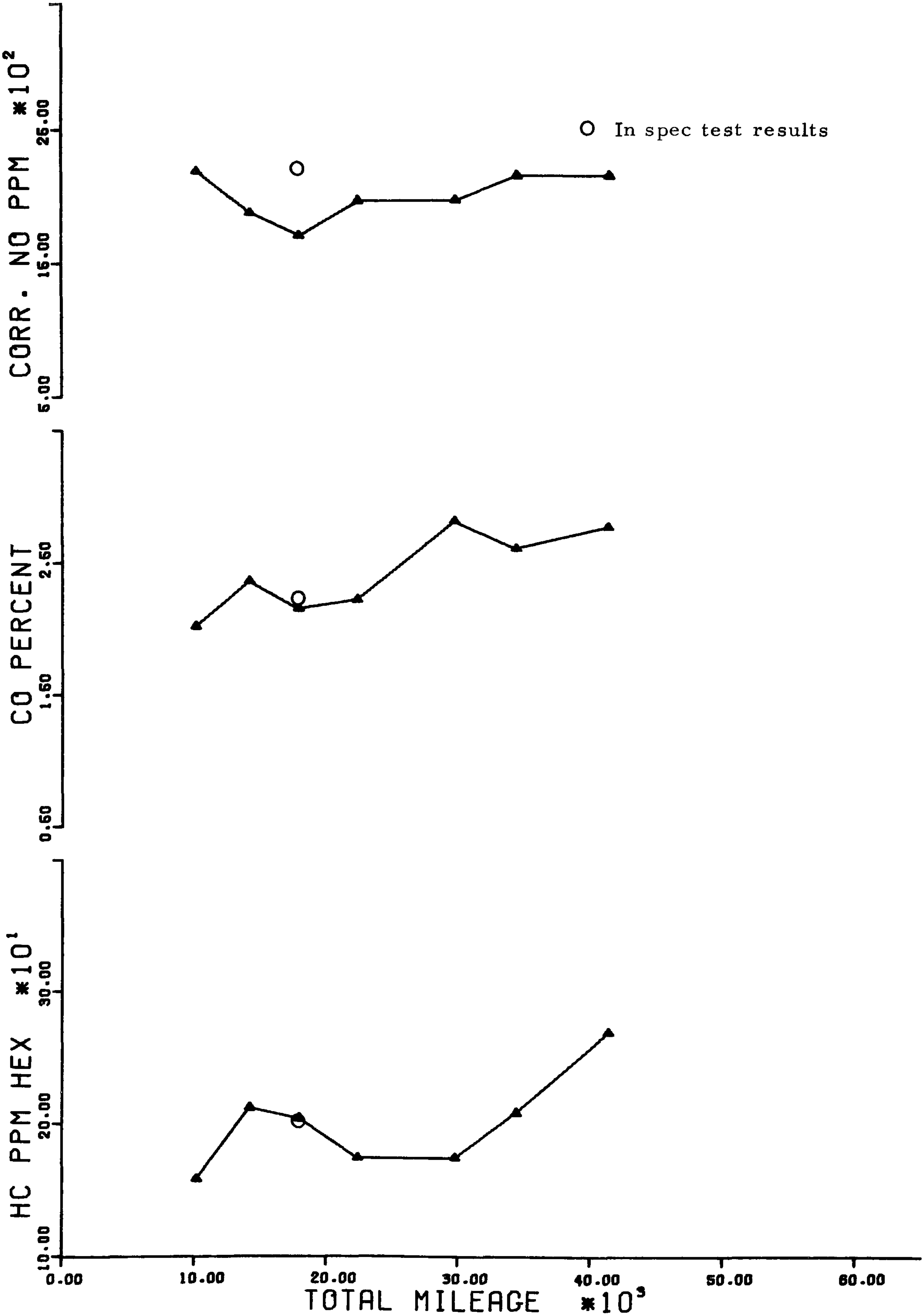



FIGURE E-104. UNIT 104 70 CHEV 7500 LB GVW MAINT. TR 307 CID V8 ENGINE

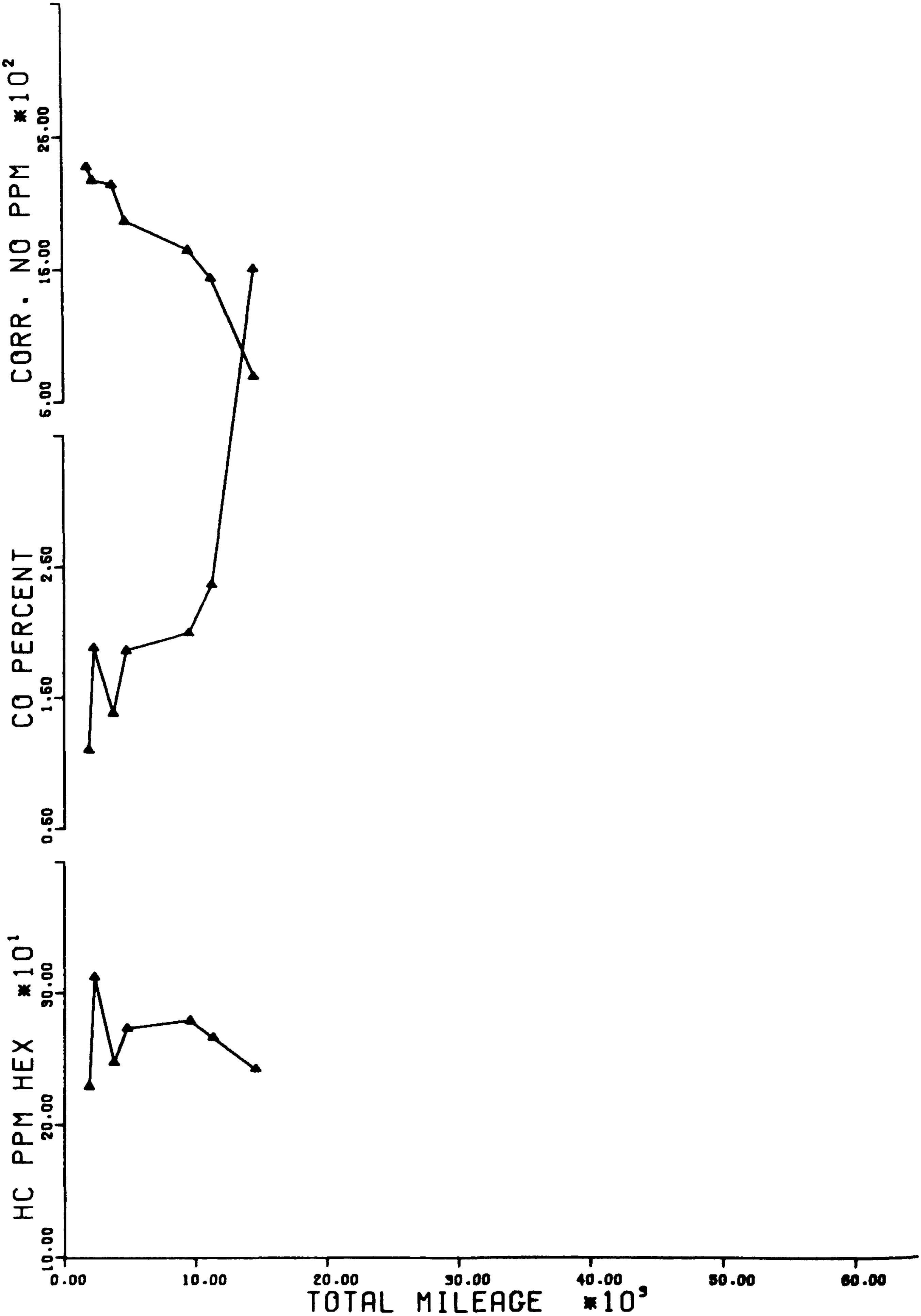



FIGURE E-105. UNIT 105 70 IHC 25500 LB GVW MAINT. TR 392 CID V8 ENGINE

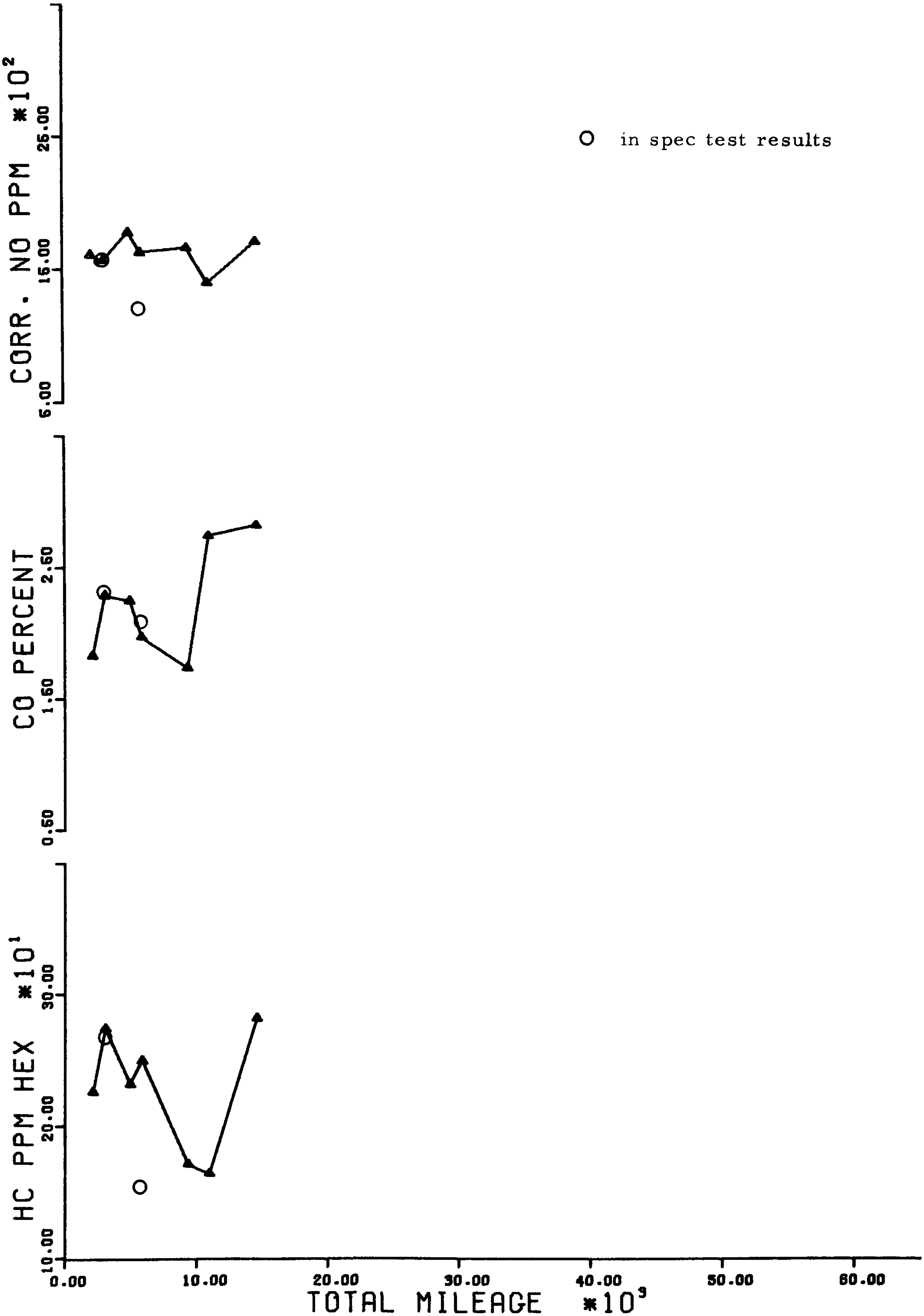



FIGURE E-106. UNIT 106 70 FORD 8300 LB GVW MAINT. TR 360 CID V8 ENGINE

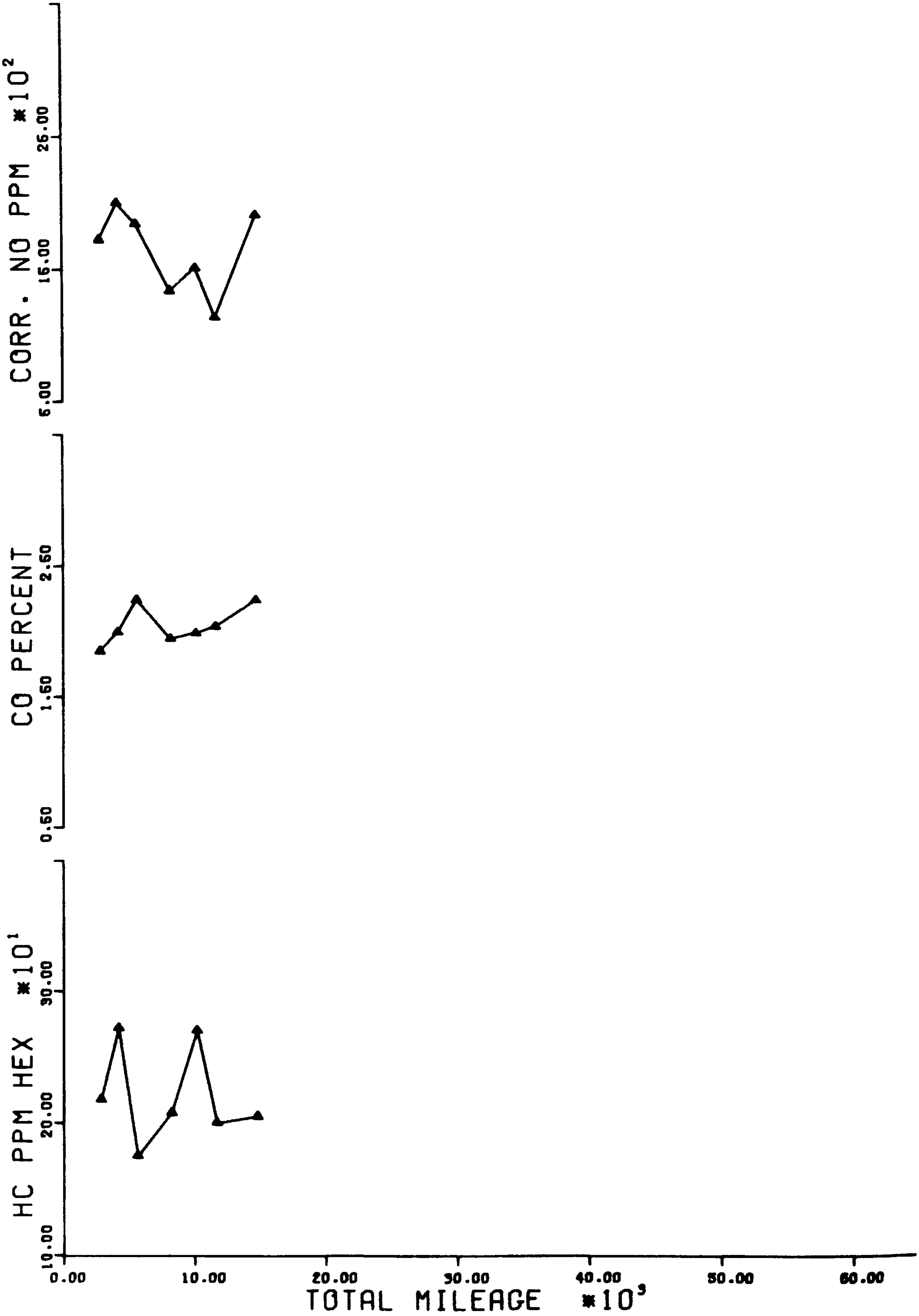



FIGURE E-107. UNIT 107 70 CHEV 7500 LB GVW MAINT. 307 CID V8 ENGINE

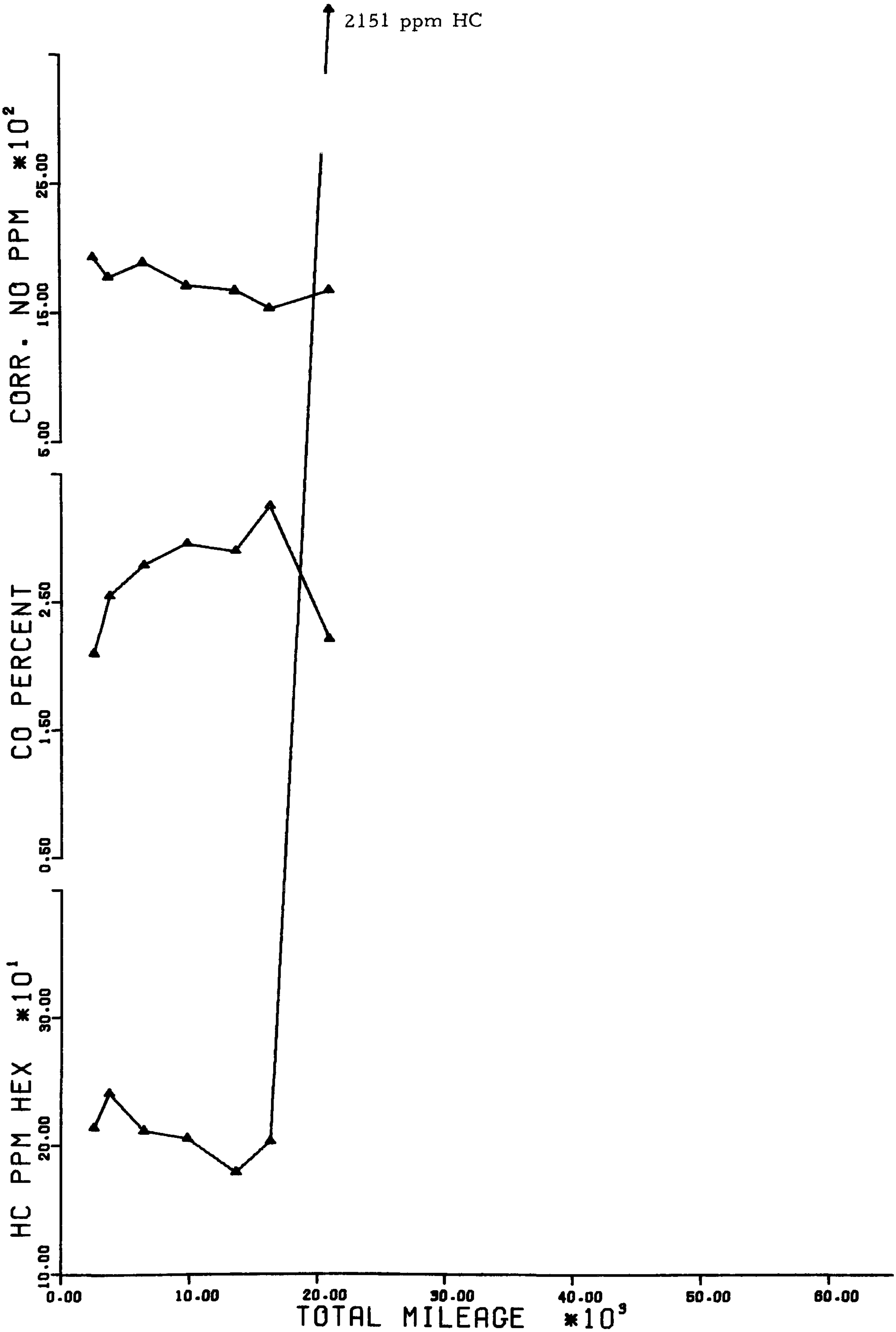



FIGURE E-108. UNIT 108 70 CHEV 10000 LB GVW MAINT. 307 CID V8 ENGINE

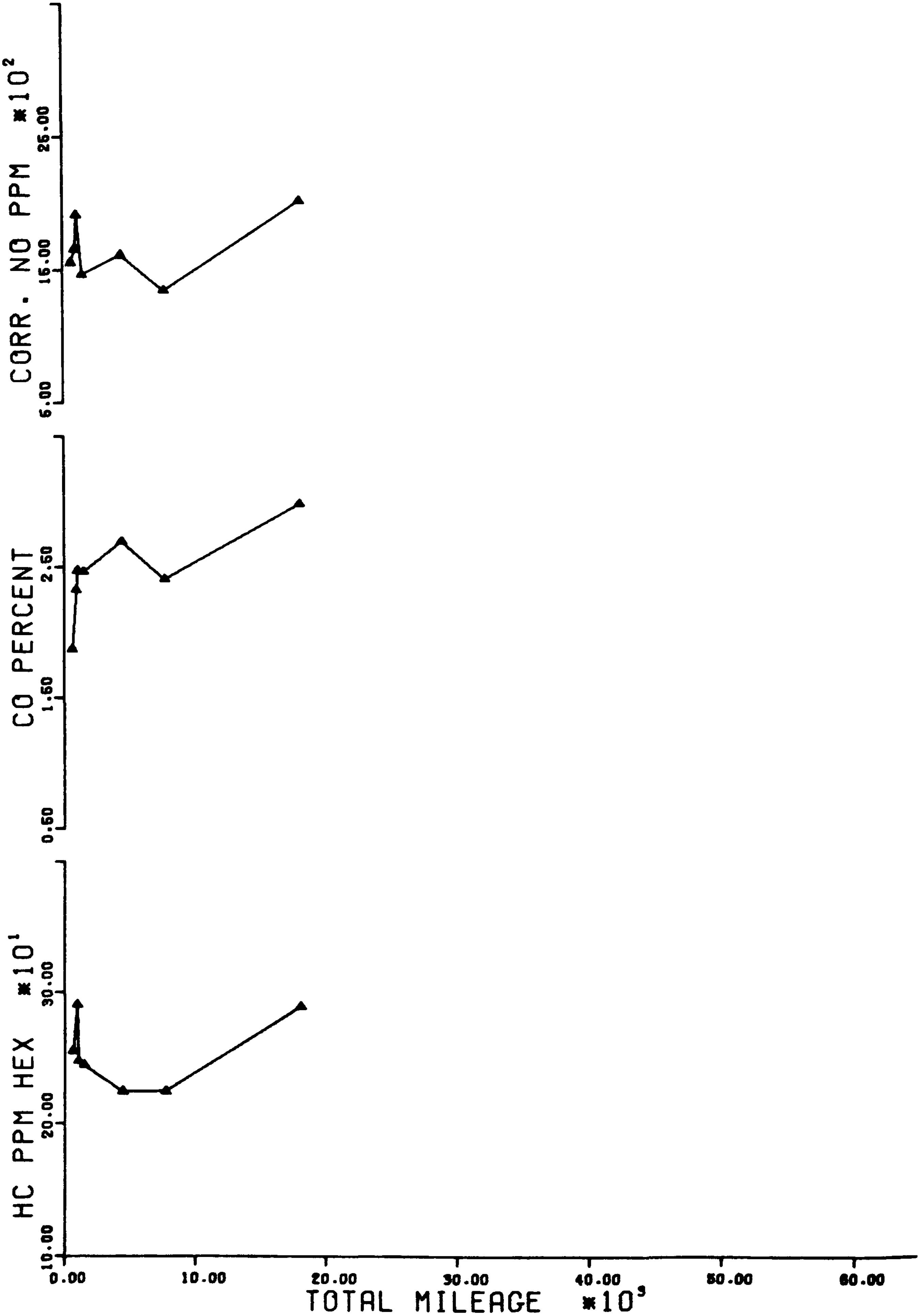



FIGURE E-109. UNIT 109 70 CHEV 10000 LB GVW MAINT. 307 CID V8 ENGINE

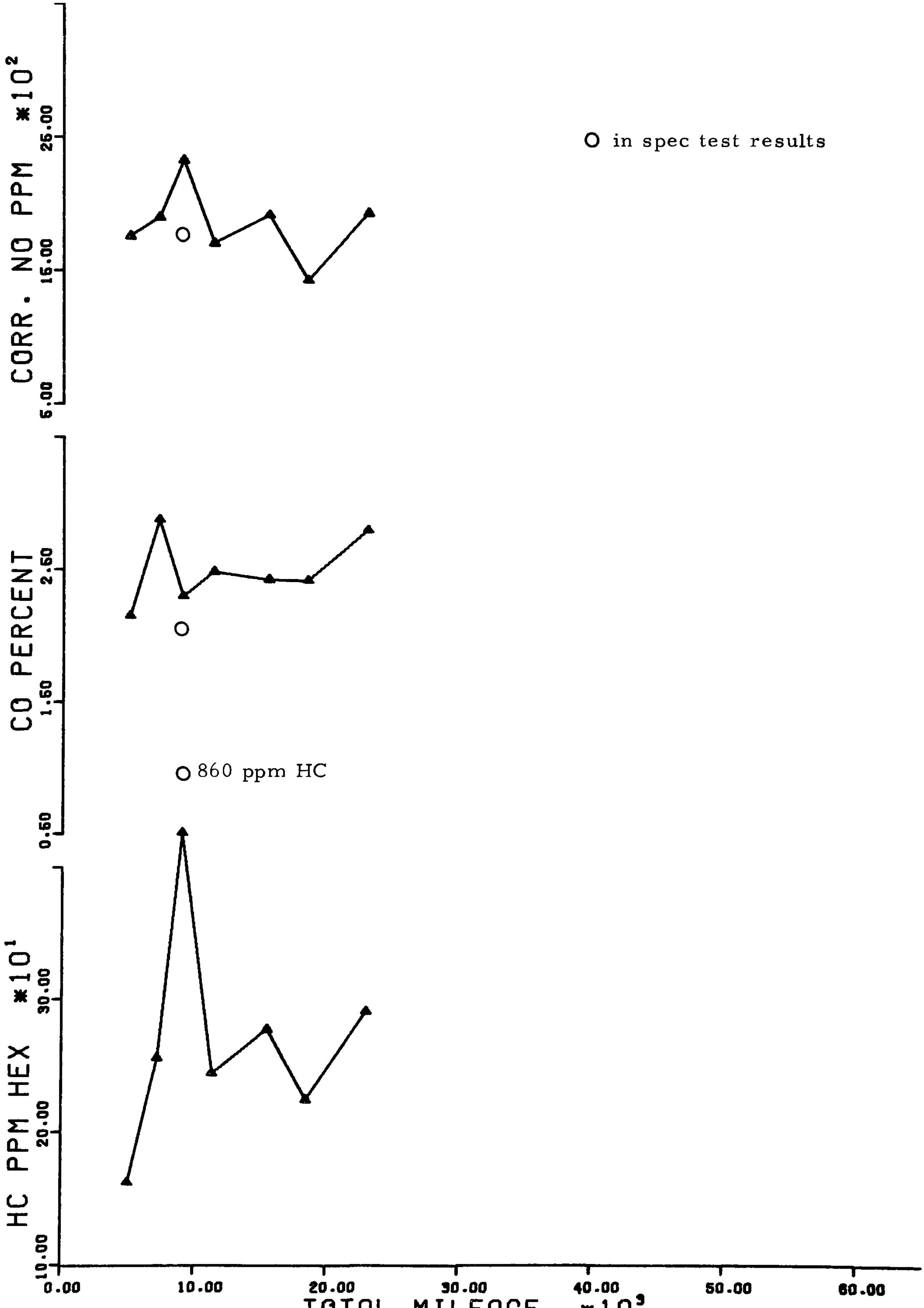



FIGURE E-110. UNIT 110 70 CHEV 7500 LB GVW MAINT. 307 CID V8 ENGINE

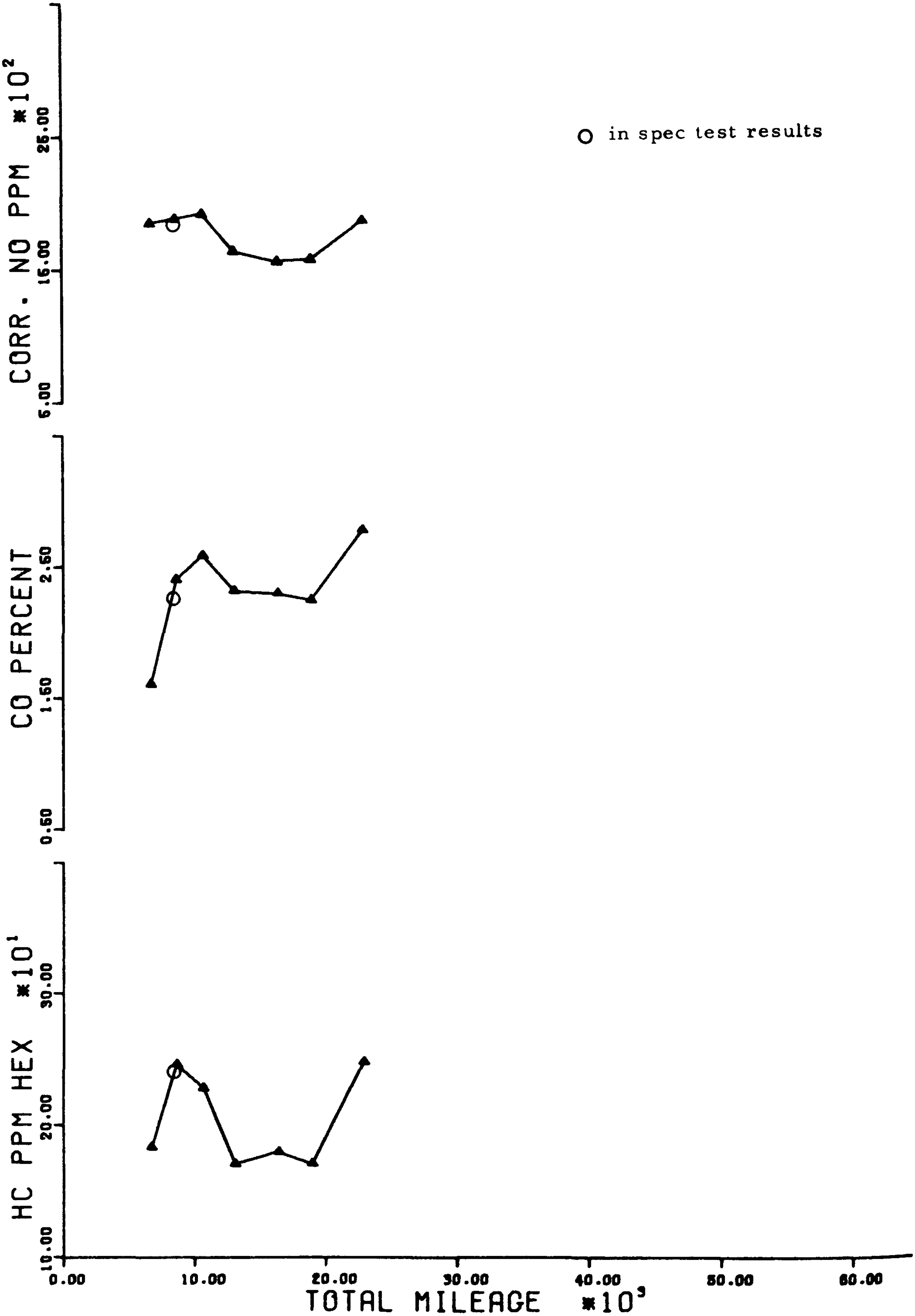



FIGURE E-111. UNIT 111 70 CHEV 7500 LB GVW MAINT. 307 CID V8 ENGINE

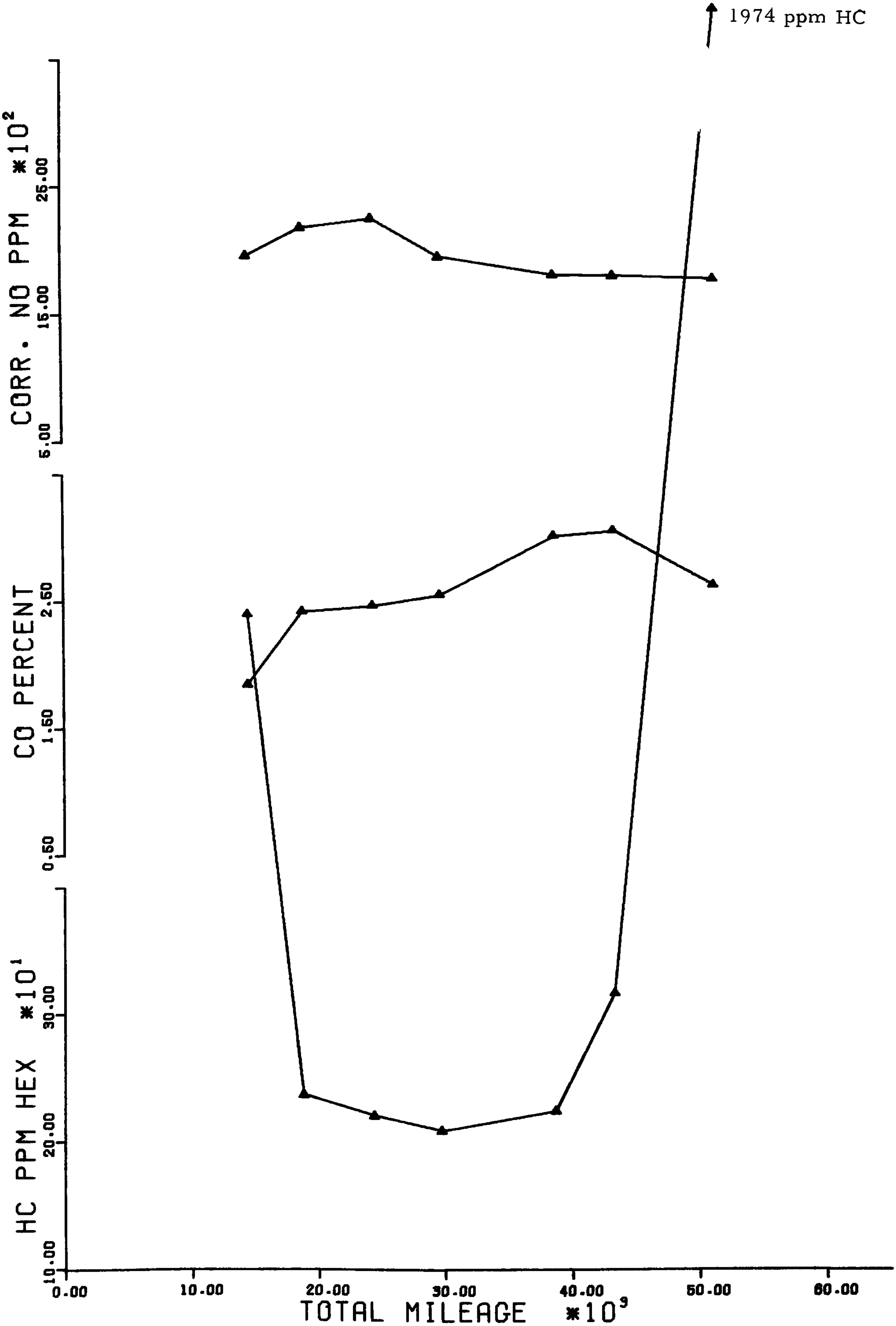



FIGURE E-112. UNIT 112 70 CHEV 10000 LB GVW MAINT. 307 CID V8 ENGINE

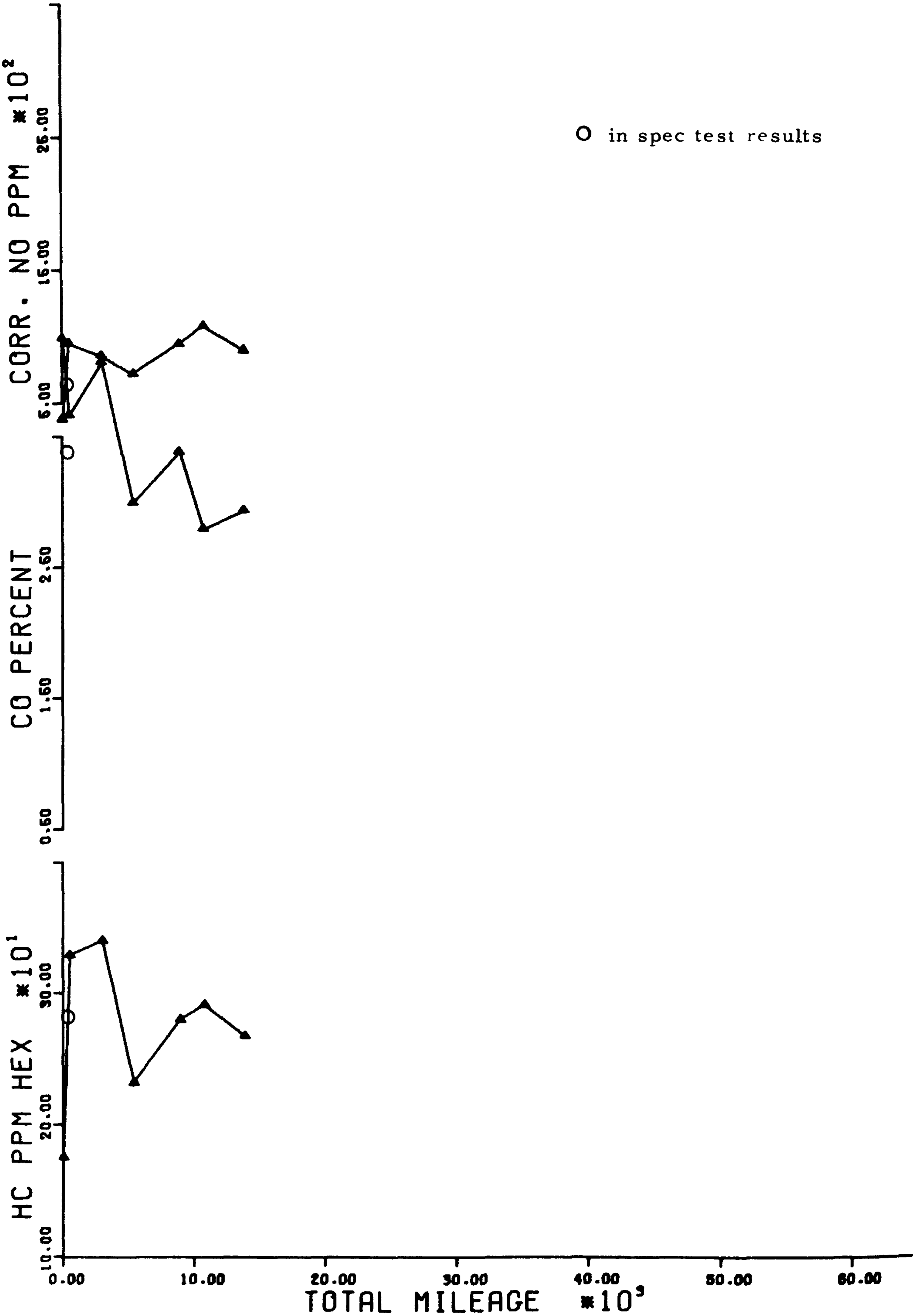



FIGURE D-113. UNIT 113 71 IHC 24000 LB GVW CONSTR.TR 392 CID V8 ENGINE

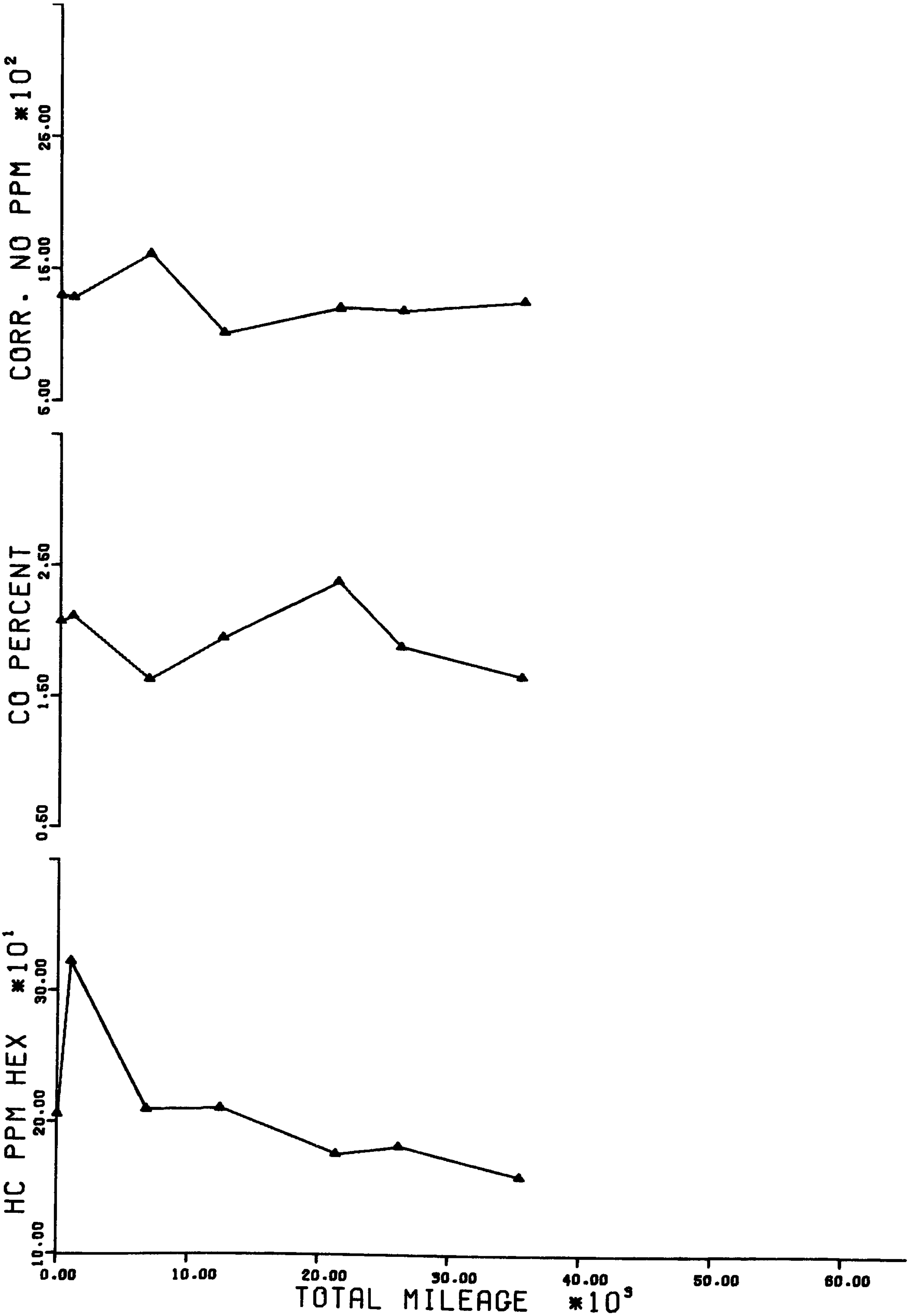


FIGURE E-114. UNIT 114 71 IHC 25500 LB GVW CONSTR.TR 392 CID V8 ENGINE

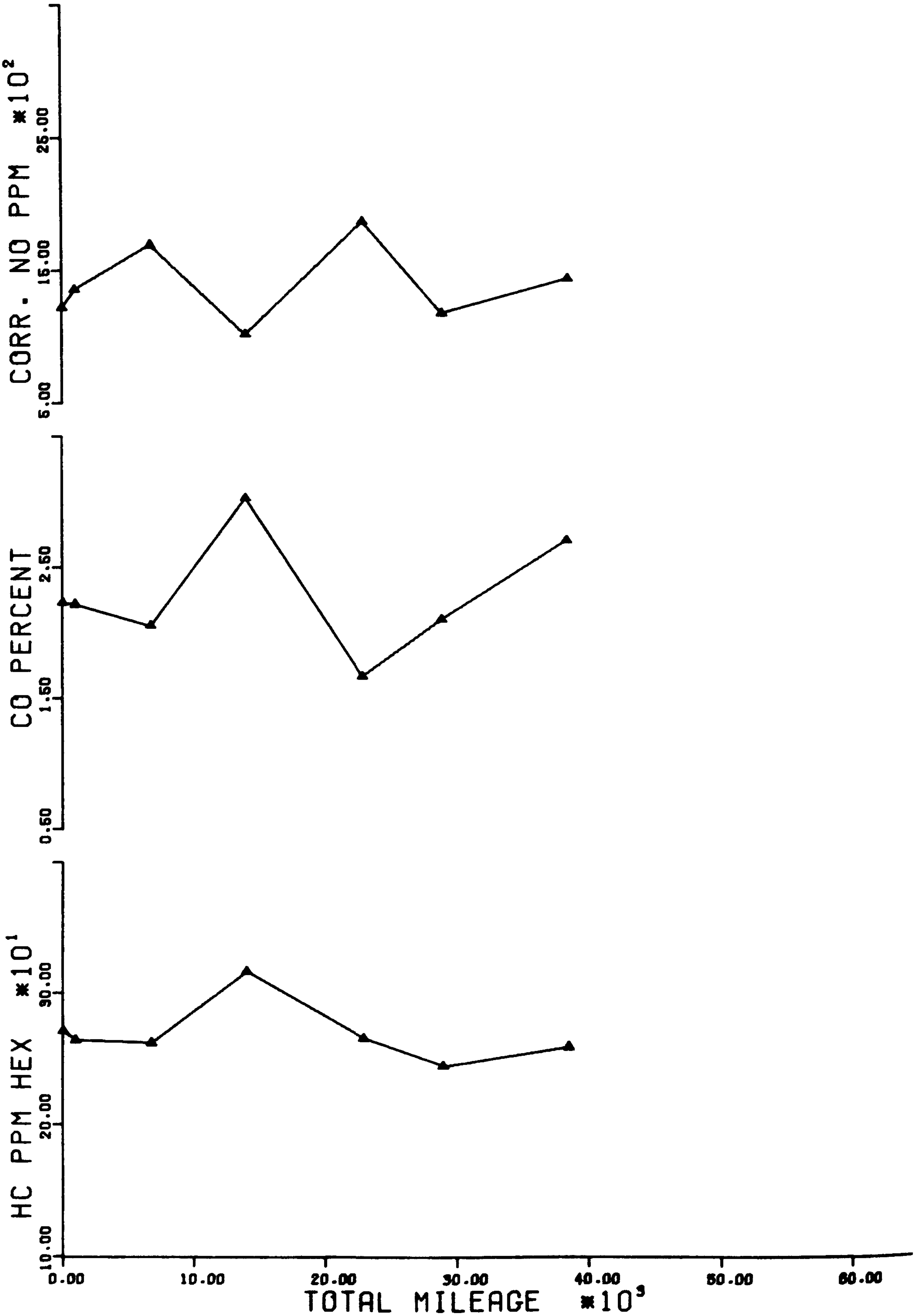



FIGURE E-115. UNIT 115 71 IHC 25500 LB GVW CONSTR.TR 392 CID V8 ENGINE

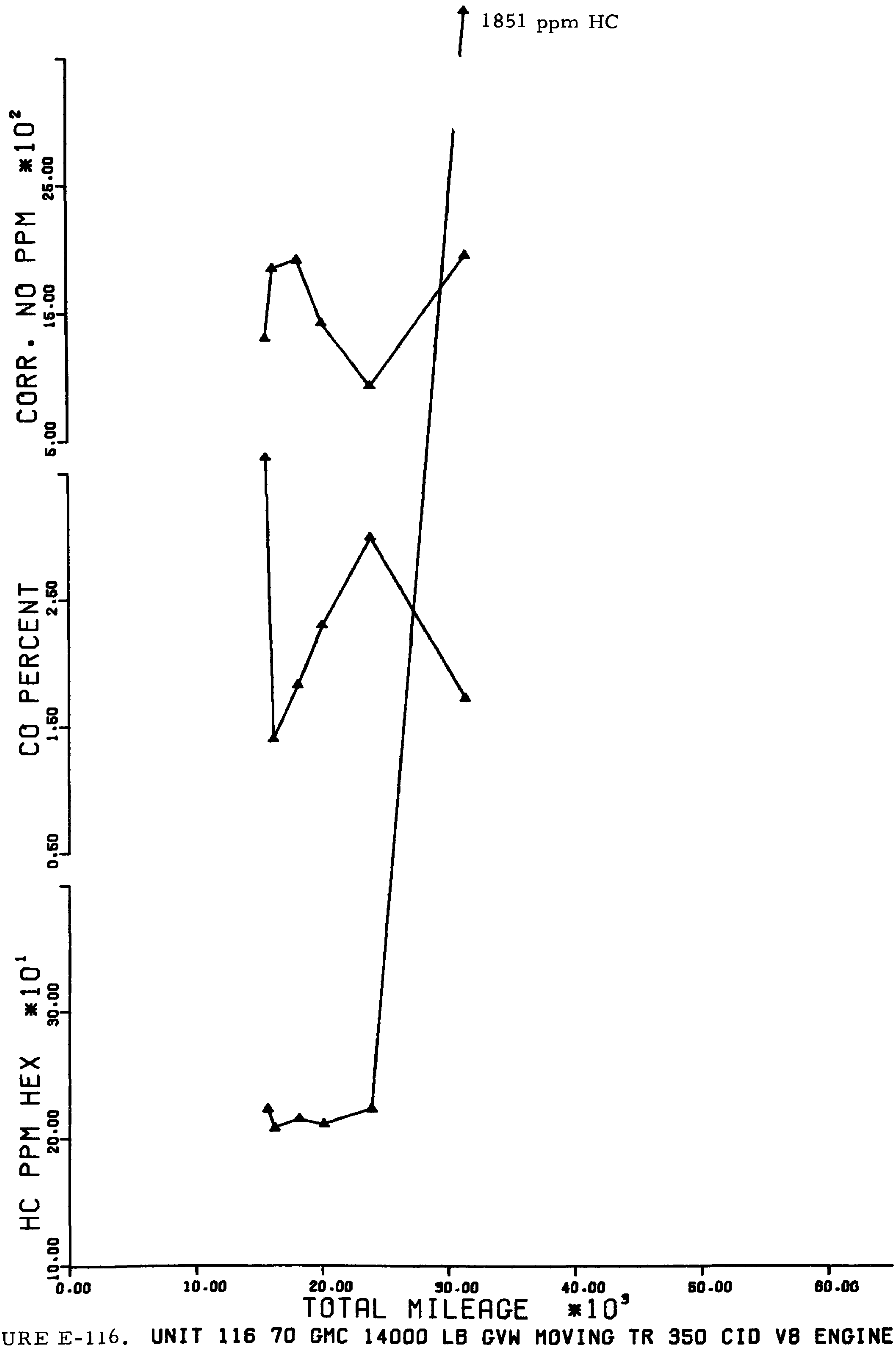



FIGURE E-116. UNIT 116 70 GMC 14000 LB GVW MOVING TR 350 CID V8 ENGINE

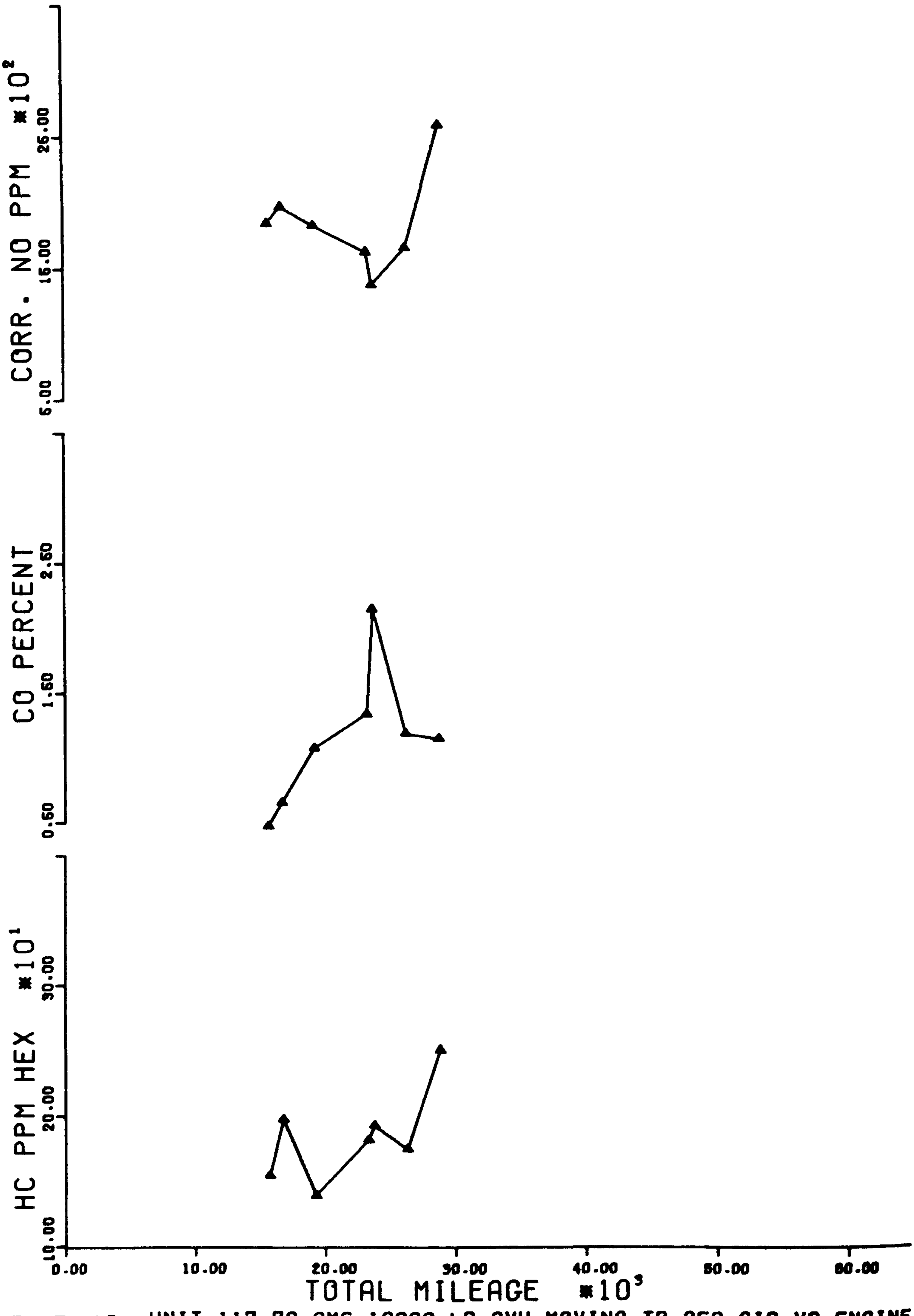



FIGURE E-117. UNIT 117 70 GMC 10000 LB GVW MOVING TR 350 CID V8 ENGINE

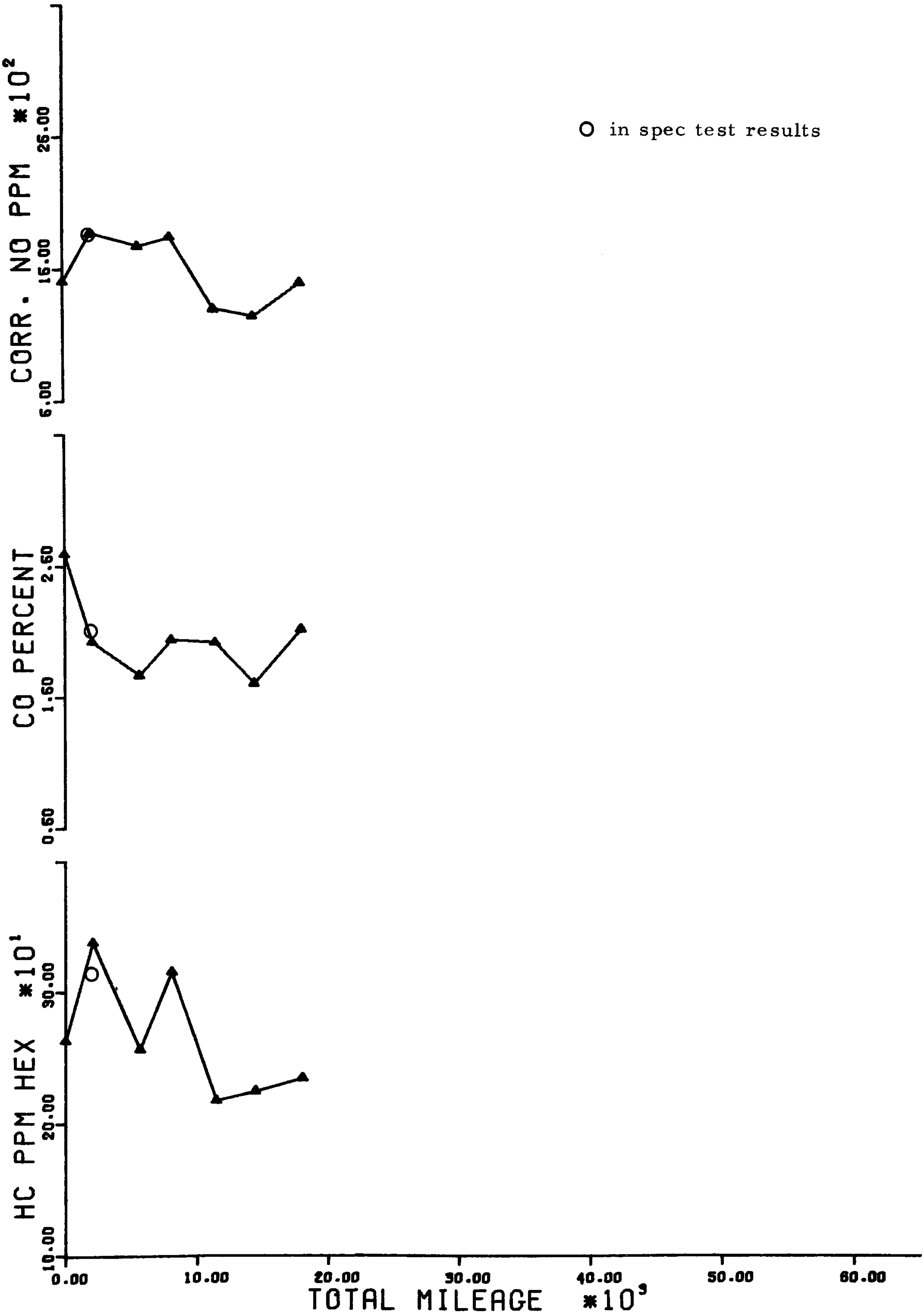



FIGURE E-118. UNIT 118 70 DODGE 10000 LB GVW MAIL 318 CID V8 ENGINE

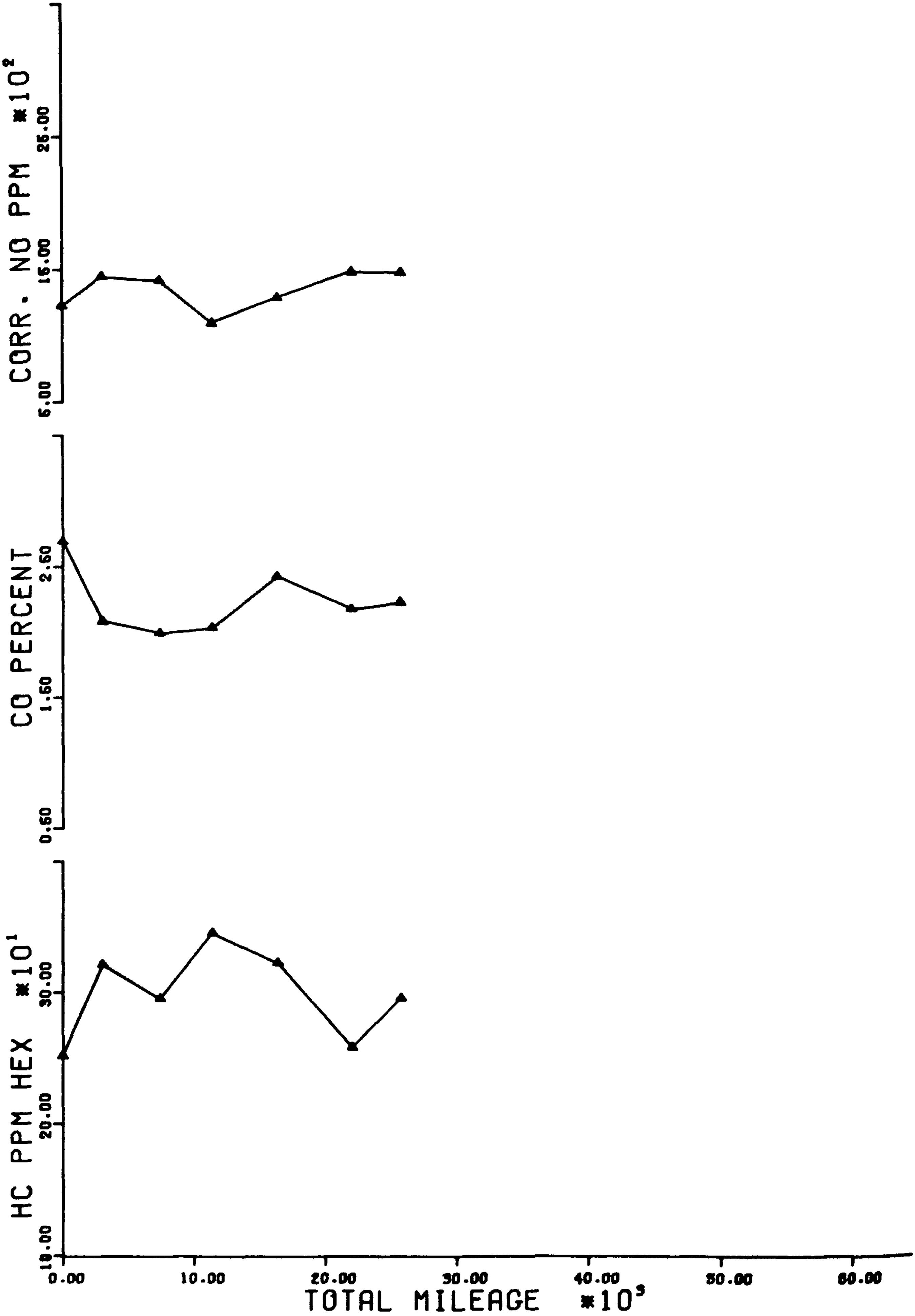



FIGURE E-119. UNIT 119 70 DODGE 10000 LB GVW MAIL 318 CID V8 ENGINE

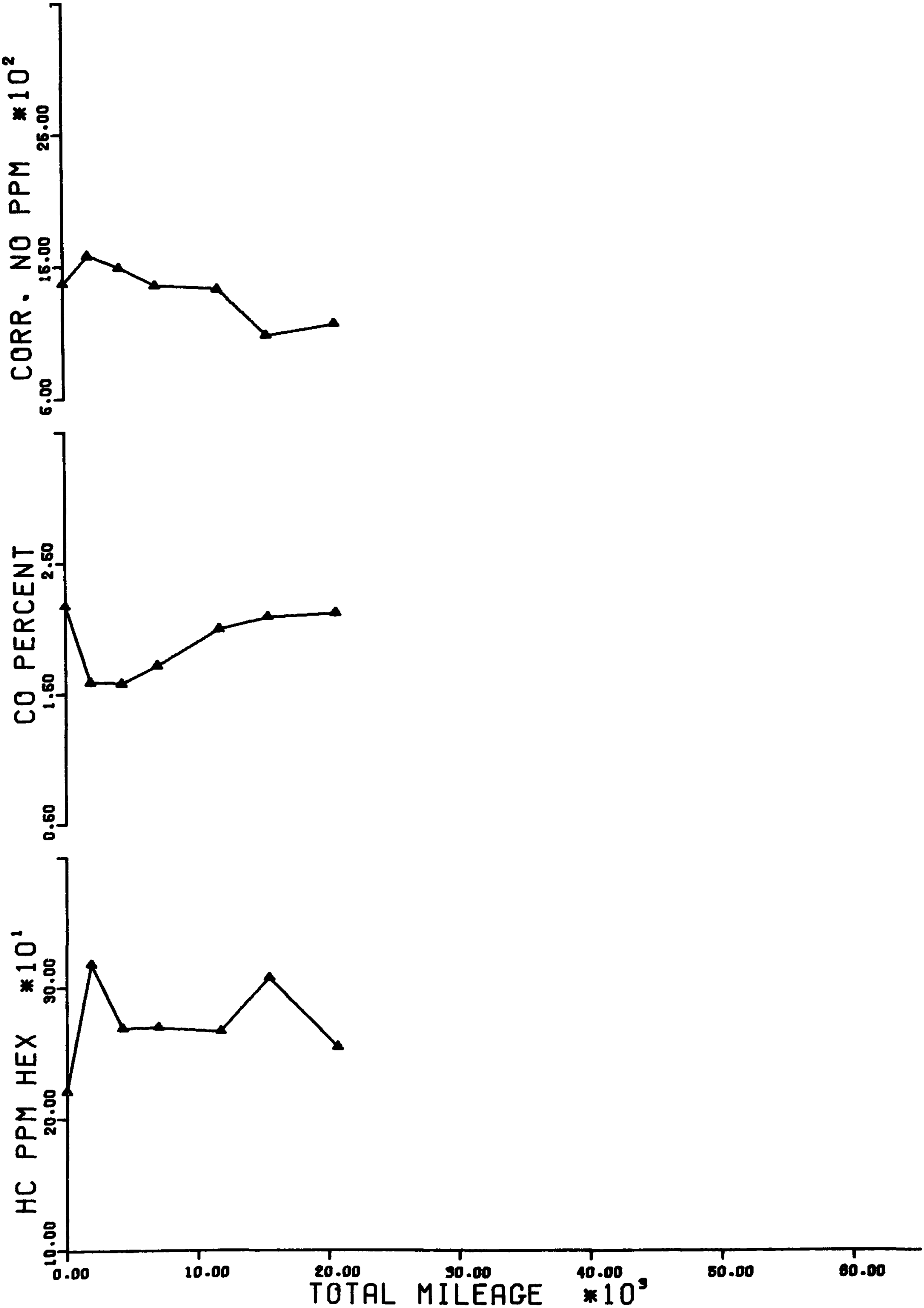



FIGURE E-120. UNIT 120 70 DODGE 10000 LB GVW MAIL 318 CID V8 ENGINE

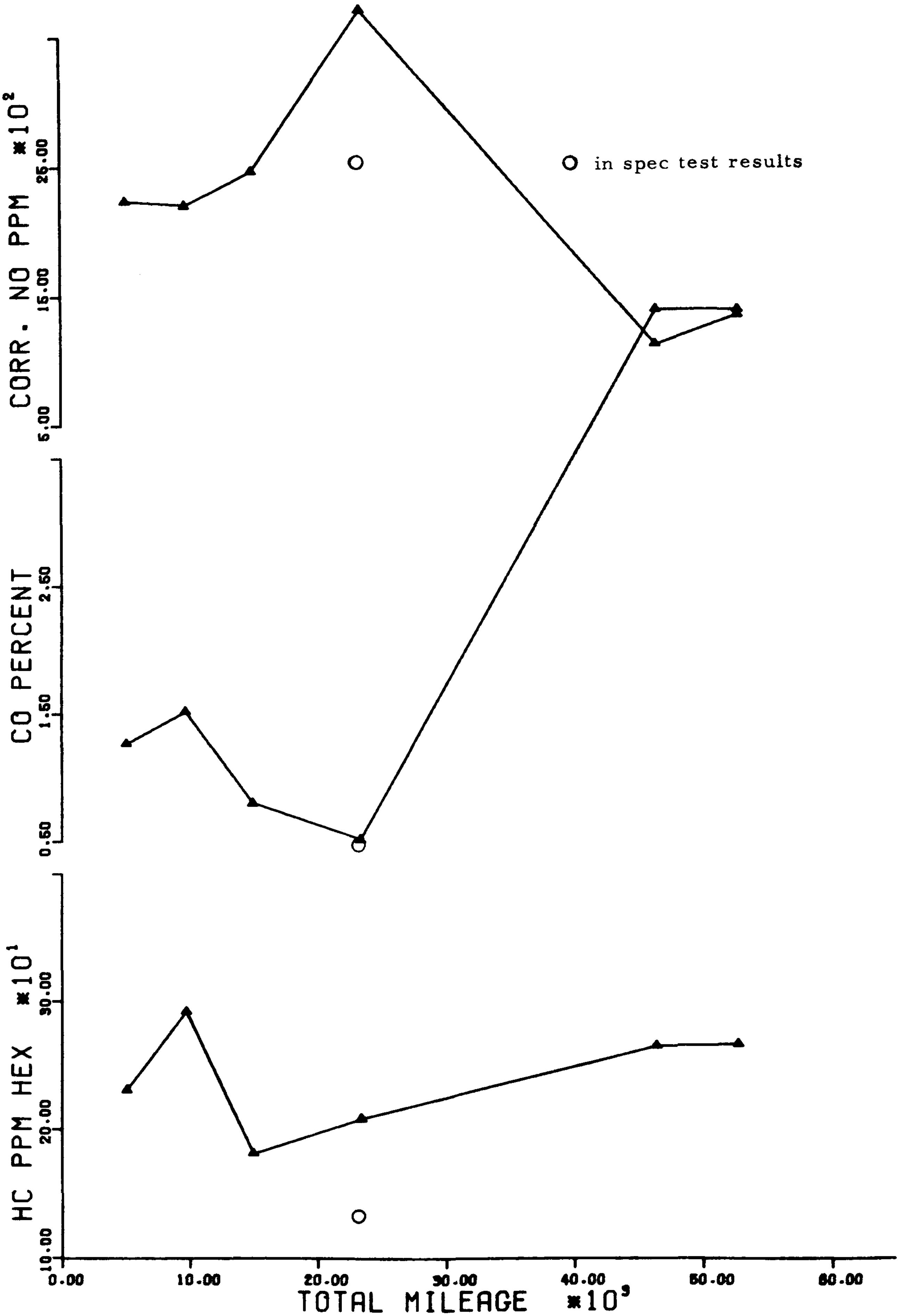



FIGURE E-121. UNIT 121 70 GMC 10000 LB GVW DELIVERY 292 CID I6 ENGINE

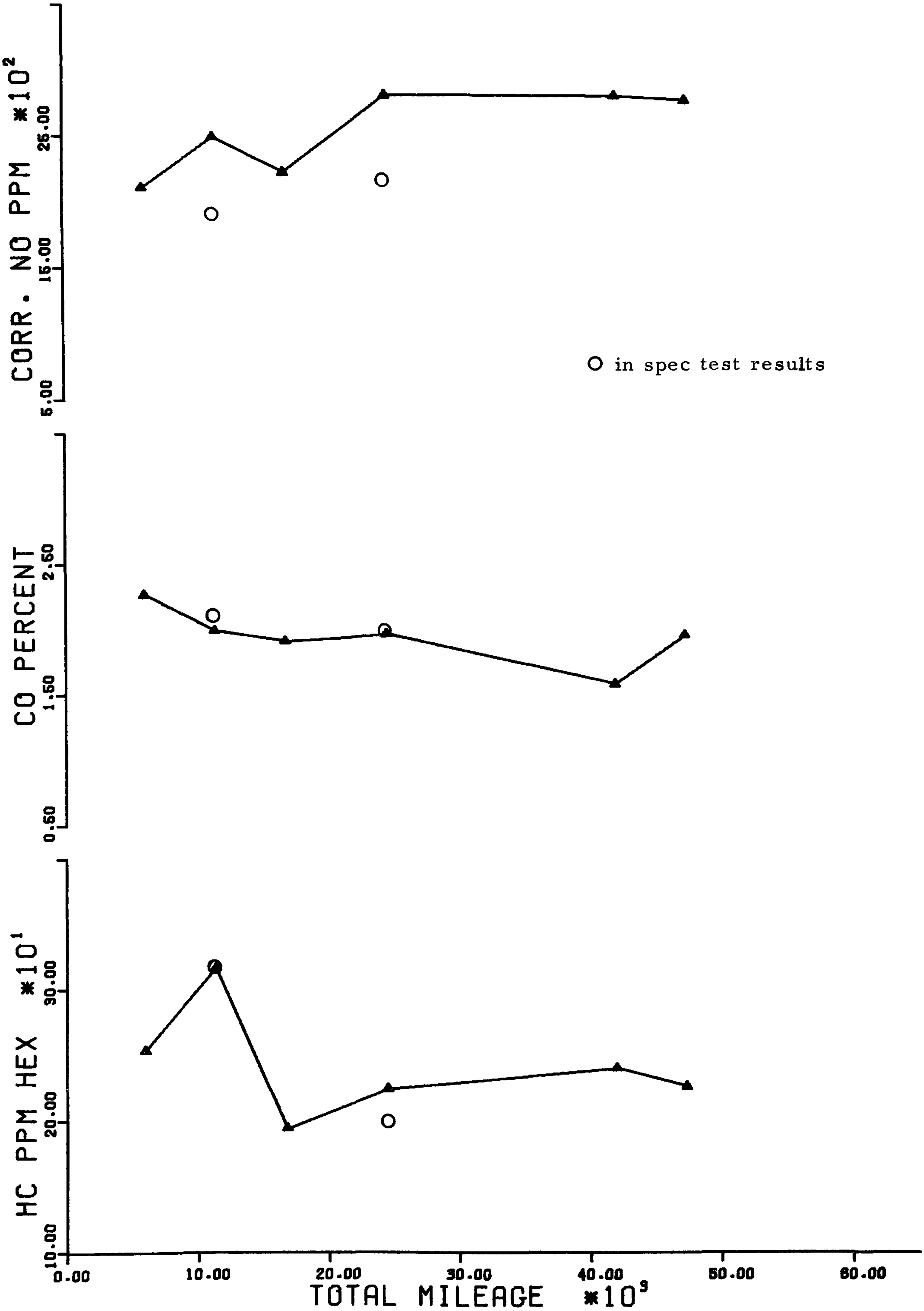



FIGURE E-122. UNIT 122 70 GMC 10000 LB GVW DELIVERY 292 CID I6 ENGINE

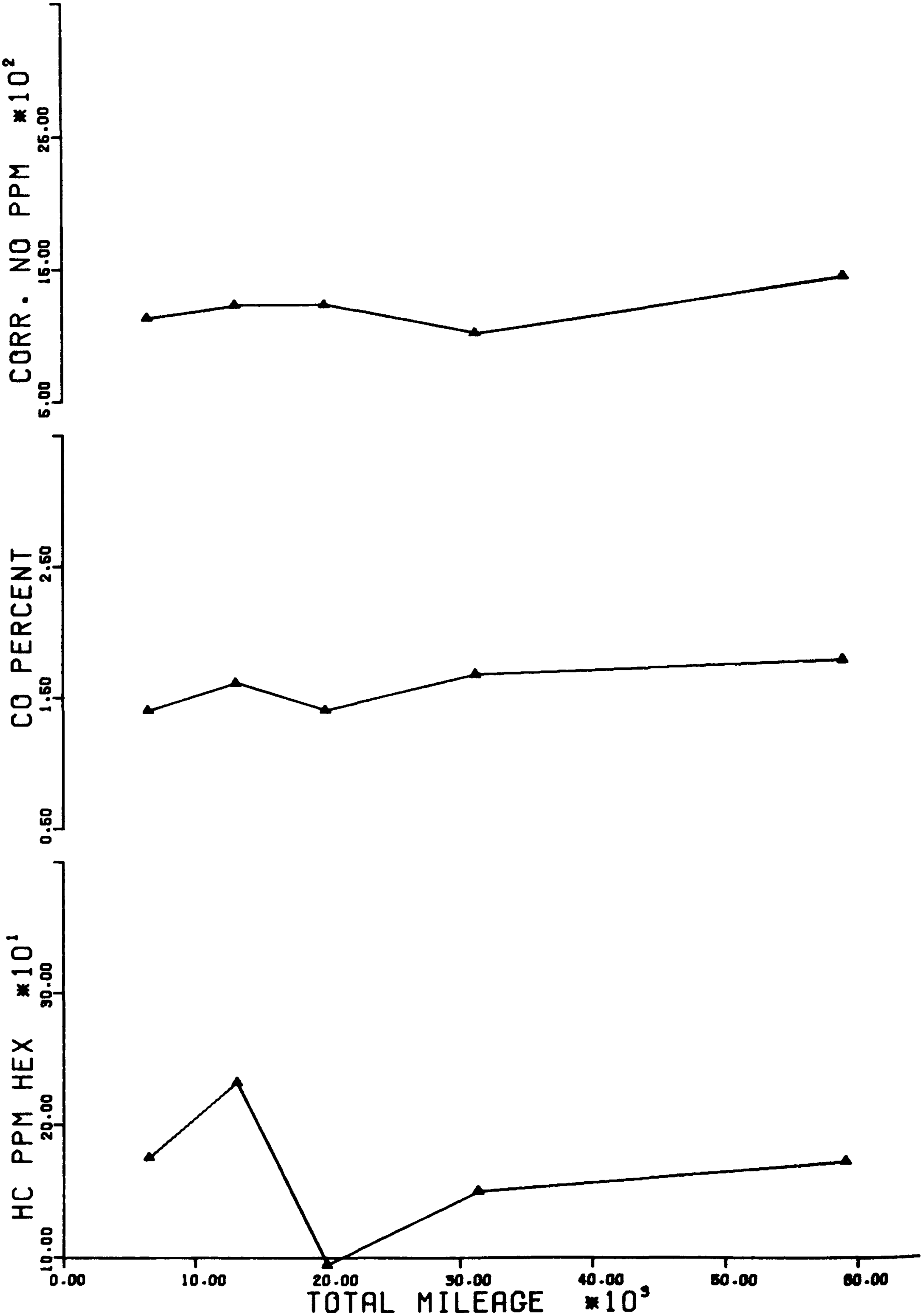



FIGURE E-123. UNIT 123 70 GMC 10000 LB GVW DELIVERY 292 CID I6 ENGINE

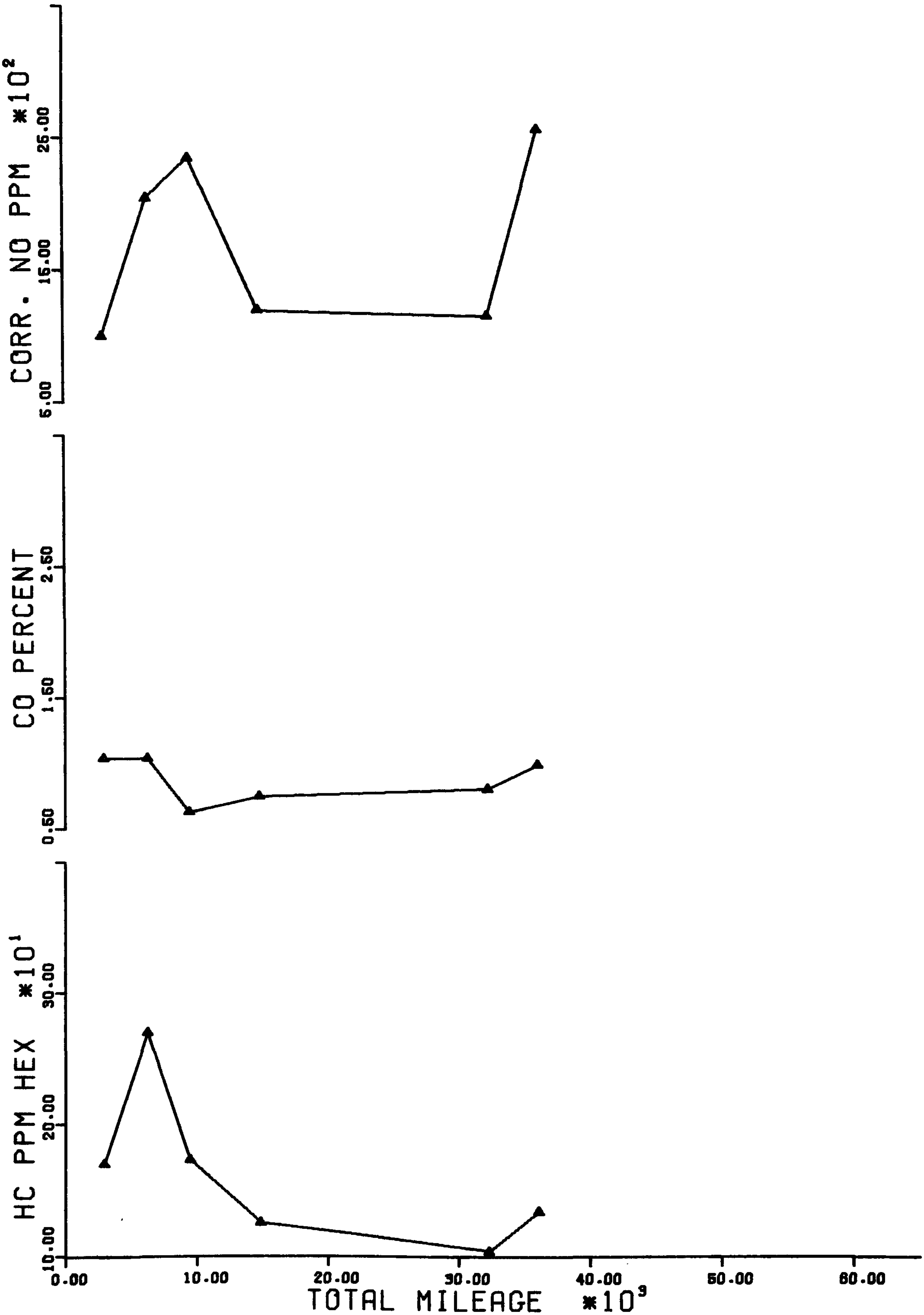



FIGURE E-124. UNIT 124 70 GMC 10000 LB GVW DELIVERY 292 CID I6 ENGINE

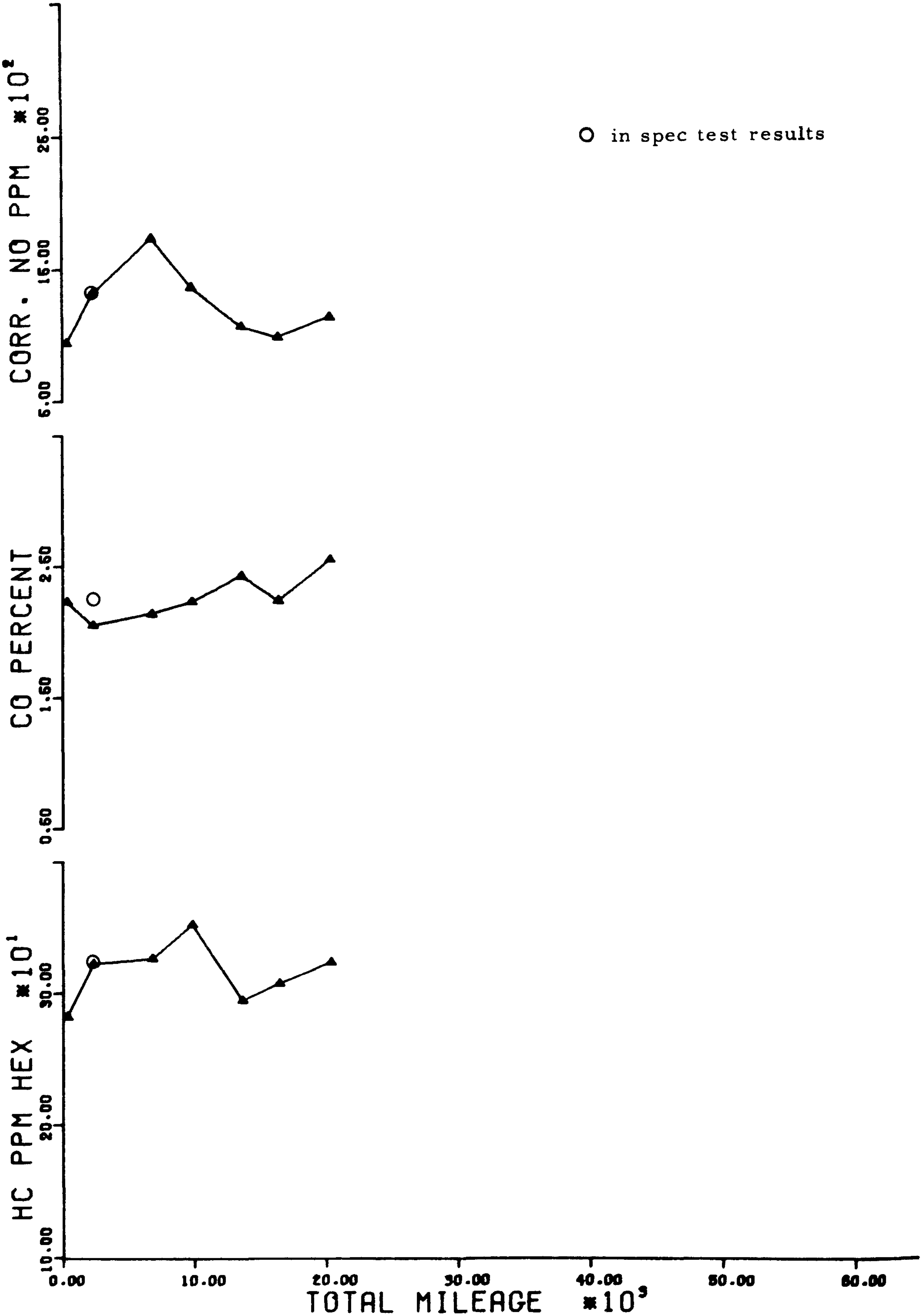



FIGURE E-125. UNIT 125 70 DODGE 7000 LB GVW DELIVERY 318 CID V8 ENGINE

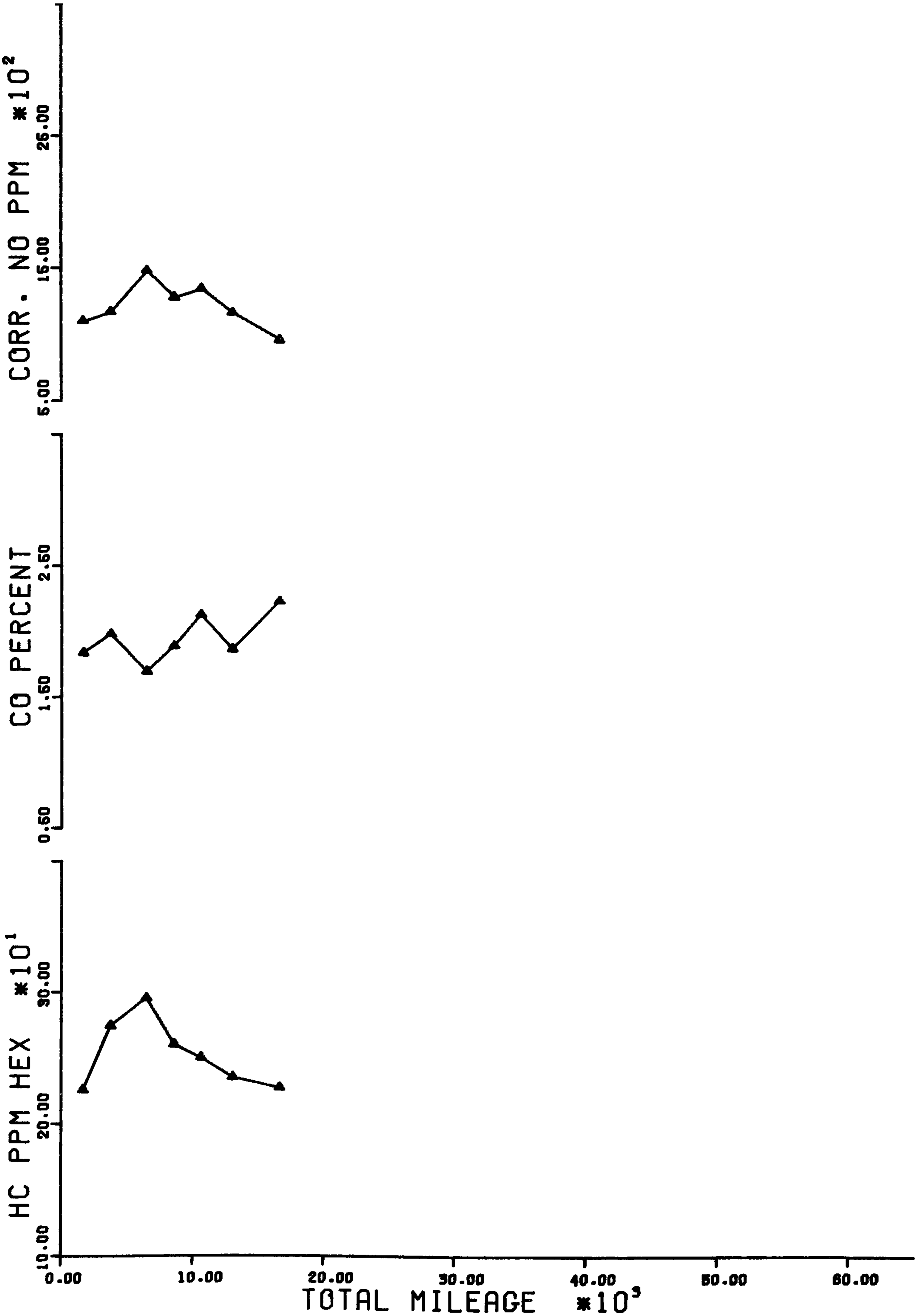



FIGURE E-126. UNIT 126 70 DODGE 7000 LB GVW DELIVERY 318 CID V8 ENGINE

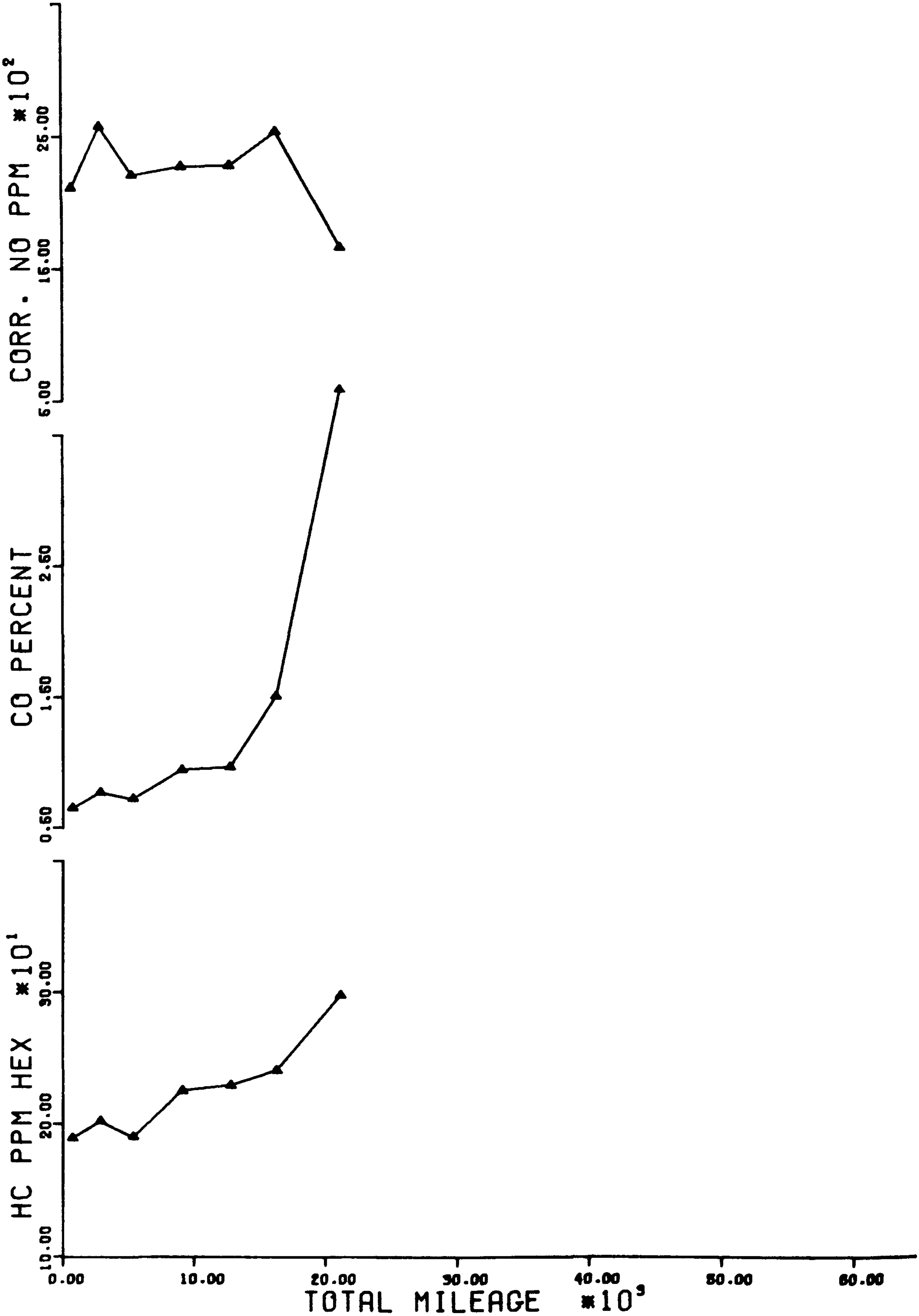



FIGURE E-127. UNIT 127 71 FORD 27500 LB GVW DELIVERY 391 CID V8 ENGINE

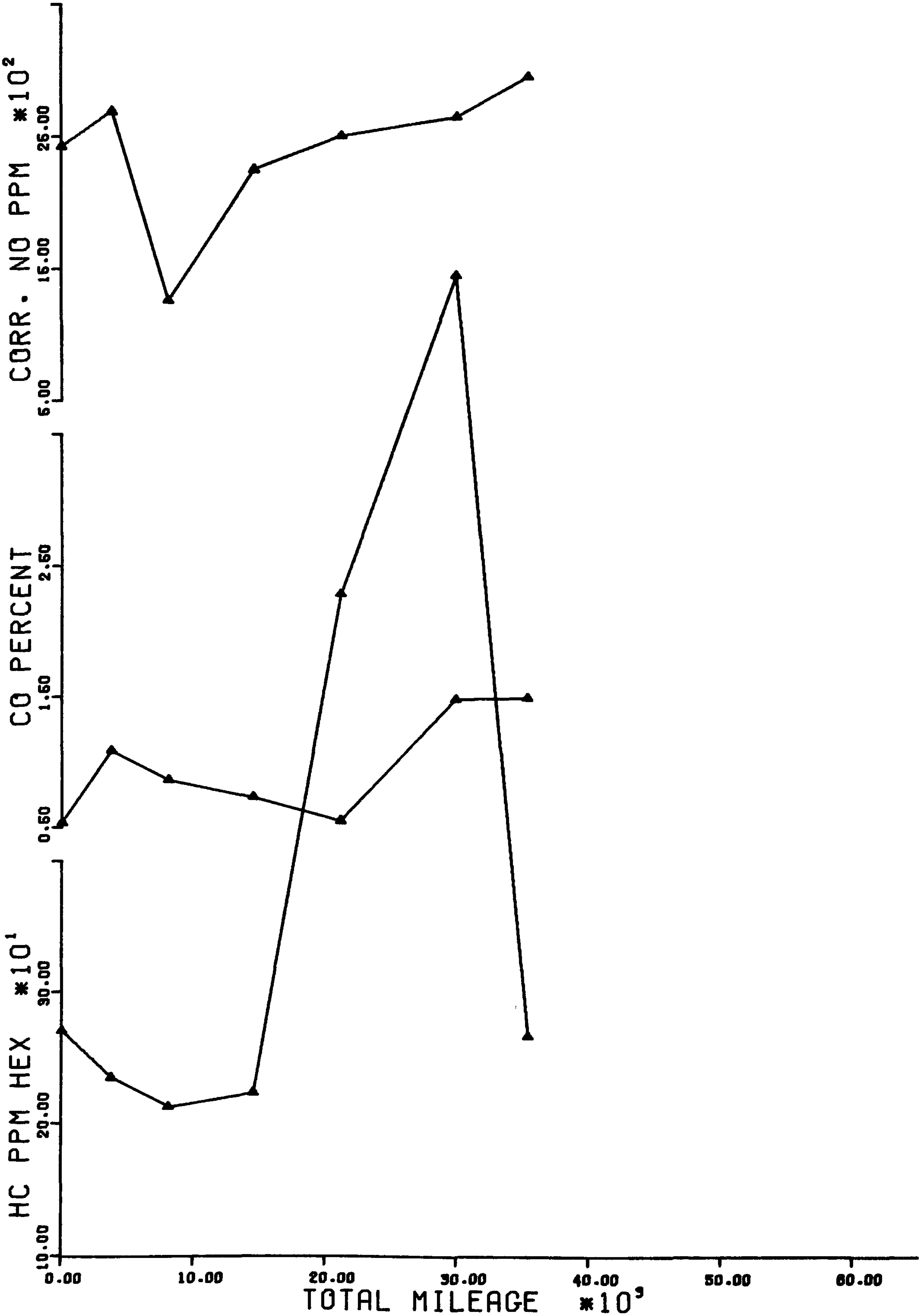



FIGURE E-128. UNIT 128 71 FORD 27500 LB GVW DELIVERY 391 CID V8 ENGINE

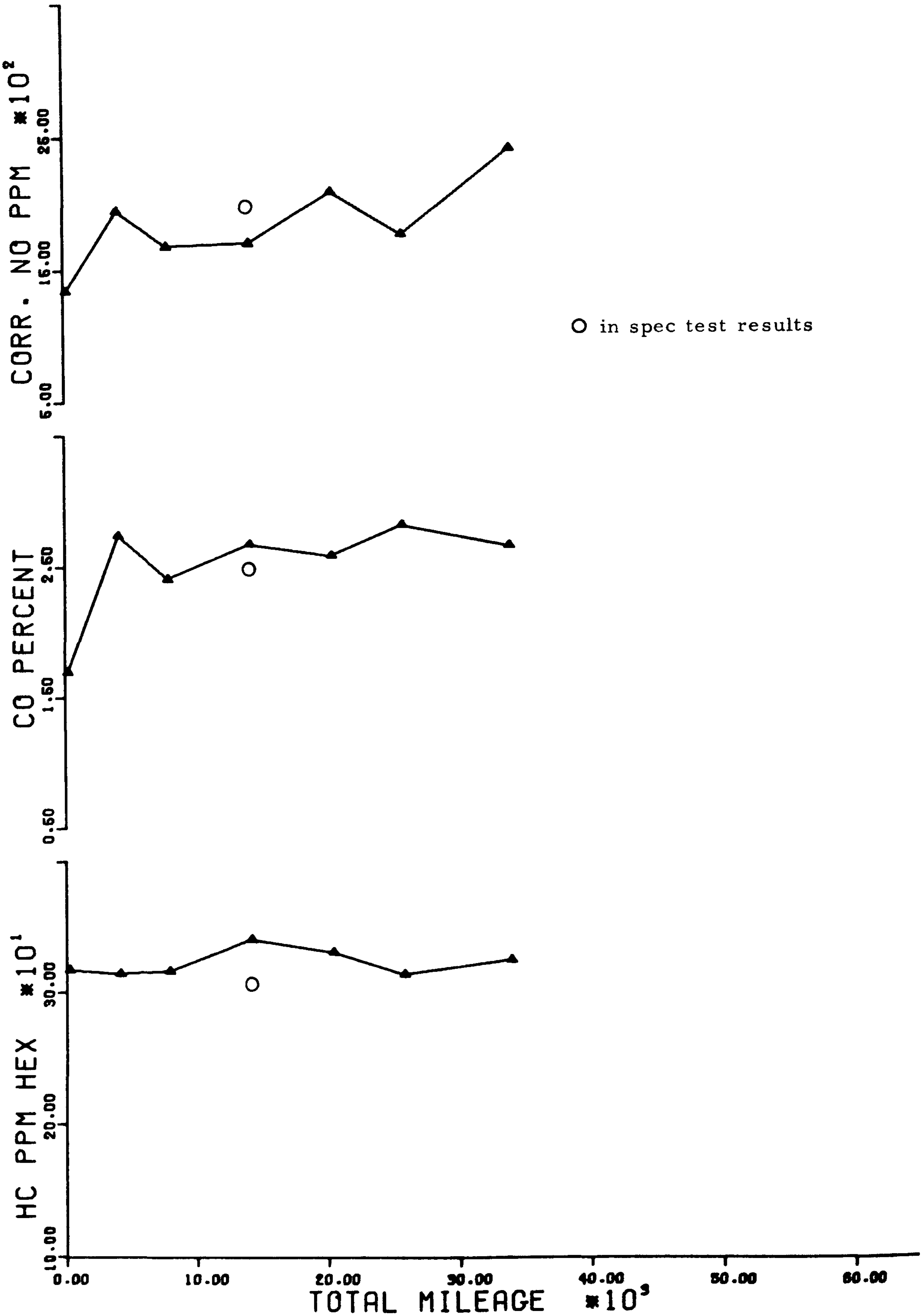



FIGURE E-129. UNIT 129 71 FORD 27500 LB GVW DELIVERY 391 CID V8 ENGINE

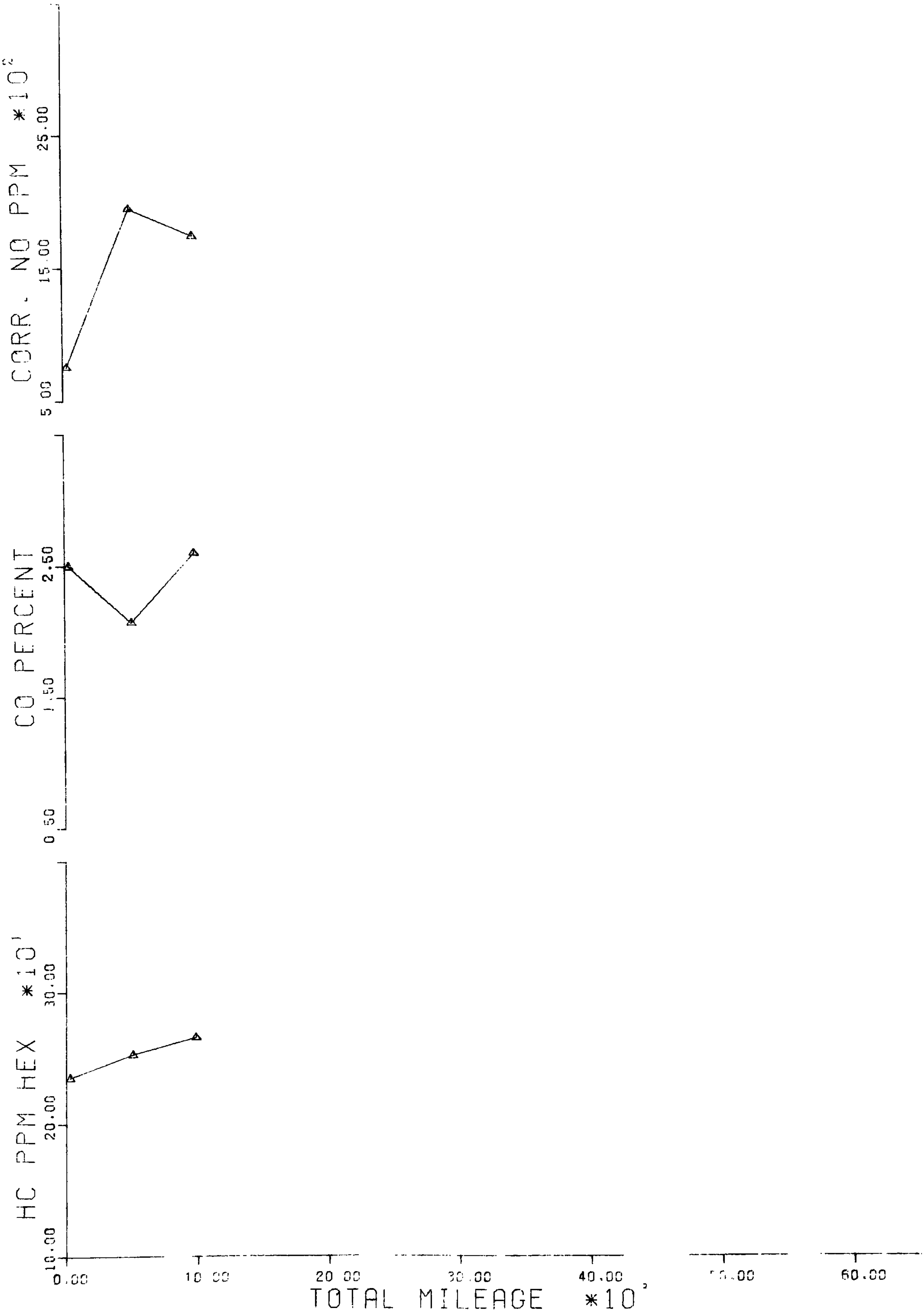



FIGURE E-130. UNIT 130 71 IHC 34000 LB GVW GARBAGE 392 CID V8 ENGINE

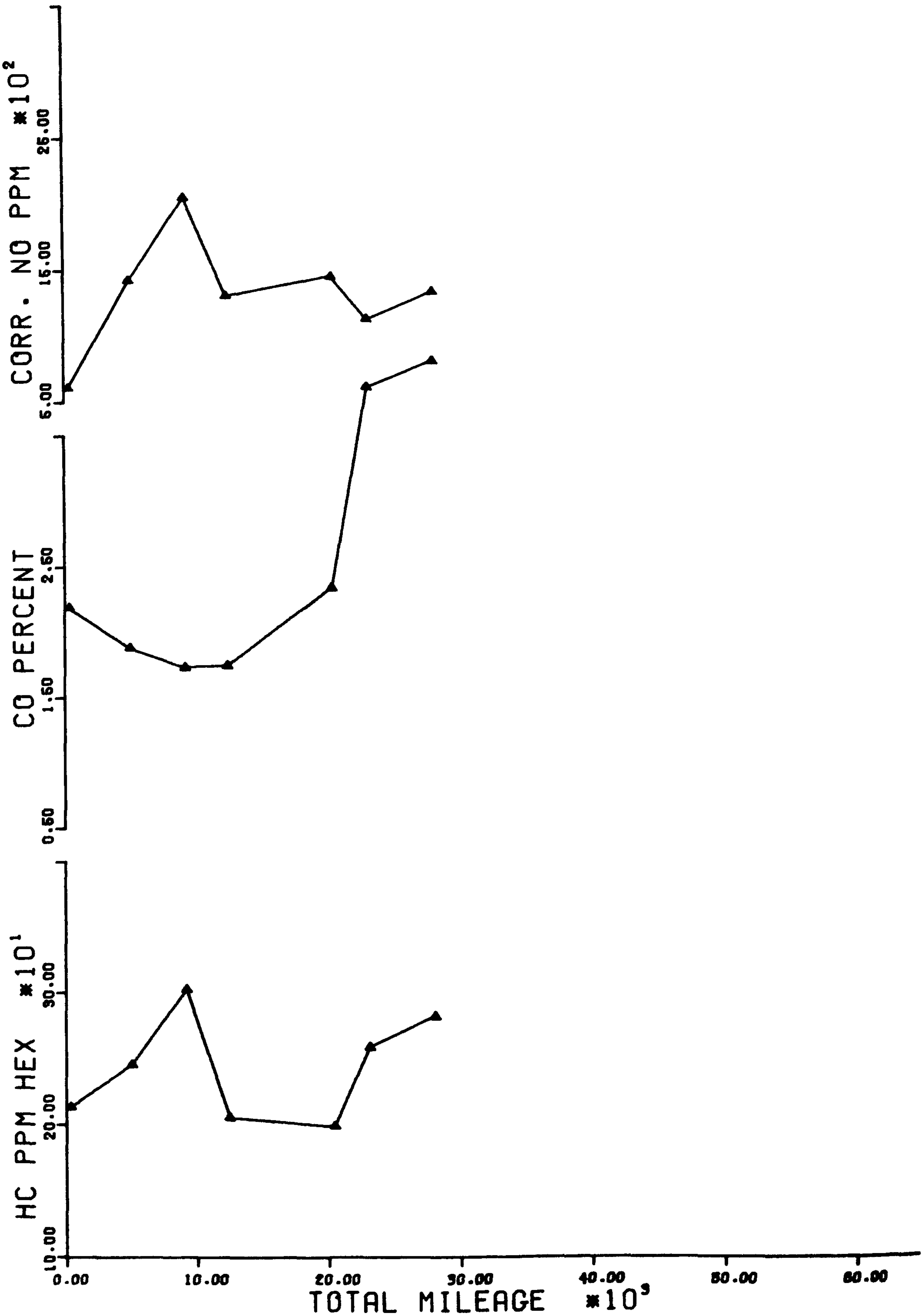



FIGURE E-131. UNIT 131 71 IHC 34000 LB GVW GARBAGE 392 CID V8 ENGINE

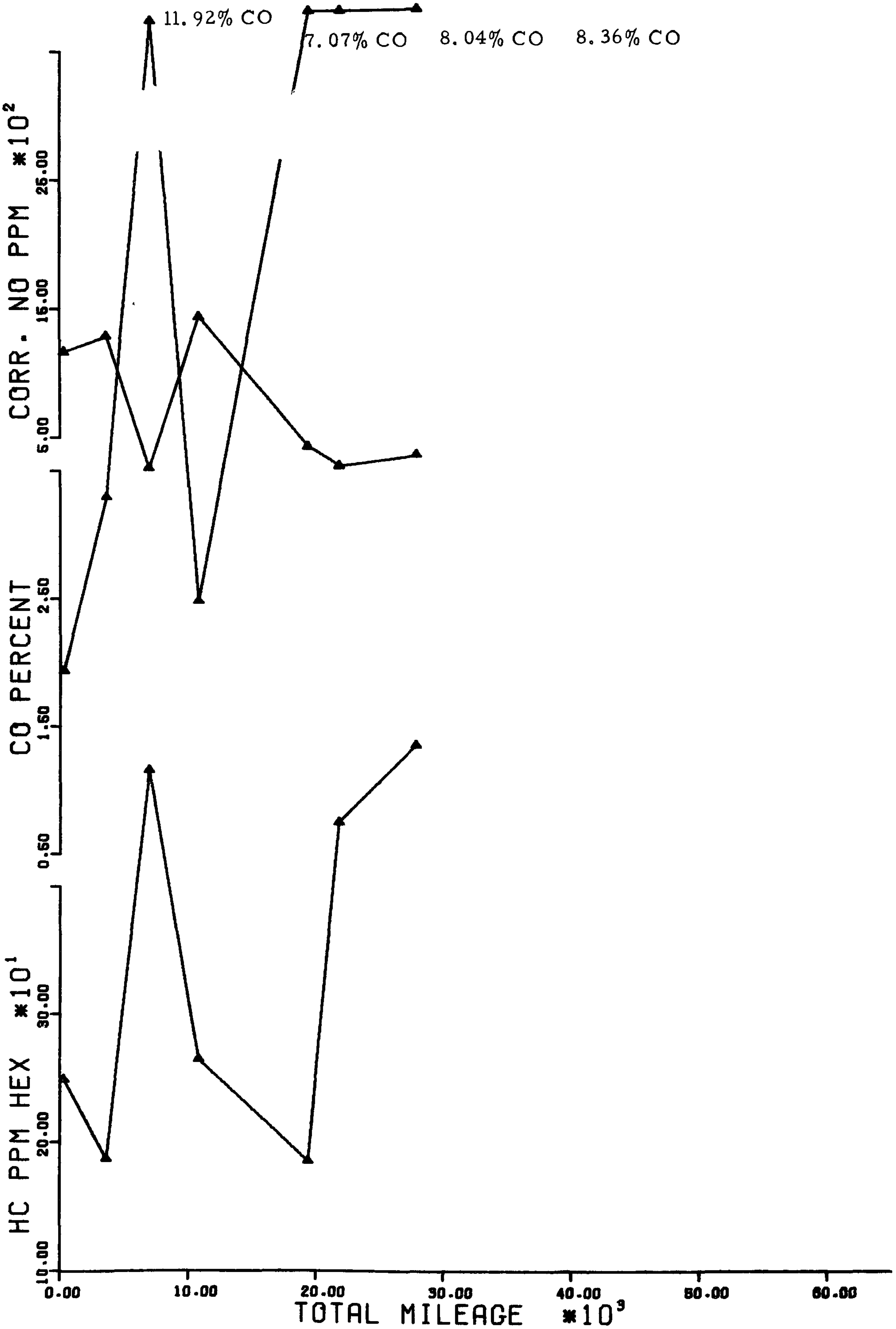



FIGURE E-132. UNIT 132 71 IHC 34000 LB GVW GARBAGE 392 CID V8 ENGINE

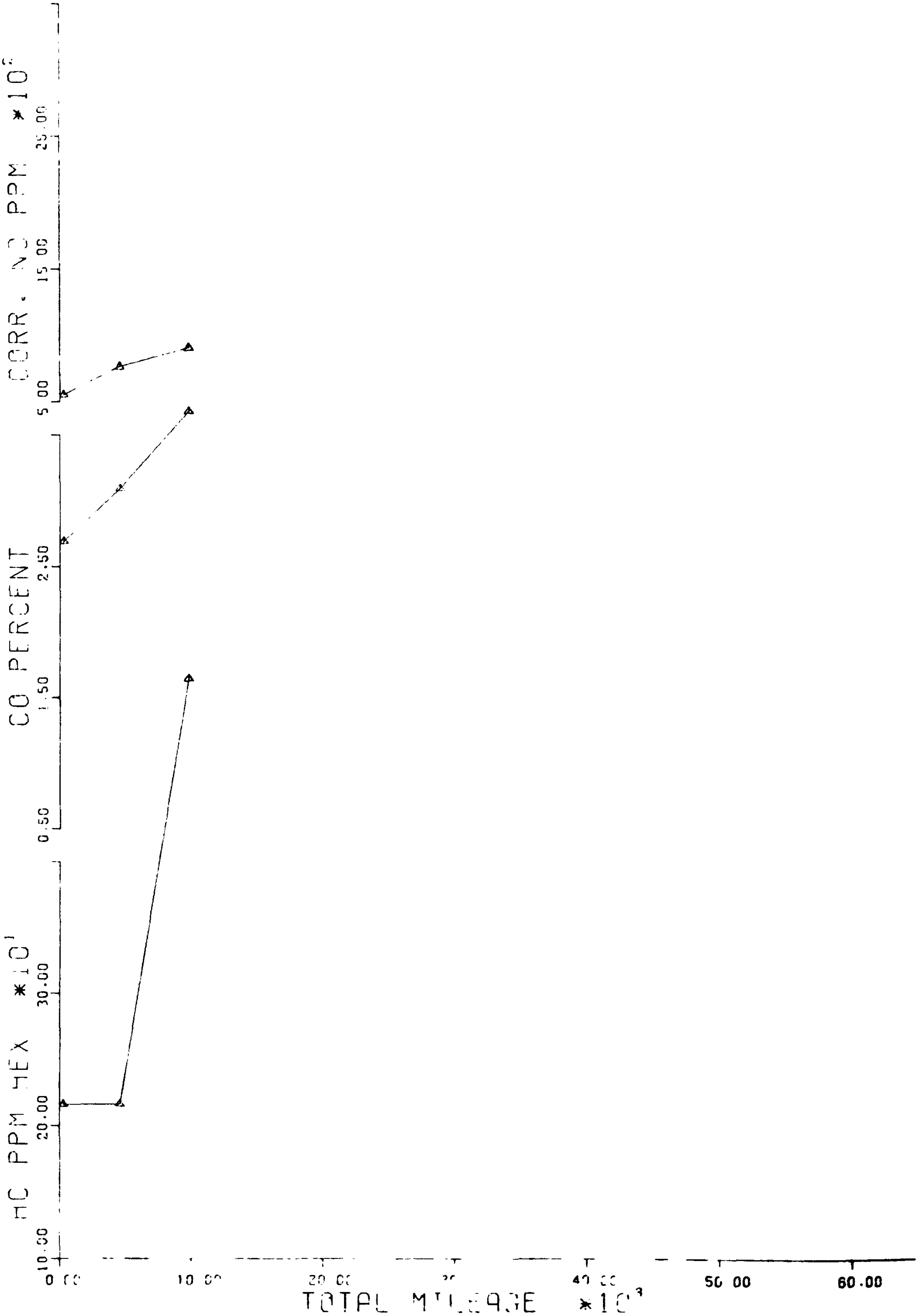



FIGURE E-133. UNIT 1[illegible] 71 IHC [illegible]4000 LB GVW GARBAGE 392 CID V8 ENGINE

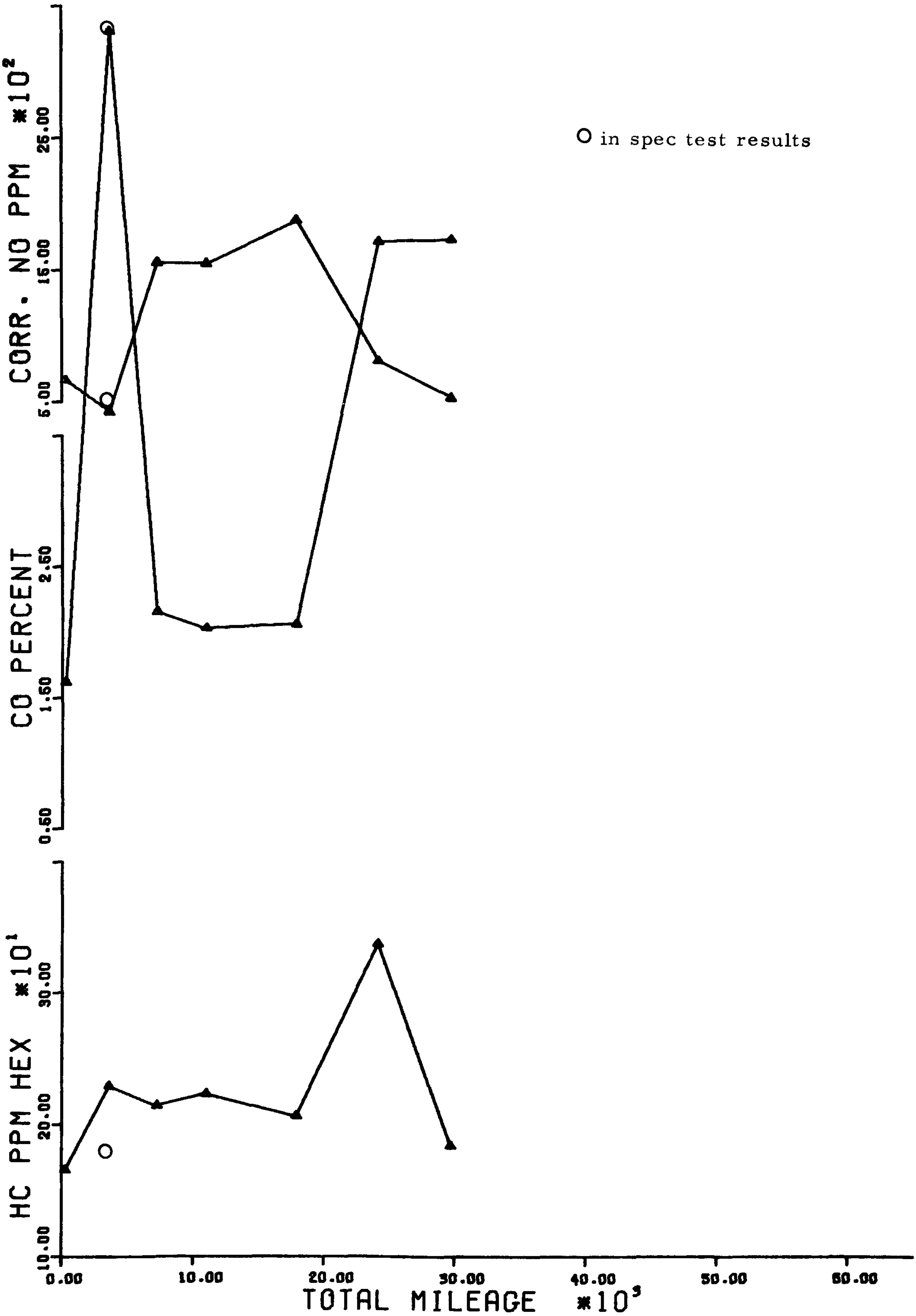



FIGURE E-134. UNIT 134 71 IHC 34000 LB GVW GARBAGE 392 CID V8 ENGINE

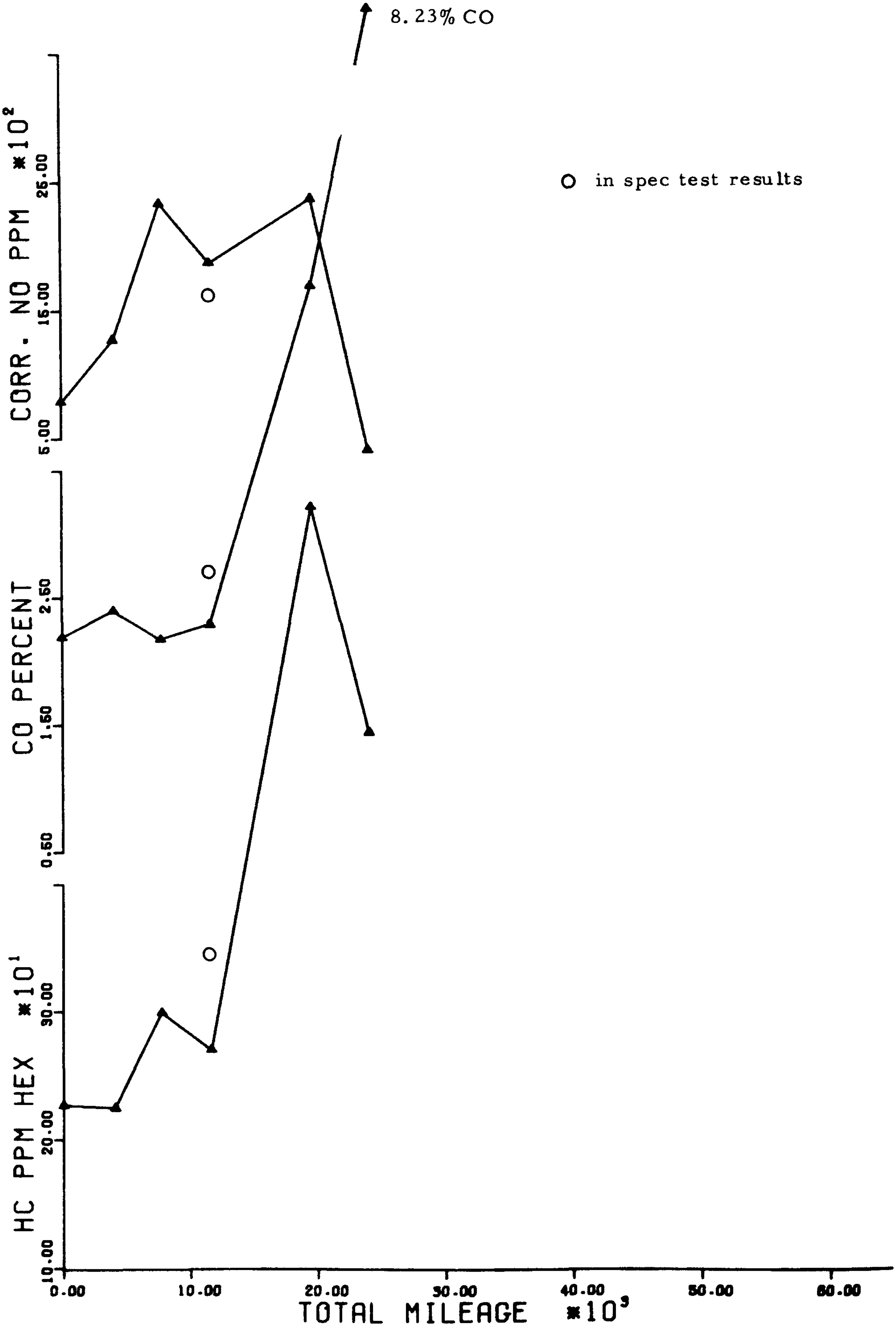



FIGURE E-135. UNIT 135 71 IHC 34000 LB GVW GARBAGE 392 CID V8 ENGINE

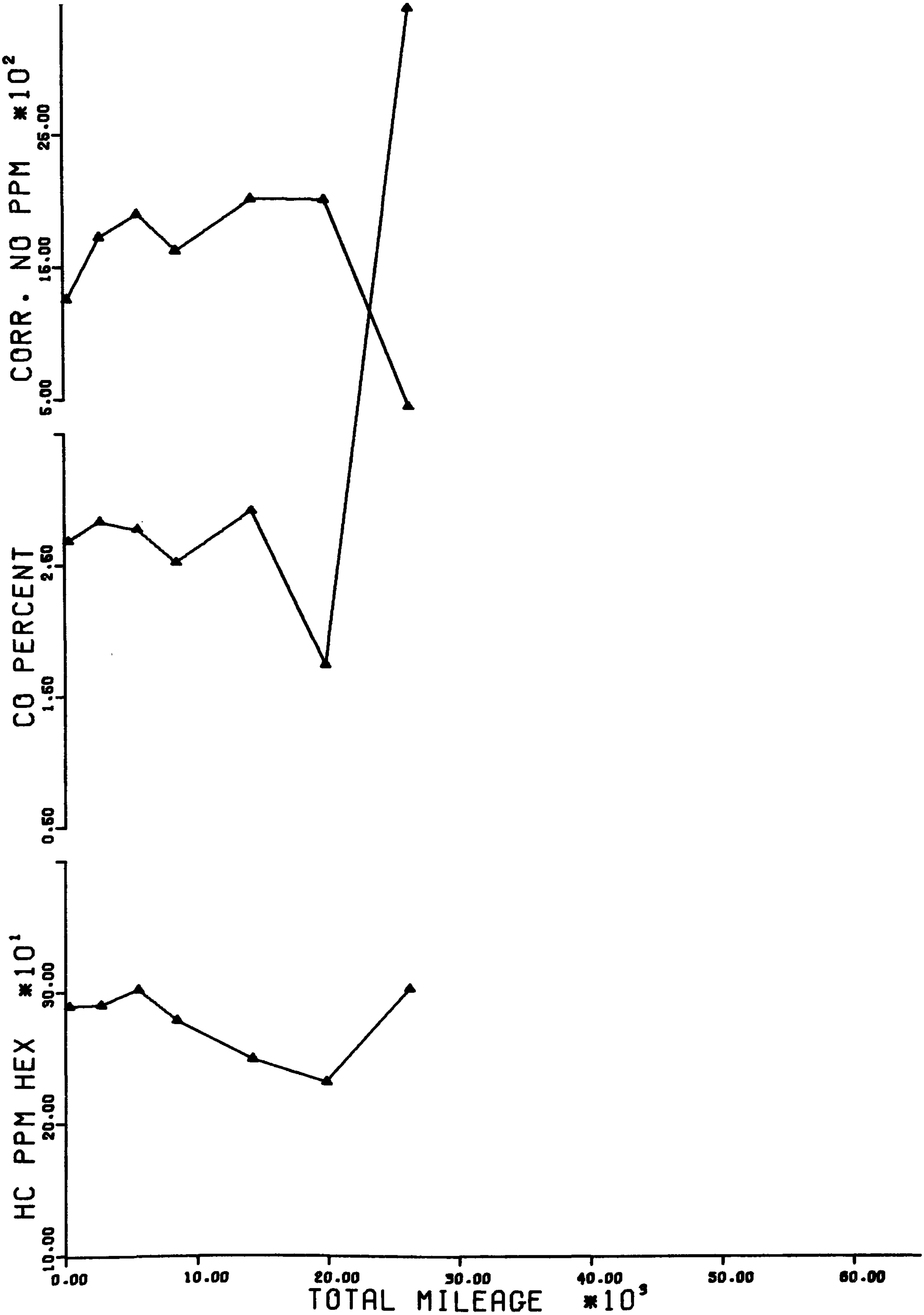



FIGURE E-136. UNIT 136 71 IHC 34000 LB GVW GARBAGE 392 CID V8 ENGINE

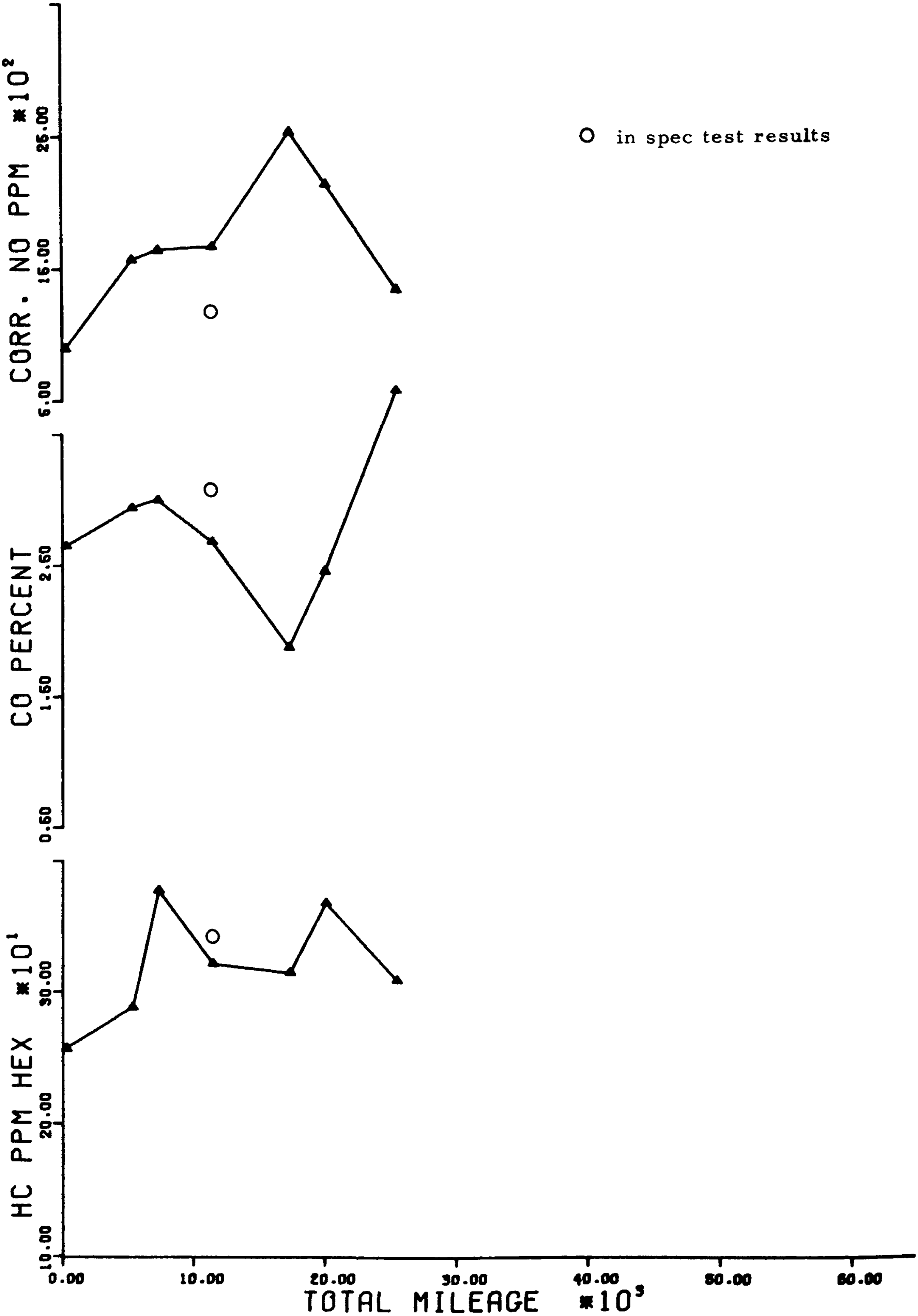



FIGURE E-137. UNIT 137 71 IHC 34000 LB GVW GARBAGE 392 CID V8 ENGINE

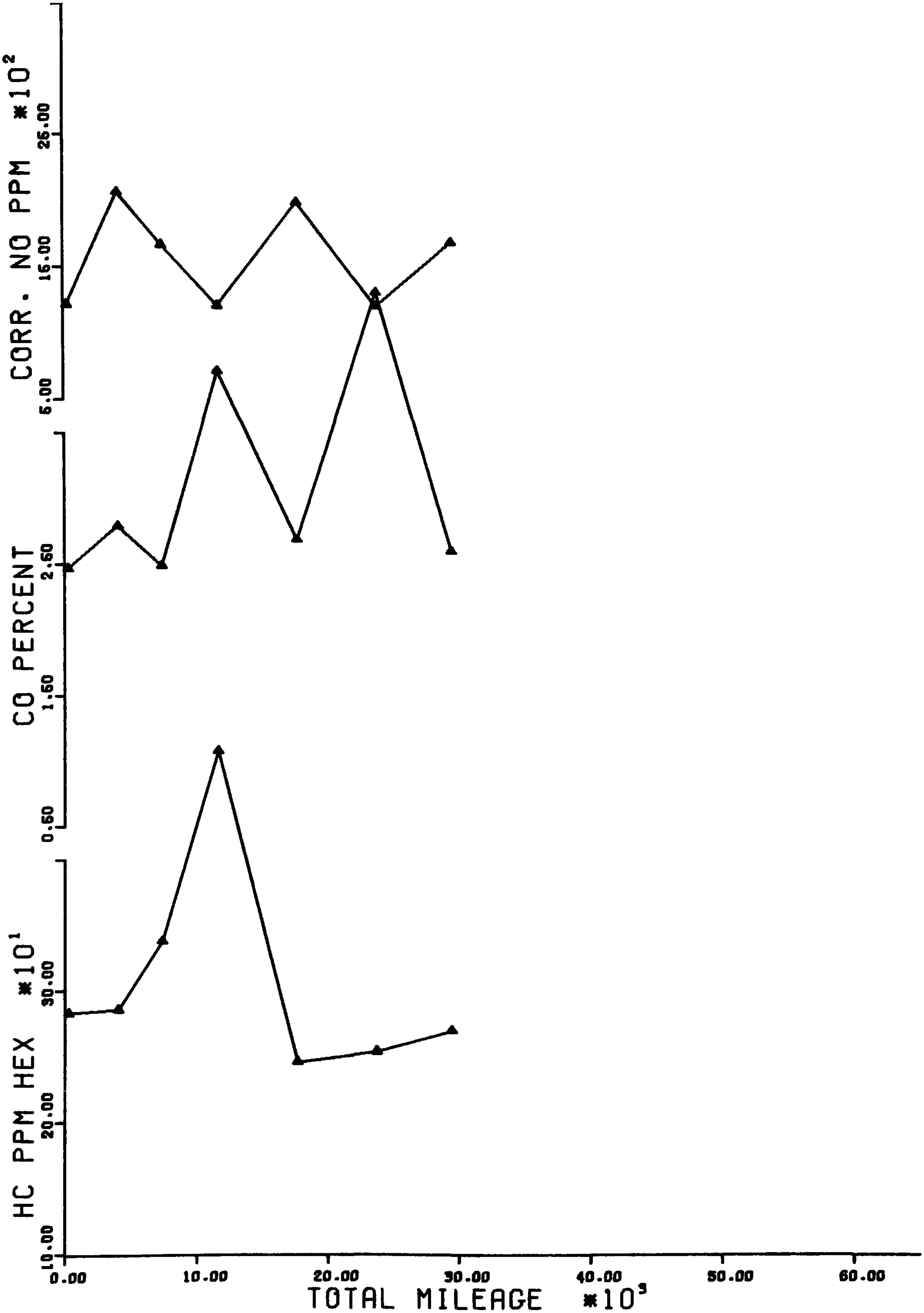



FIGURE E-138. UNIT 138 71 IHC 34000 LB GVW GARBAGE 392 CID V8 ENGINE

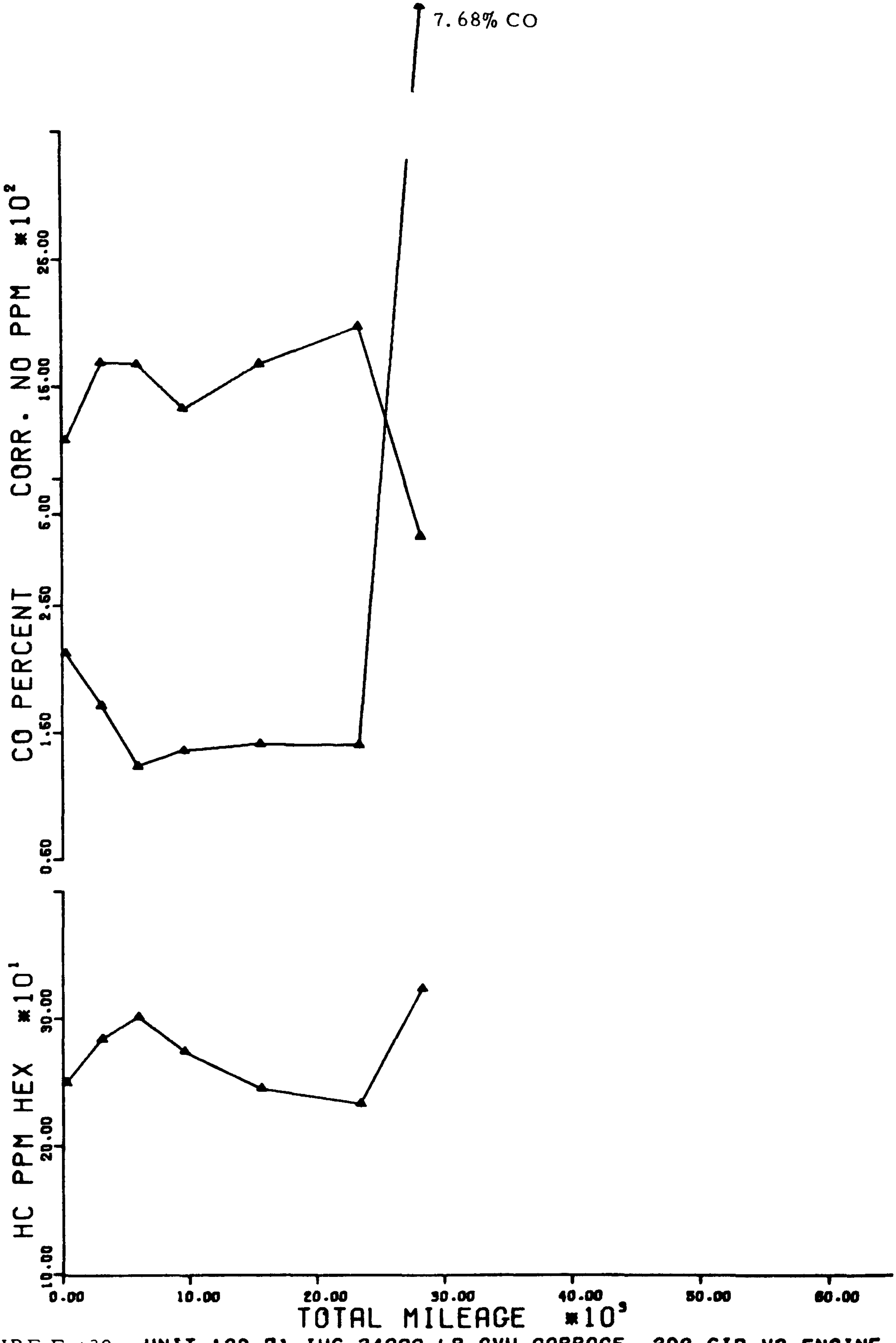



FIGURE E-139. UNIT 139 71 IHC 34000 LB GVW GARBAGE 392 CID V8 ENGINE

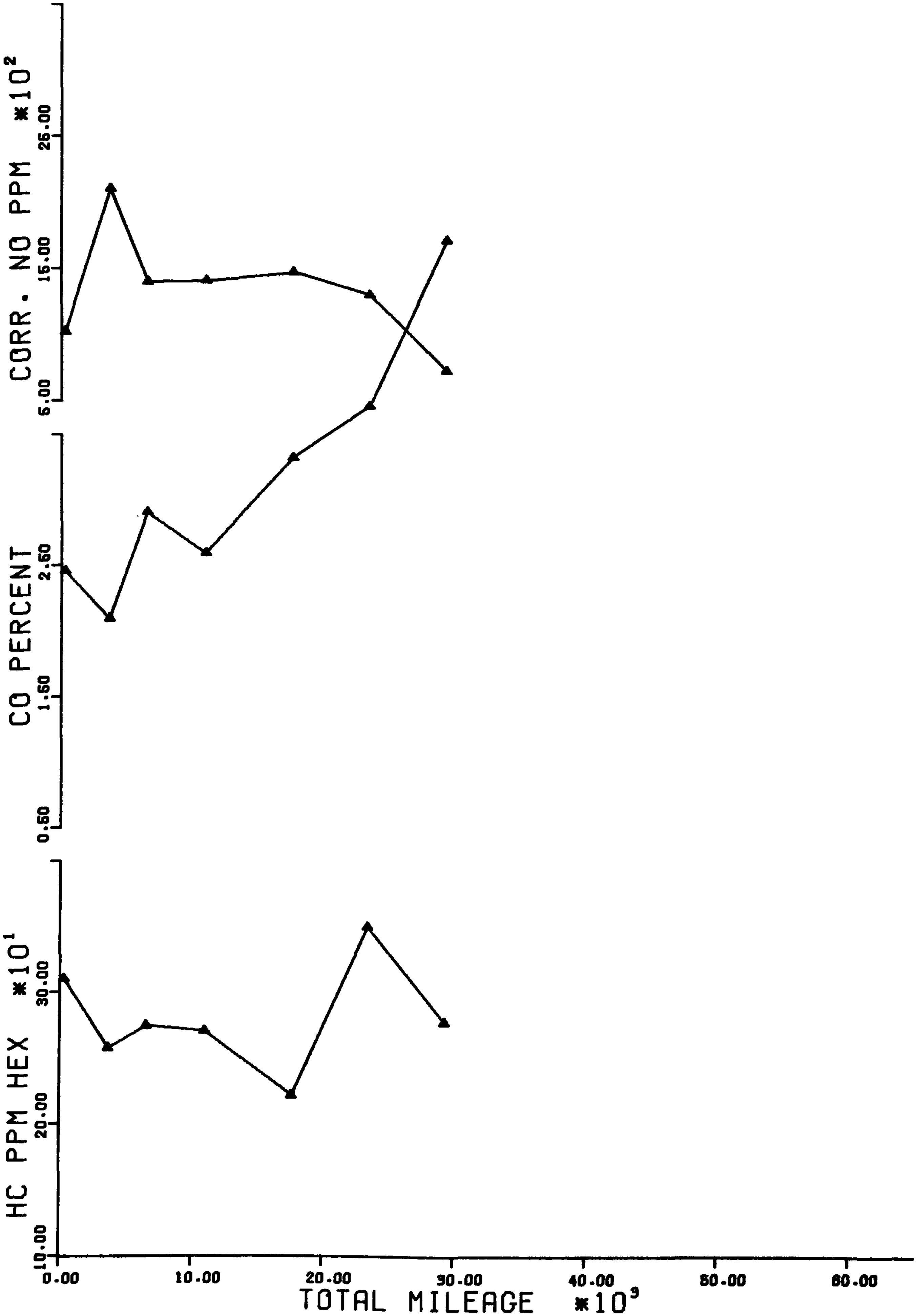



FIGURE E-140. UNIT 140 71 IHC 34000 LB GVW GARBAGE 392 CID V8 ENGINE

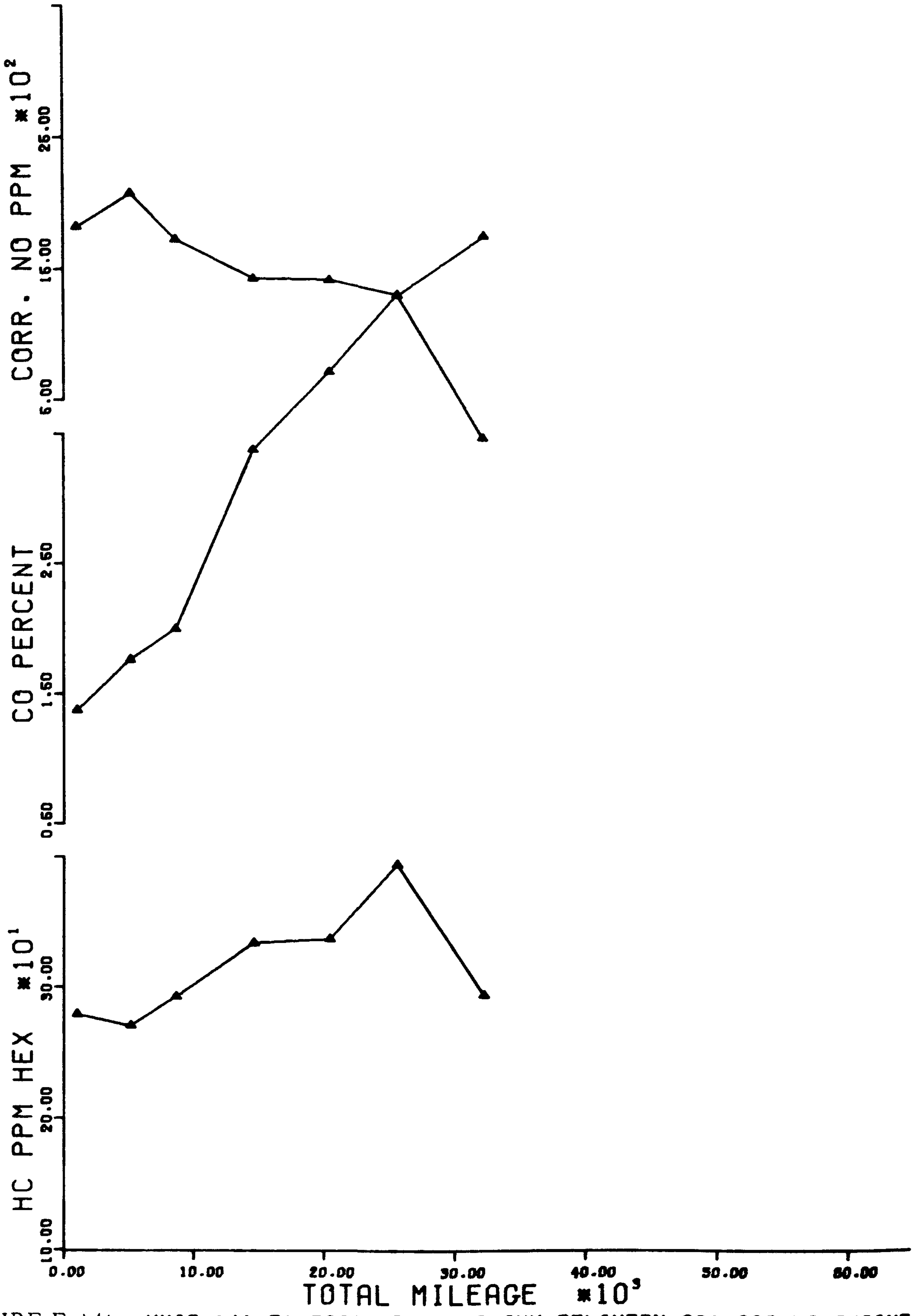



FIGURE E-141. UNIT 141 71 FORD 27500 LB GVW DELIVERY 391 CID V8 ENGINE

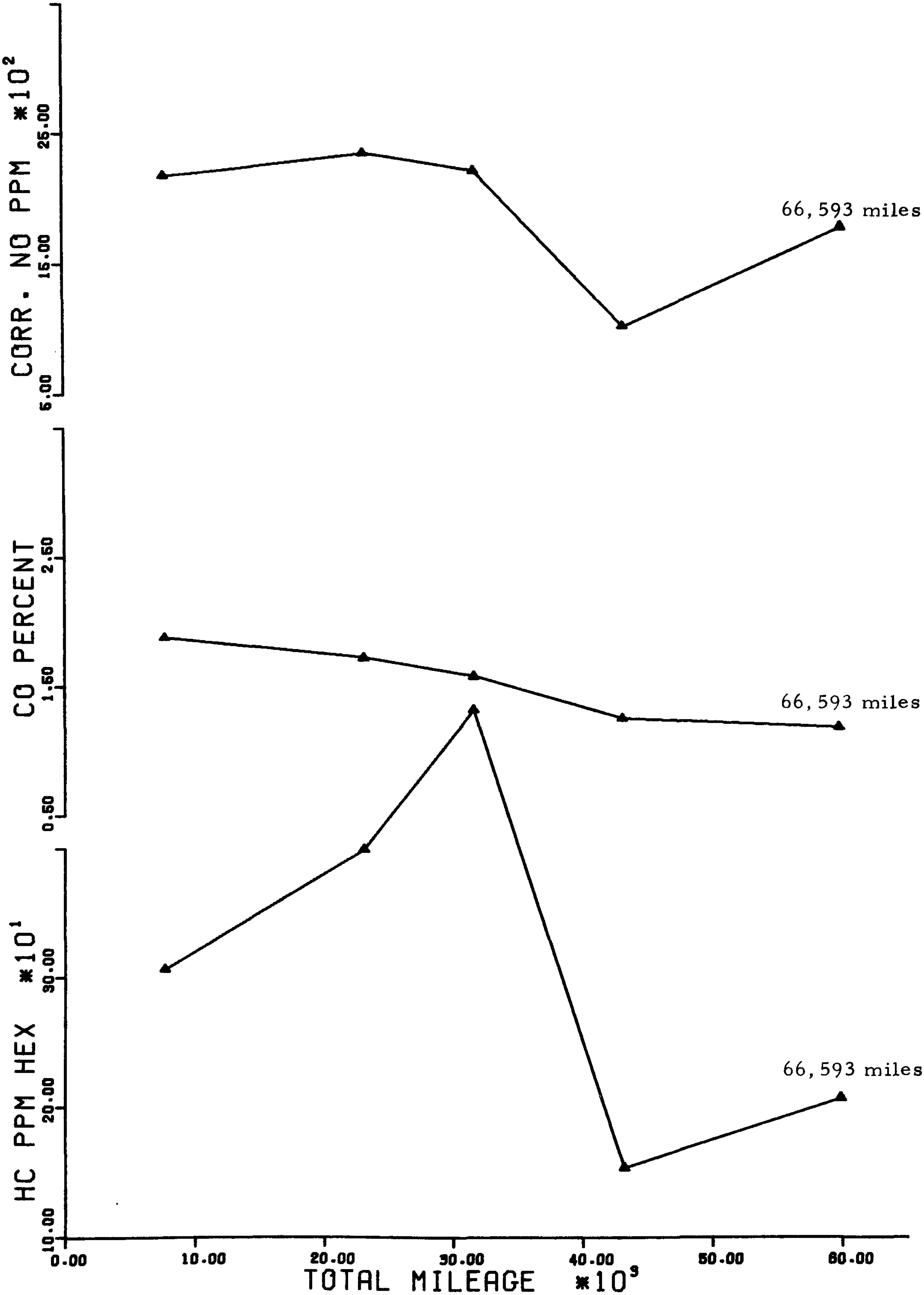



FIGURE E-142. UNIT 142 71 IHC 32000 LB GVW RENTAL 478 CID V8 ENGINE

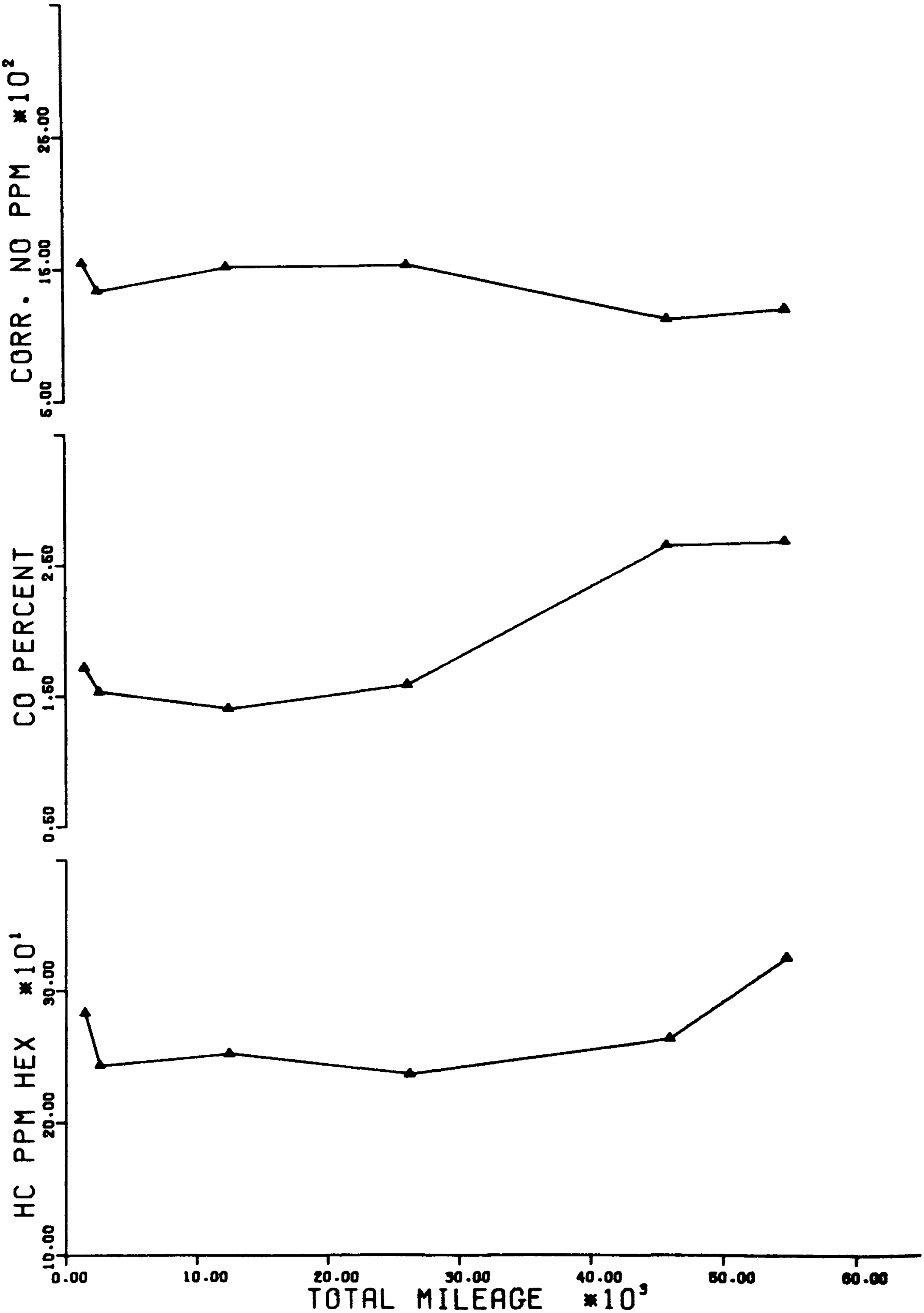



FIGURE E-143. UNIT 143 71 IHC 32000 LB GVW RENTAL 478 CID V8 ENGINE

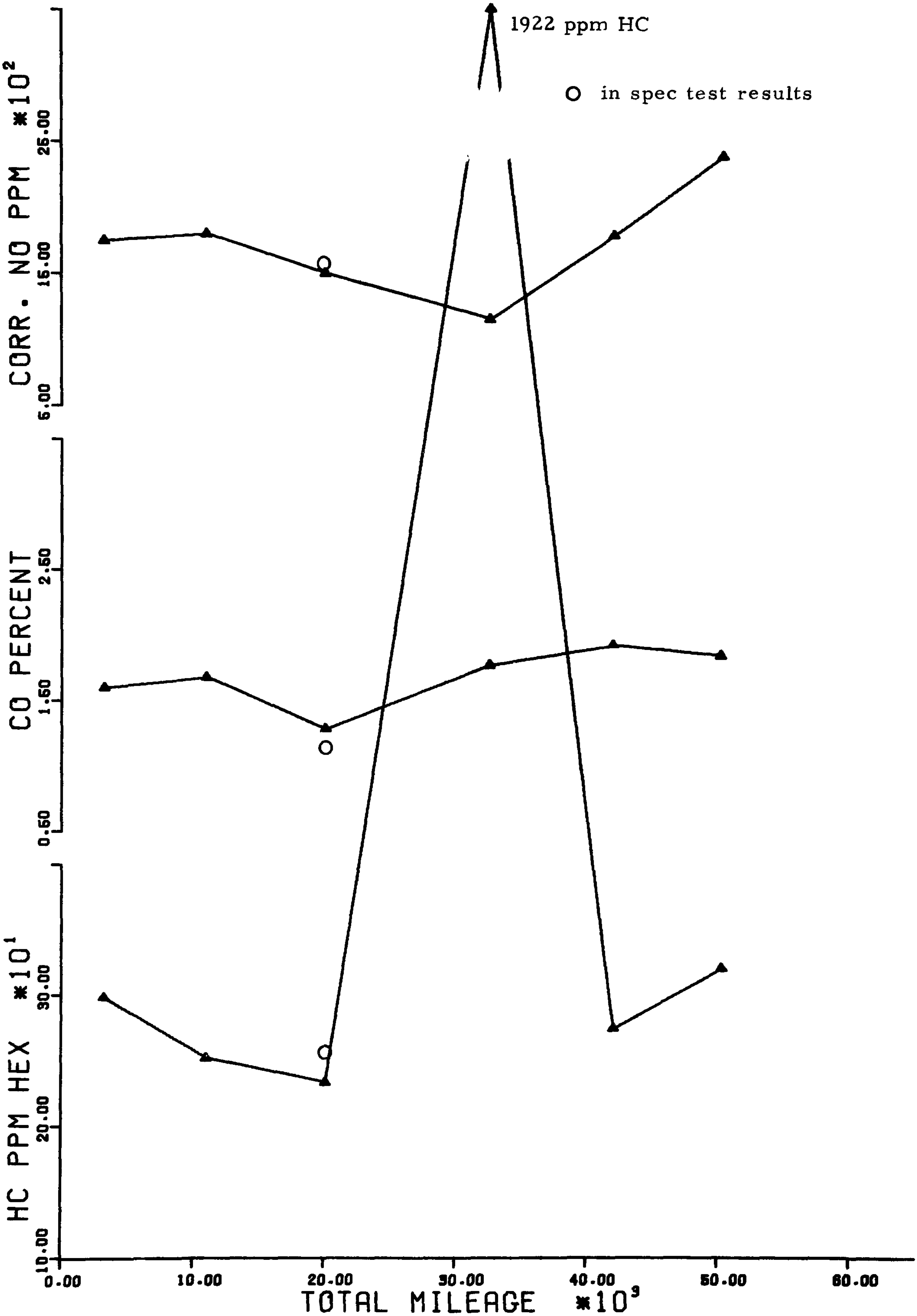



FIGURE E-144. UNIT 144 71 IHC 32000 LB GVW RENTAL 478 CID V8 ENGINE

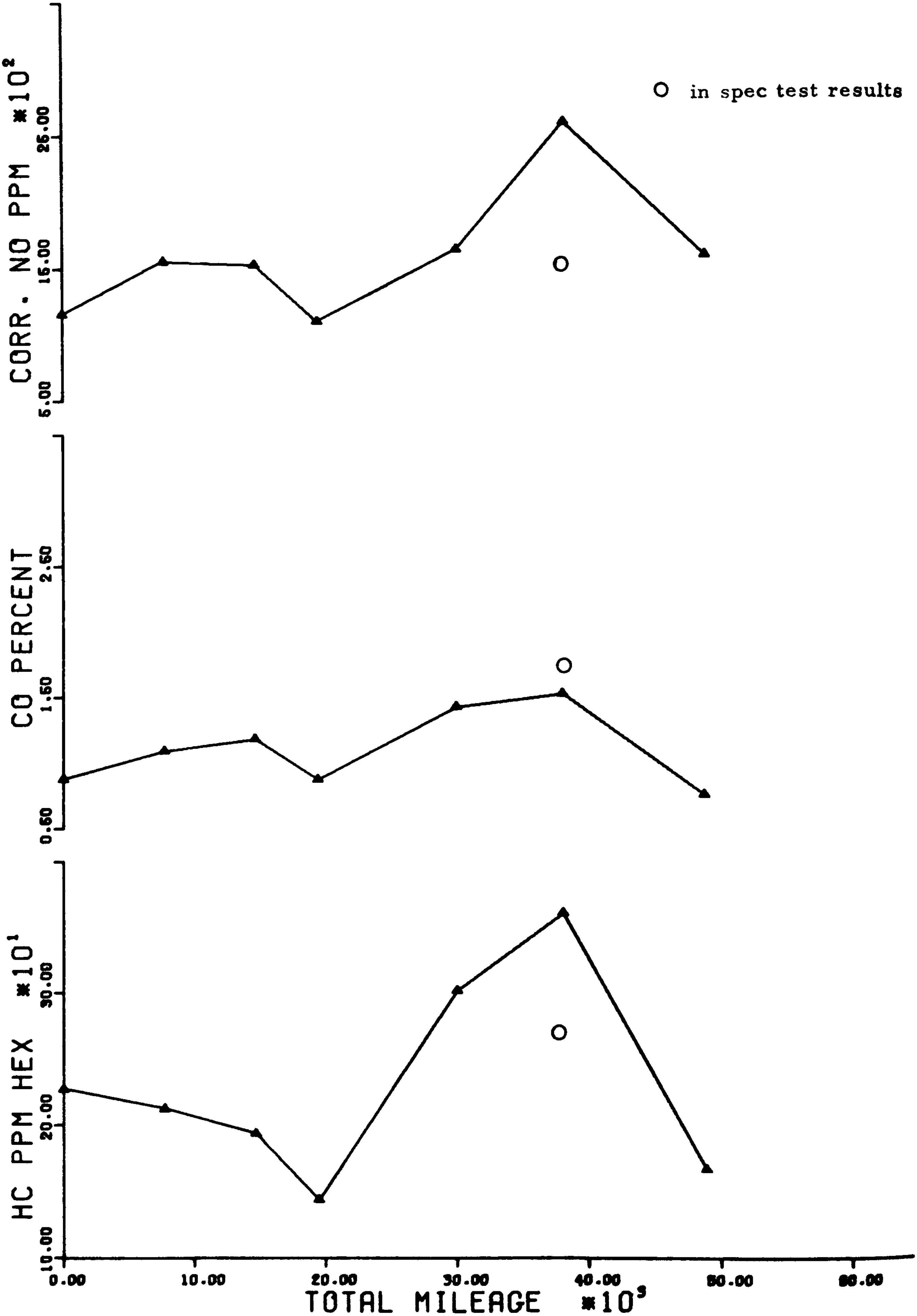



FIGURE E-145. UNIT 145 71 CHEV 24000 LB GVW DELIVERY 350 CID V8 ENGINE

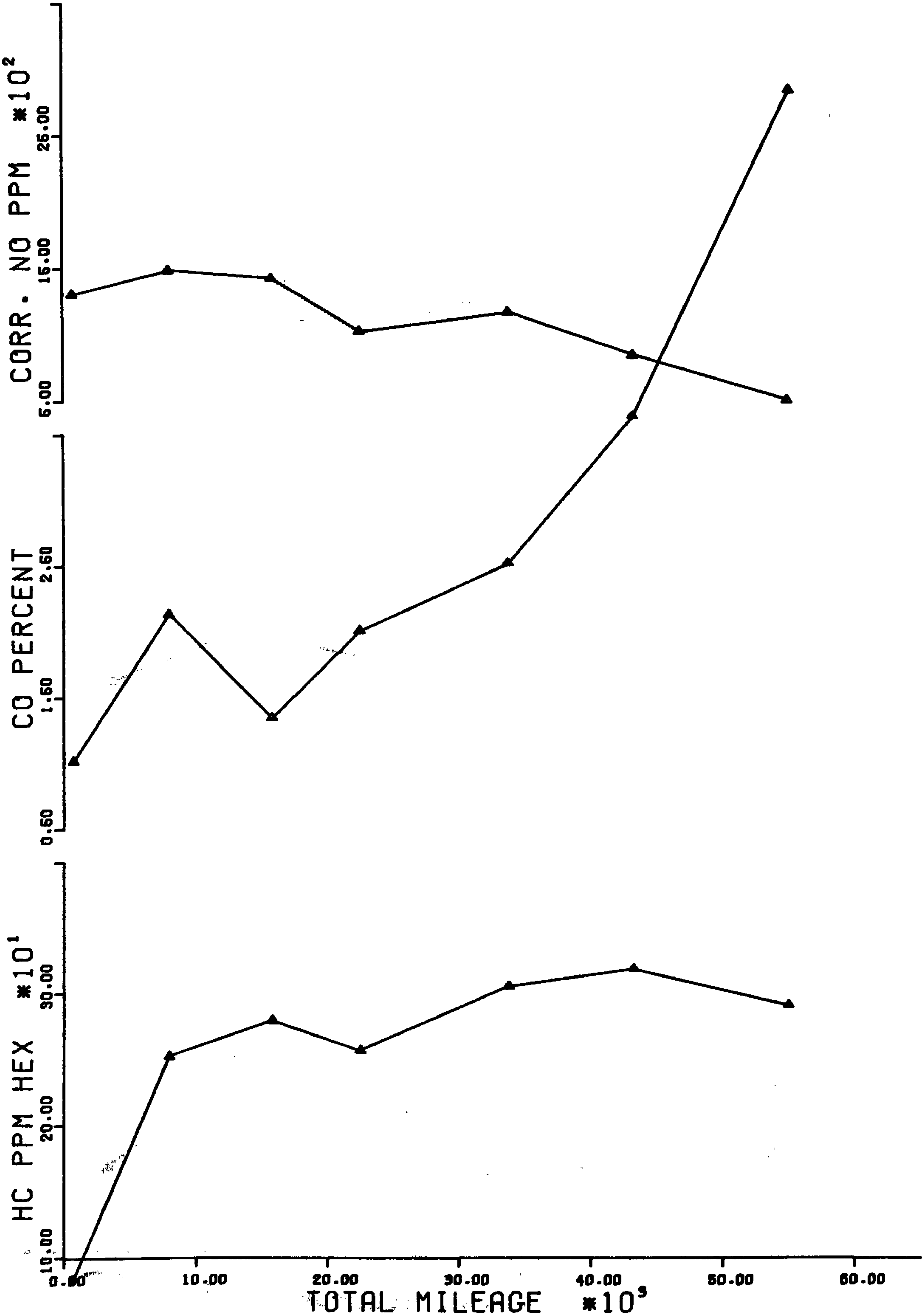



FIGURE E-146. UNIT 146 71 CHEV 24000 LB GVW DELIVERY 350 CID V8 ENGINE

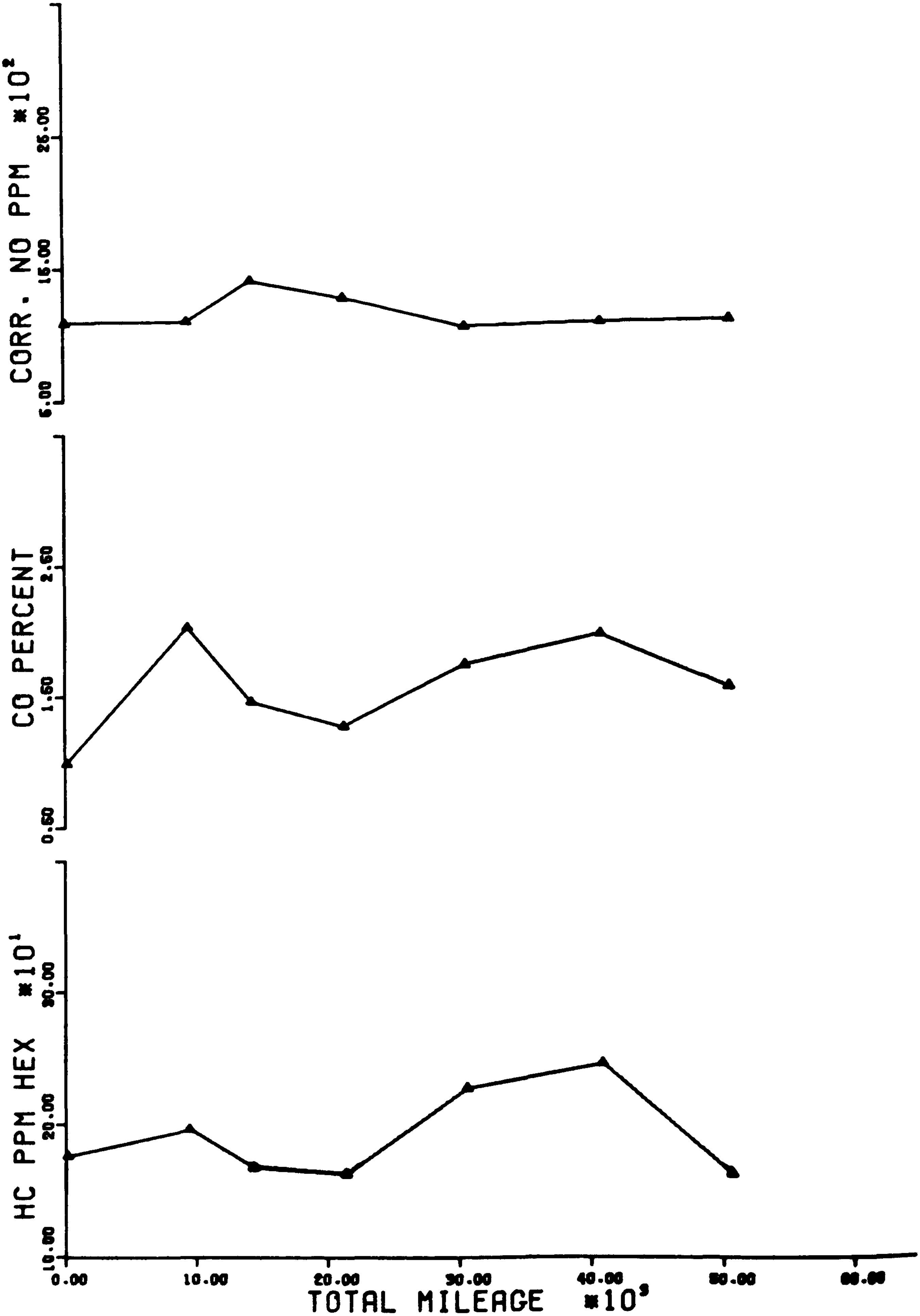



FIGURE E-147. UNIT 147 71 CHEV 24000 LB GVW DELIVERY 350 CID V8 ENGINE

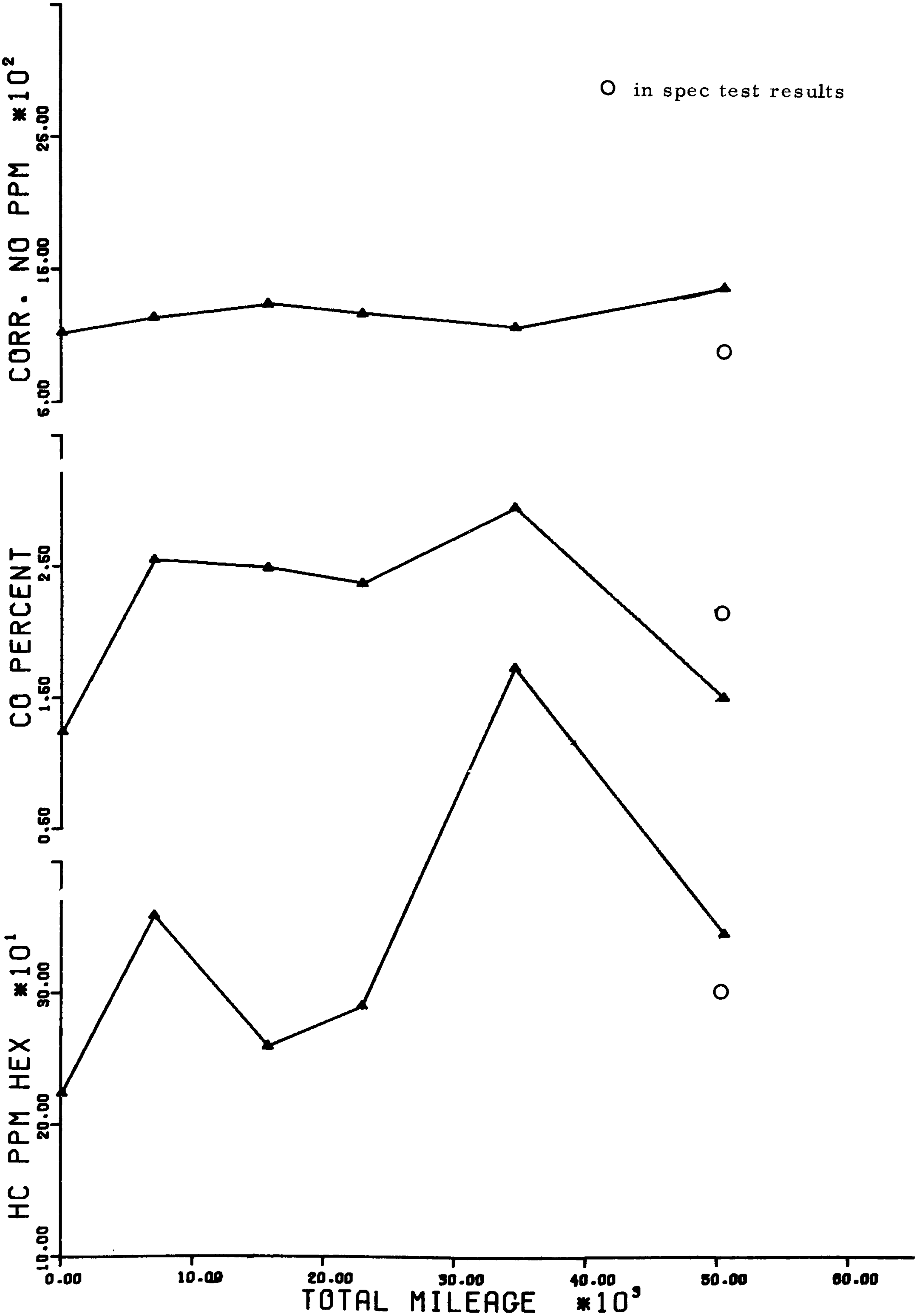



FIGURE E-148. UNIT 148 71 CHEV 24000 LB GVW DELIVERY 350 CID V8 ENGINE

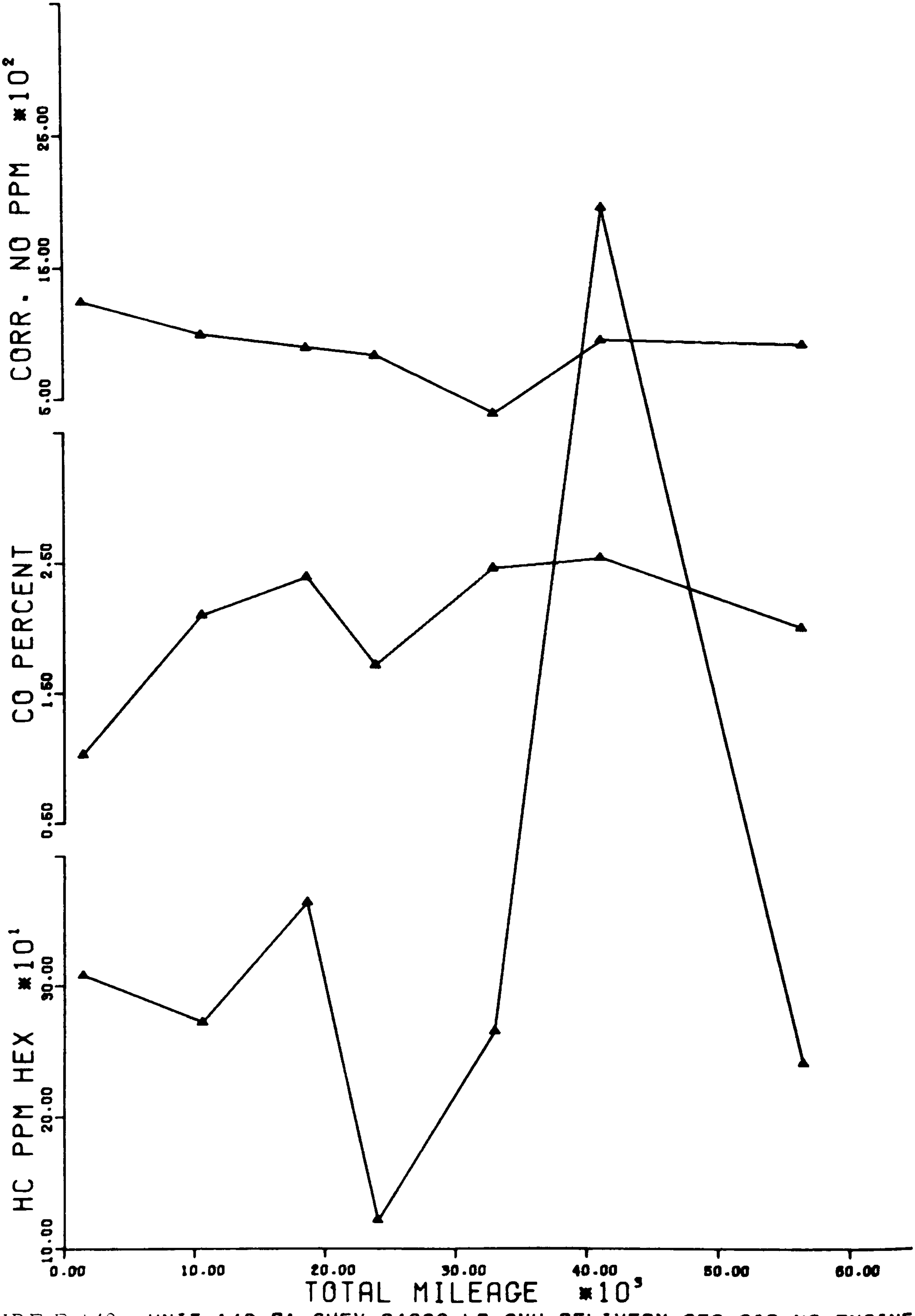



FIGURE E-149. UNIT 149 71 CHEV 24000 LB GVW DELIVERY 350 CID V8 ENGINE

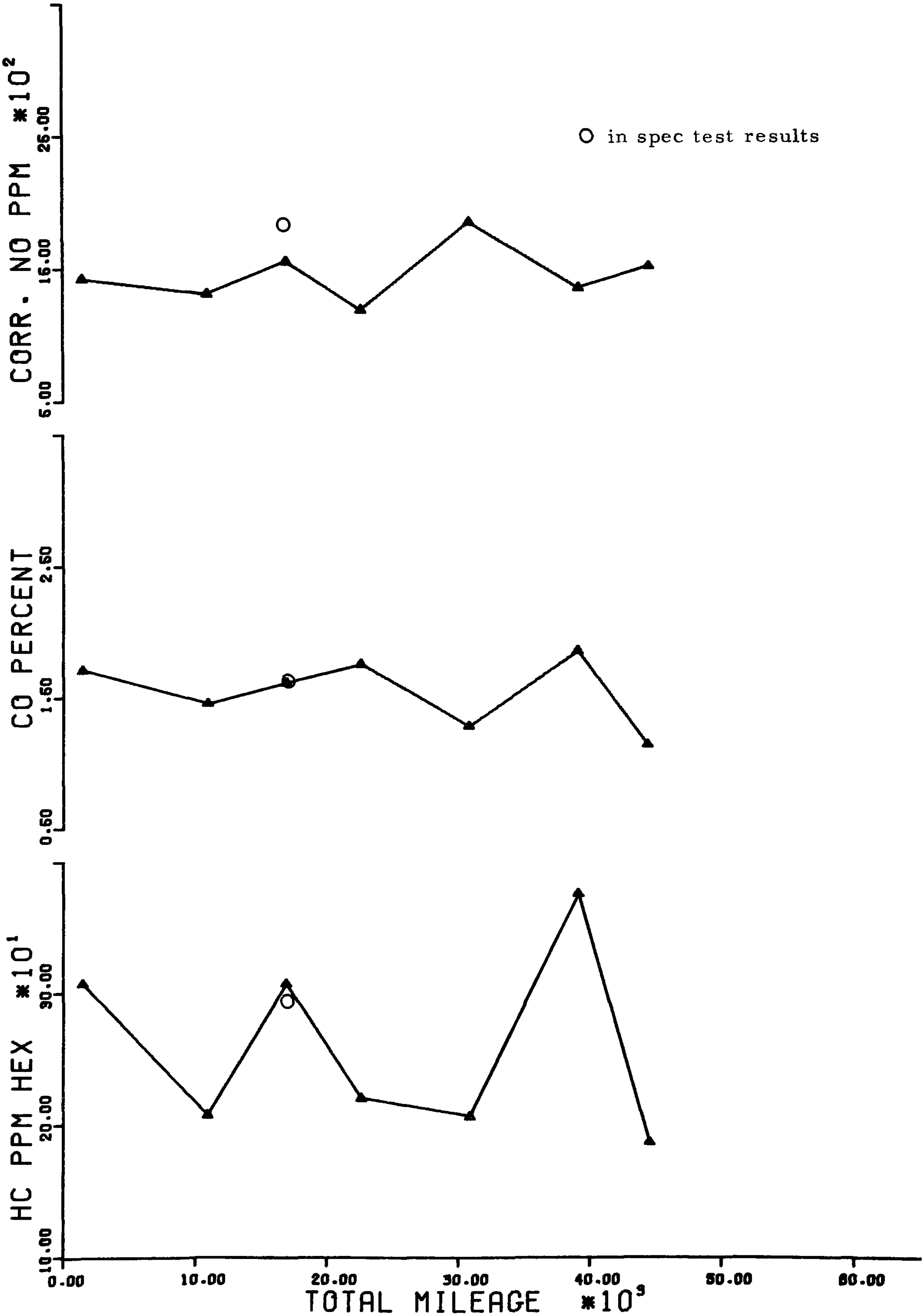



FIGURE E-150. UNIT 150 71 CHEV 24000 LB GVW DELIVERY 350 CID V8 ENGINE

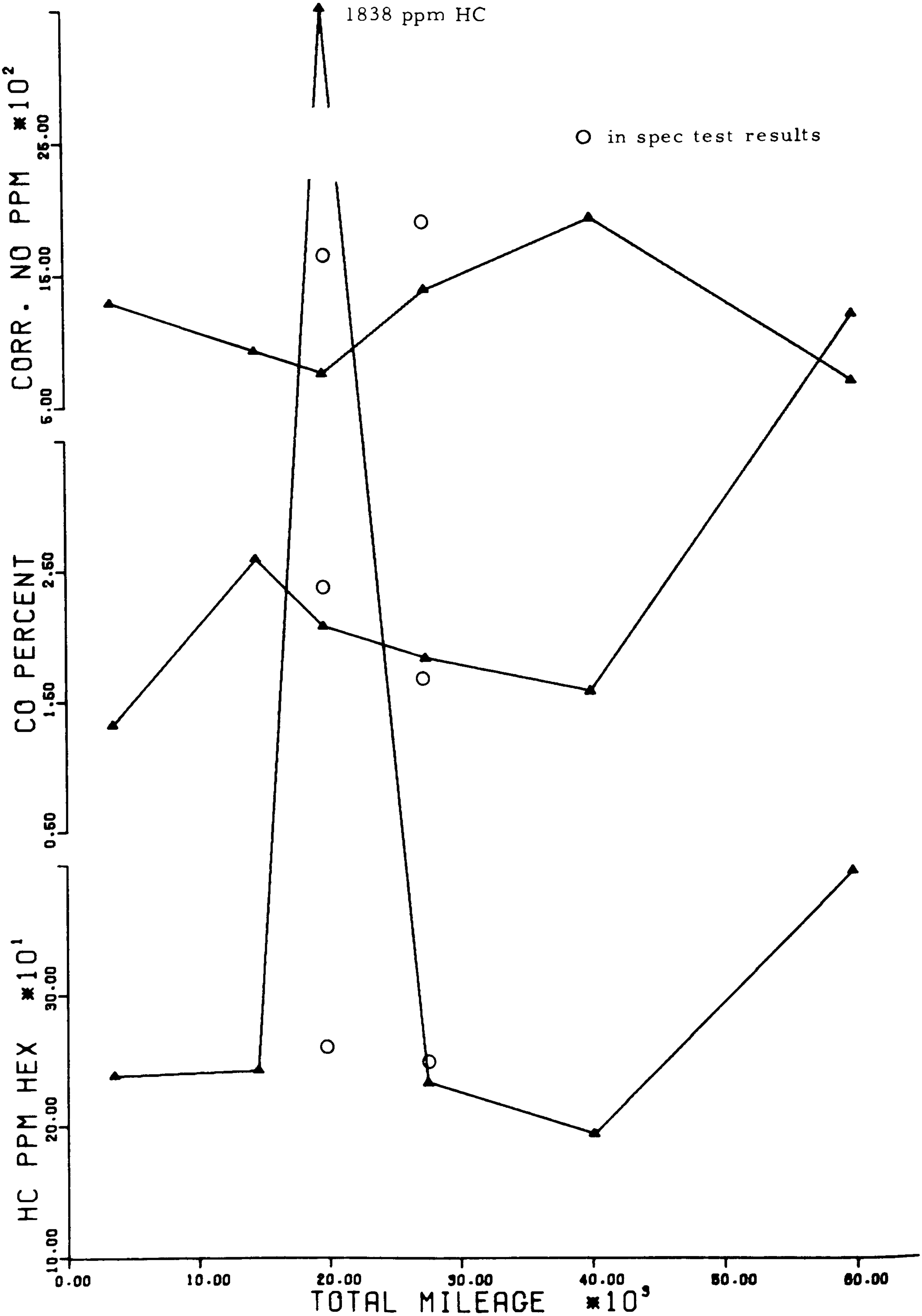



FIGURE E-151. UNIT 151 71 CHEV 32500 LB GVW MOVING TR 427 CID V8 ENGINE

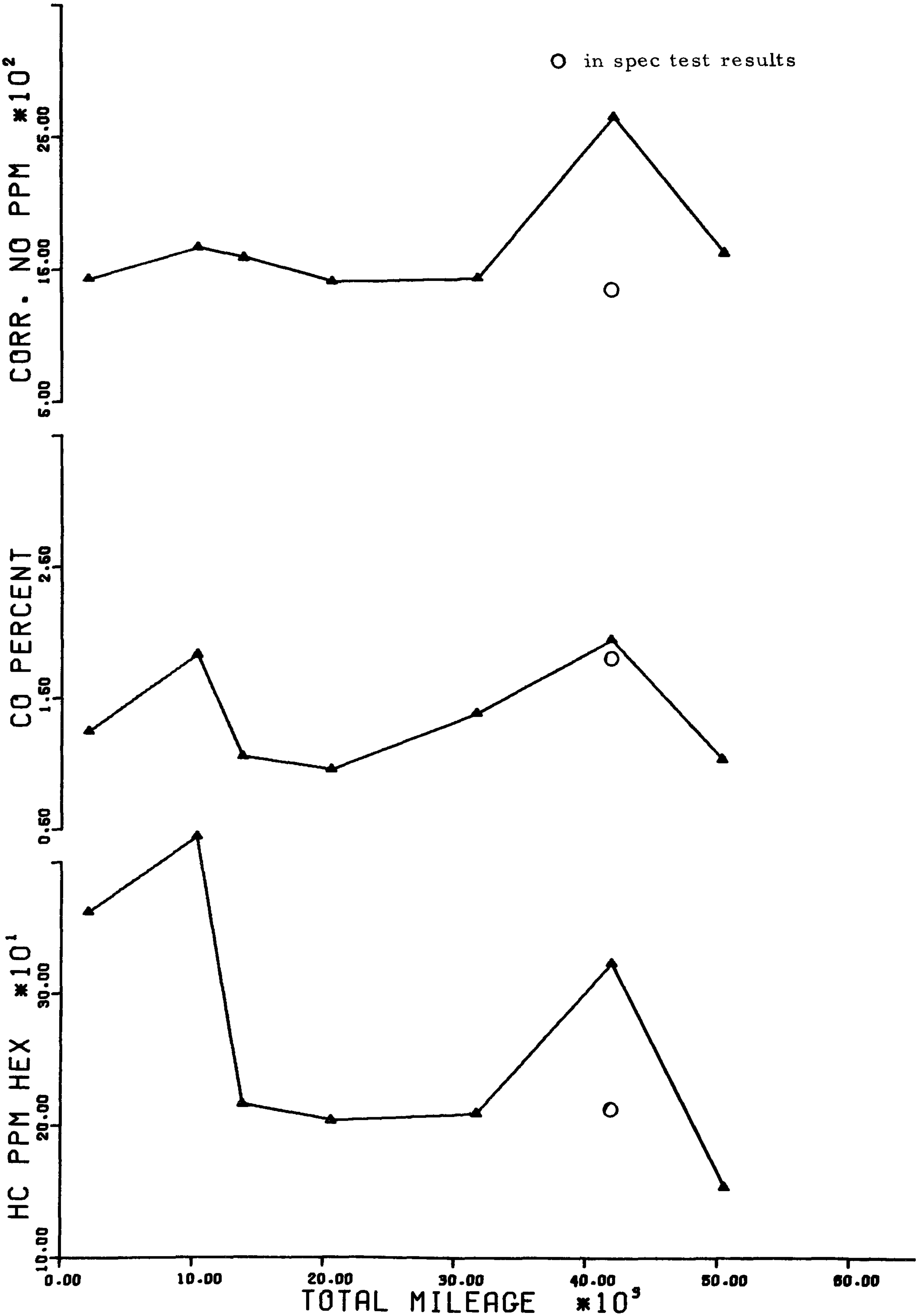



FIGURE E-152. UNIT 152 71 CHEV 24000 LB GVW DELIVERY 350 CID V8 ENGINE

# APPENDIX F

## PLOTS OF EMISSION LEVEL CHANGES WITH MILEAGE BY ENGINE MODEL GROUP

Note: * on computer printout sheets indicates multiplier

## APPENDIX F. SAMPLE CALCULATIONS FOR PERCENT CHANGE IN EMISSIONS BY ENGINE GROUP

1. Data for Engine group 1, Chevrolet 250 CID I6 engines, hydrocarbon emissions.

| Unit Number | 31 | 32 | 36 | 37 |
|---|---|---|---|---|
| Round 1 | | | | |
| Odometer miles | 3000 | 1274 | 2228 | 841 |
| HC PPM | 266 | 274 | 249 | 263 |
| Round 2 | | | | |
| Odometer miles | 9171 | 3250 | 3797 | 4187 |
| HC PPM | 260 | 284 | 285 | 294 |
| Round 3 | | | | |
| Odometer miles | 14823 | 6022 | 7096 | 6459 |
| HC PPM | 222 | 239 | 293 | 284 |
| Round 4 | | | | |
| Odometer miles | 26720 | 11450 | 11213 | 12163 |
| HC PPM | 255 | 223 | 252 | 272 |
| Round 5 | | | | |
| Odometer miles | 37406 | 16329 | 15724 | 17823 |
| HC PPM | 214 | 230 | 371 | 261 |
| Round 6 | | | | |
| Odometer miles | 48359 | 21358 | 19000 | 23420 |
| HC PPM | 228 | 295 | 266 | 229 |
| Round 7 | | | | |
| Odometer miles | 59460 | 26246 | 22180 | wrecked |
| HC PPM | 308 | 277 | 290 | |

2. First, the highest round 1 odometer mileage is chosen as the base mileage. In this example the base mileage is 3000 miles, the initial mileage for unit 31.
3. Next, the emission level at 3000 miles is calculated for the remaining units as follows:
   (a) Determine when the base mileage is reached for each unit. In this example 3000 miles is reached between round 1 and round 2 inspections for all trucks
   (b) Determine the equation for the line between the HC levels on either side of the base mileage.

   i.e., HC = (A x Mileage) + B

For unit 32: $A = \frac{(284-274)}{(3250-1274)} = .00506$

$B = 274 - (.00506 \times 1274) = 267.6$

at 3000 miles $HC = (.00506 \times 3000) + 267.6$
$HC = 283$

For unit 36: $A = \frac{(285-249)}{(3797-2228)} = .0229$

$B = 249 - (.0229 \times 2228) = 197.9$

at 3000 miles $HC = (.0229 \times 3000) + 197.9$
$HC = 267$

For unit 37: $A = \frac{(294-263)}{(4187-841)} = .00926$

$B = 263 \quad (.00926 \times 841) = 255.2$

at 3000 miles $HC - (.00926 \times 3000) + 255.2$
$HC = 283$

4. At the base mileage, the interpolated base emission level is now available for all units. For this example, at 3000 miles the base HC level is:

| Unit | Base HC ppm |
|---|---|
| 31 | 266 |
| 32 | 283 |
| 36 | 267 |
| 37 | 283 |

5. Using each unit's base emission level the percent change from the base emission level is calculated for the test results from each round.

(a) Unit 31

$$\text{Round 1} = \frac{266-266}{266} \times 100 = 0\%$$

$$\text{Round 2} = \frac{260-266}{266} \times 100 = -2.3\%$$

$$\text{Round 3} = \frac{222-266}{266} \times 100 = -16.5\%$$

$$\text{Round 4} = \frac{255-266}{266} \times 100 = -4.1\%$$

$$\text{Round 5} = \frac{214-266}{266} \times 100 = -19.6\%$$

$$\text{Round 6} = \frac{228-266}{266} \times 100 = -14.3\%$$

$$\text{Round 7} - \frac{308-266}{266} \times 100 = +15.8\%$$

(b) Unit 32

$$\text{Round 1} \quad \frac{274-283}{283} \times 100 = -3.2\%$$

$$\text{Round 2} = \frac{284-283}{283} \times 100 \quad 0.4\%$$

$$\text{Round 3} = \frac{239-283}{283} \times 100 = -15.5\%$$

$$\text{Round 4} = \frac{223-283}{283} \times 100 = -21.2\%$$

$$\text{Round 5} = \frac{230-283}{283} \times 100 = -18.7\%$$

$$\text{Round 6} = \frac{295-283}{283} \times 100 = +4.2\%$$

$$\text{Round 7} = \frac{277-283}{283} \times 100 = -2.1\%$$

(c) Unit 36

$$\text{Round 1} = \frac{249-267}{267} = -6.7$$

$$\text{Round 2} = \frac{285-267}{267} = +6.7$$

$$\text{Round 3} = \frac{293-267}{267} = +9.7$$

$$\text{Round 4} = \frac{252-267}{267} = -5.6$$

$$\text{Round 5} = \frac{371-267}{267} = +39.0$$

$$\text{Round 6} = \frac{266-267}{267} = -0.4$$

$$\text{Round 7} \quad \frac{290-267}{267} = +8.6$$

(d) Unit 37

$$\text{Round 1} = \frac{263-283}{283} = -7.1$$

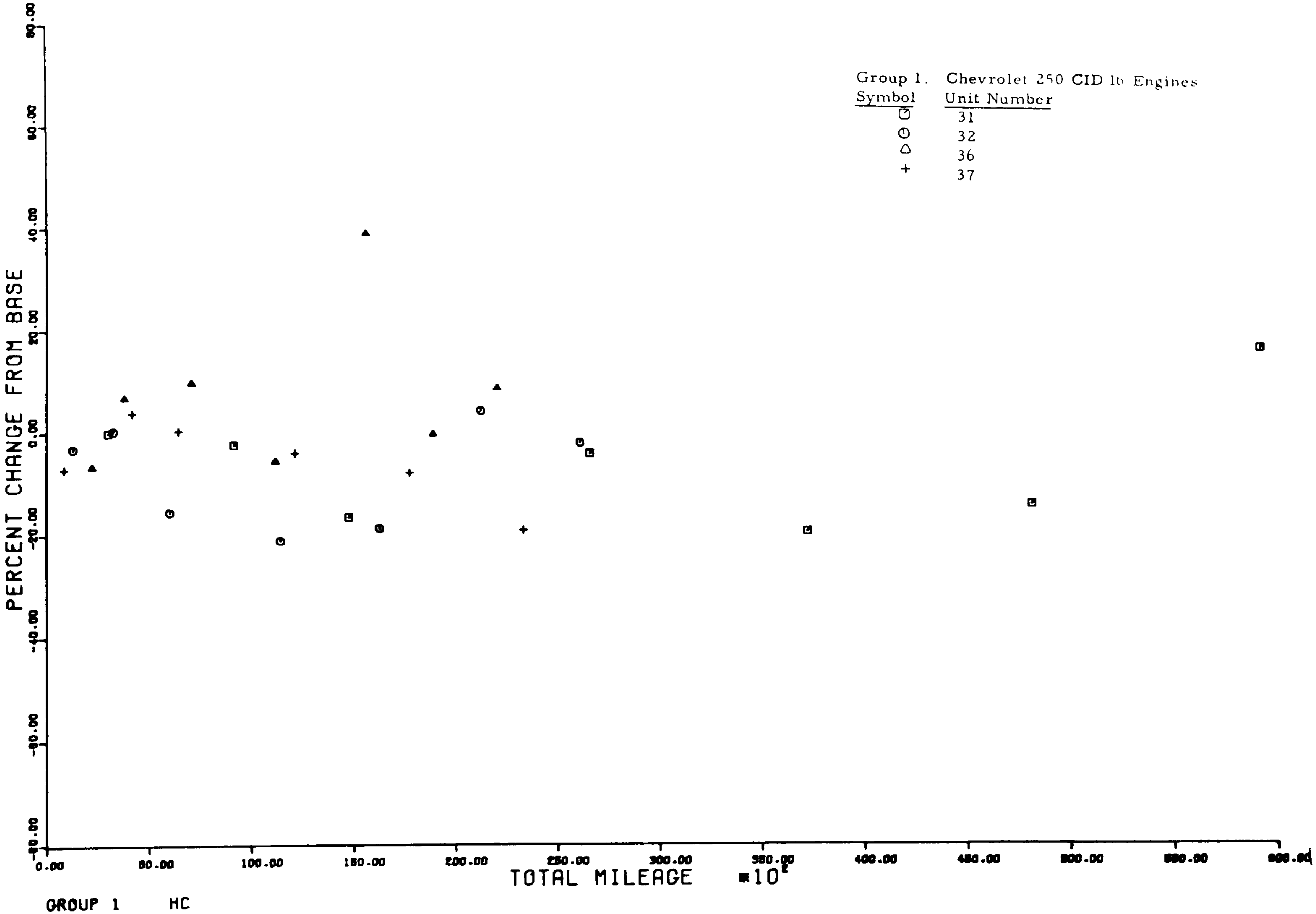
$$\text{Round 2} = \frac{294-283}{283} = +3.9$$

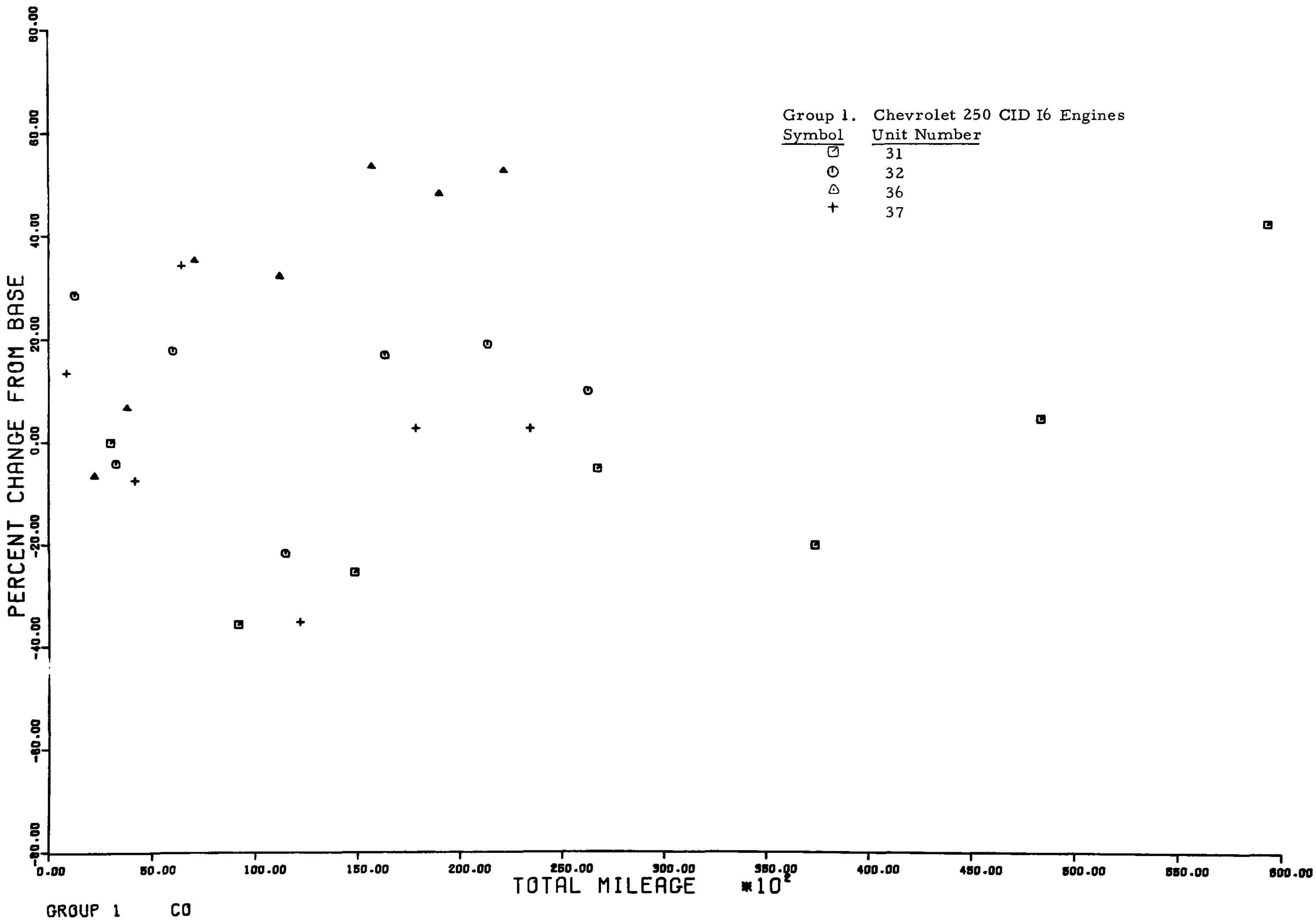
$$\text{Round 3} = \frac{284-283}{283} = +0.4$$

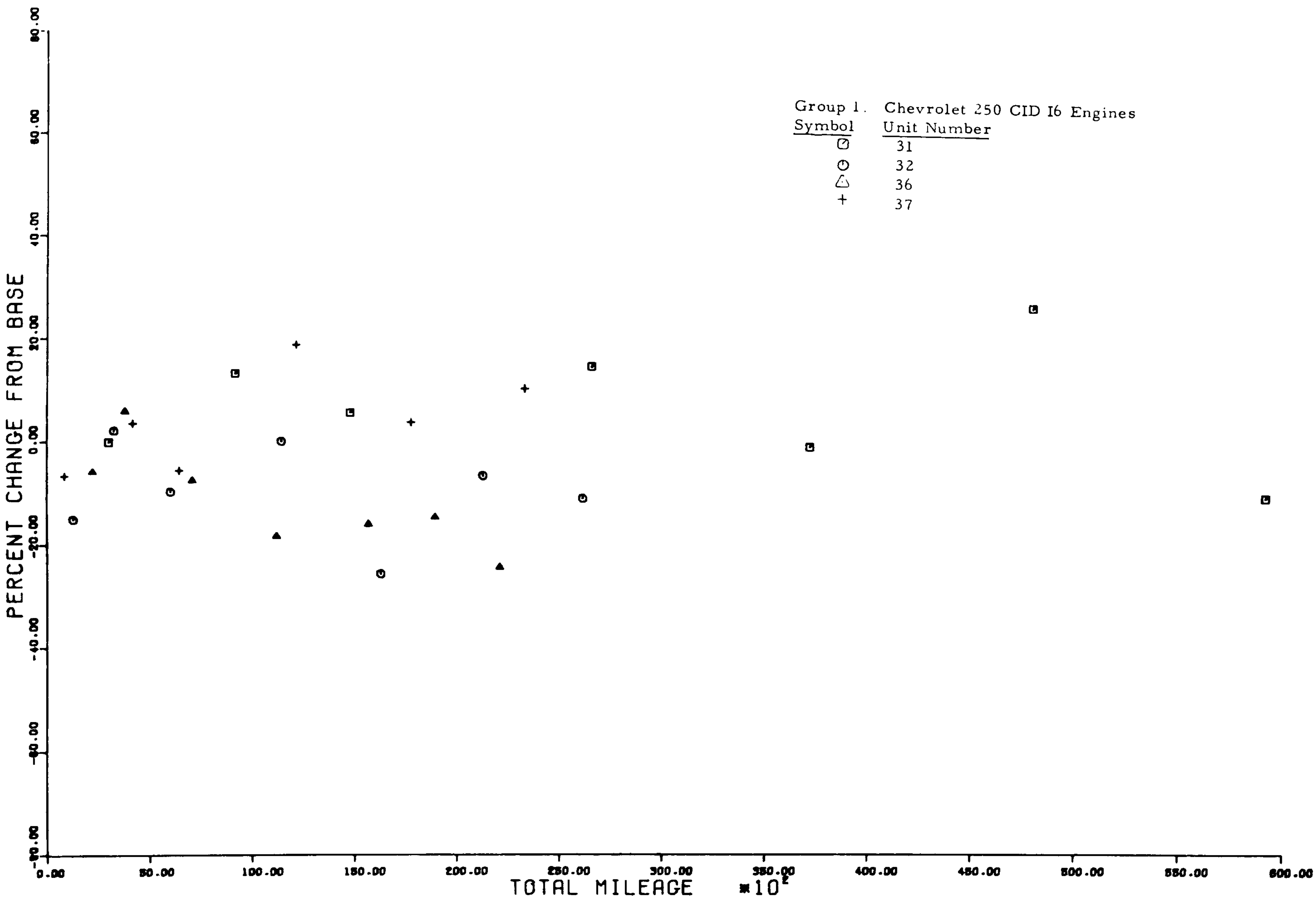
$$\text{Round 4} = \frac{272-283}{283} = -3.9$$

$$\text{Round 5} = \frac{261-283}{283} \quad -7.8$$

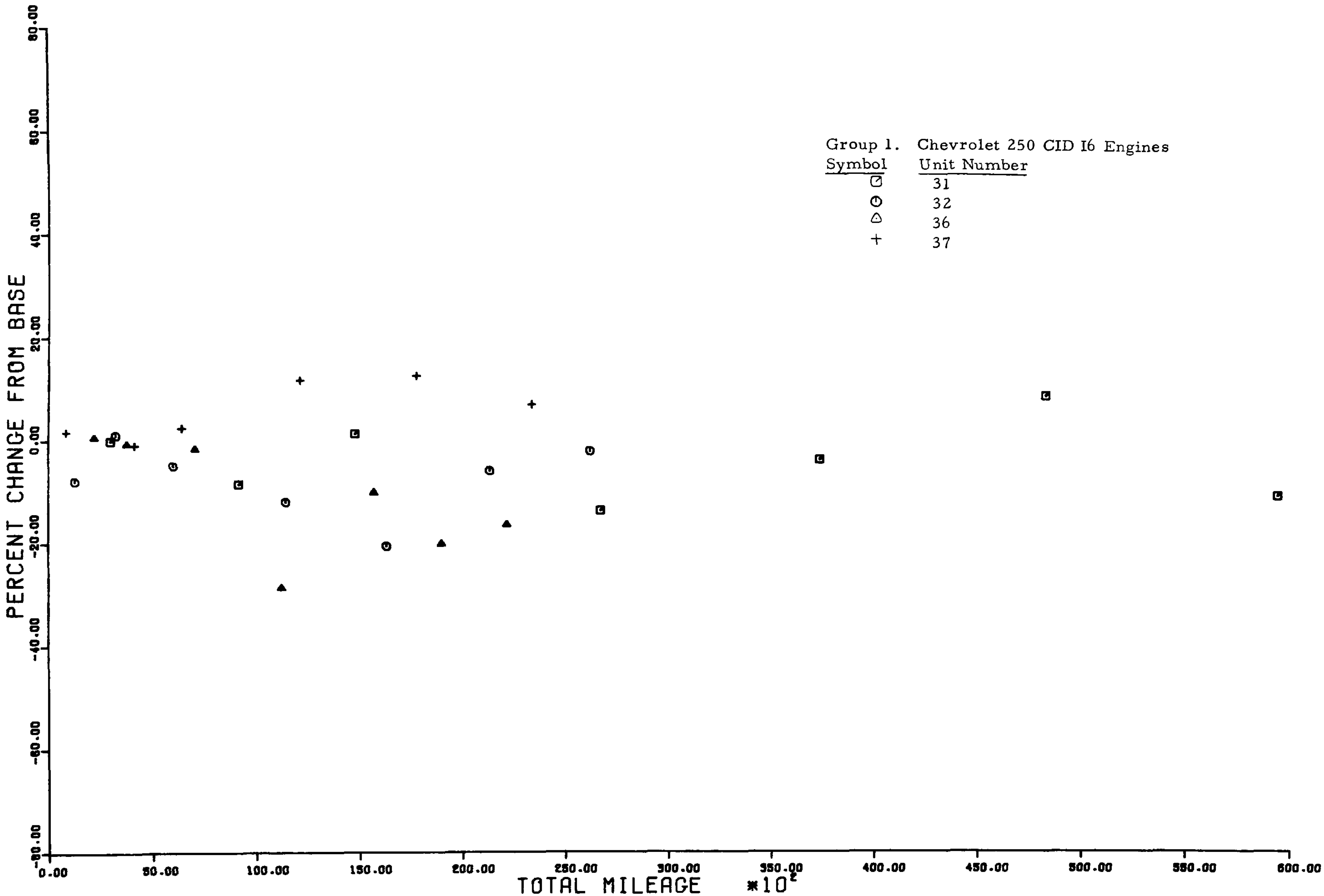
$$\text{Round 6} = \frac{229-283}{283} = -19.1$$


Group 1. Chevrolet 250 CID I6 Engines
Symbol
Unit Number
31
32
36
37
PERCENT CHANGE FROM BASE
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
GROUP 1 HC

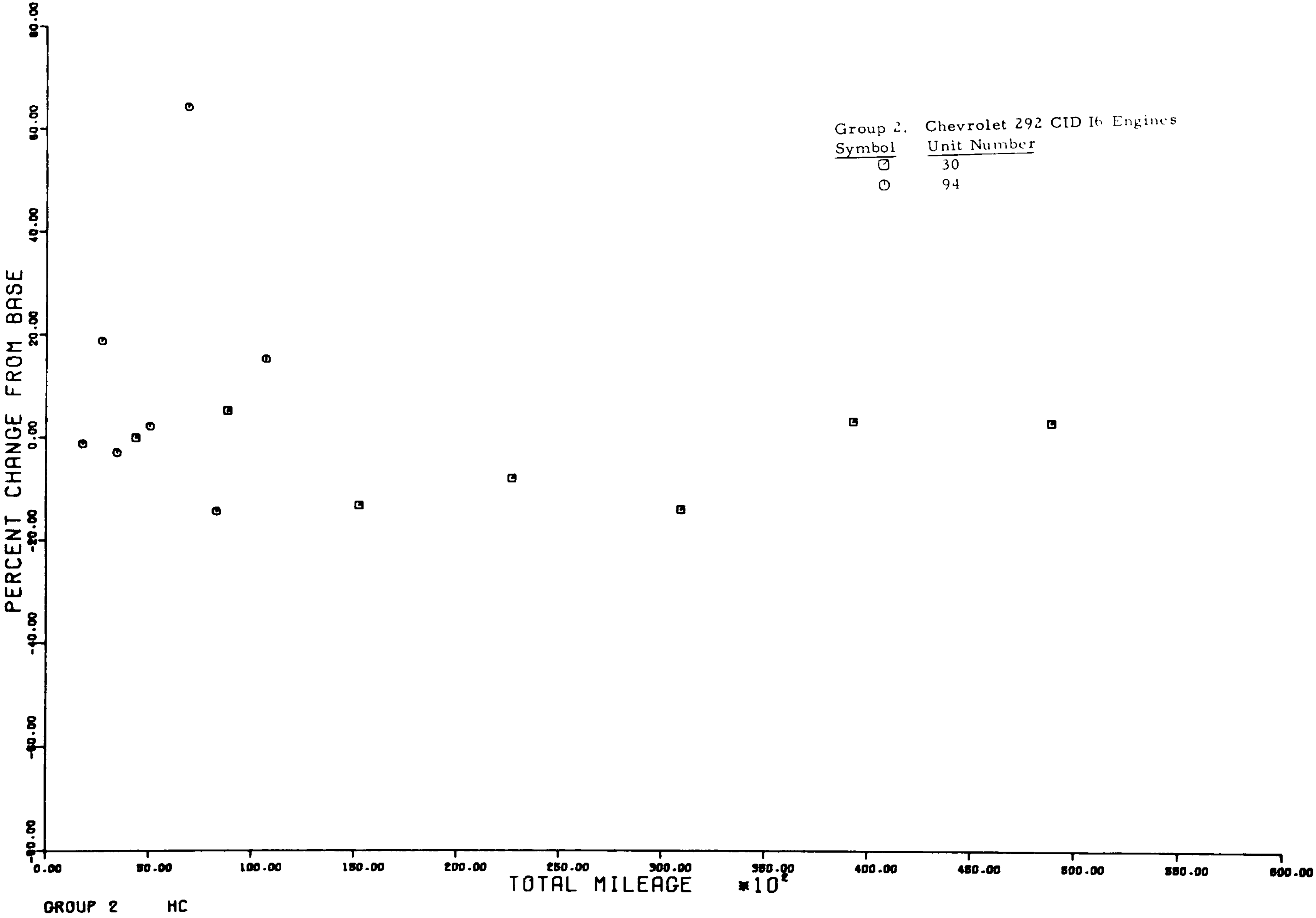

Group 1. Chevrolet 250 CID I6 Engines
Symbol Unit Number
31
32
36
37
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
GROUP 1 CO

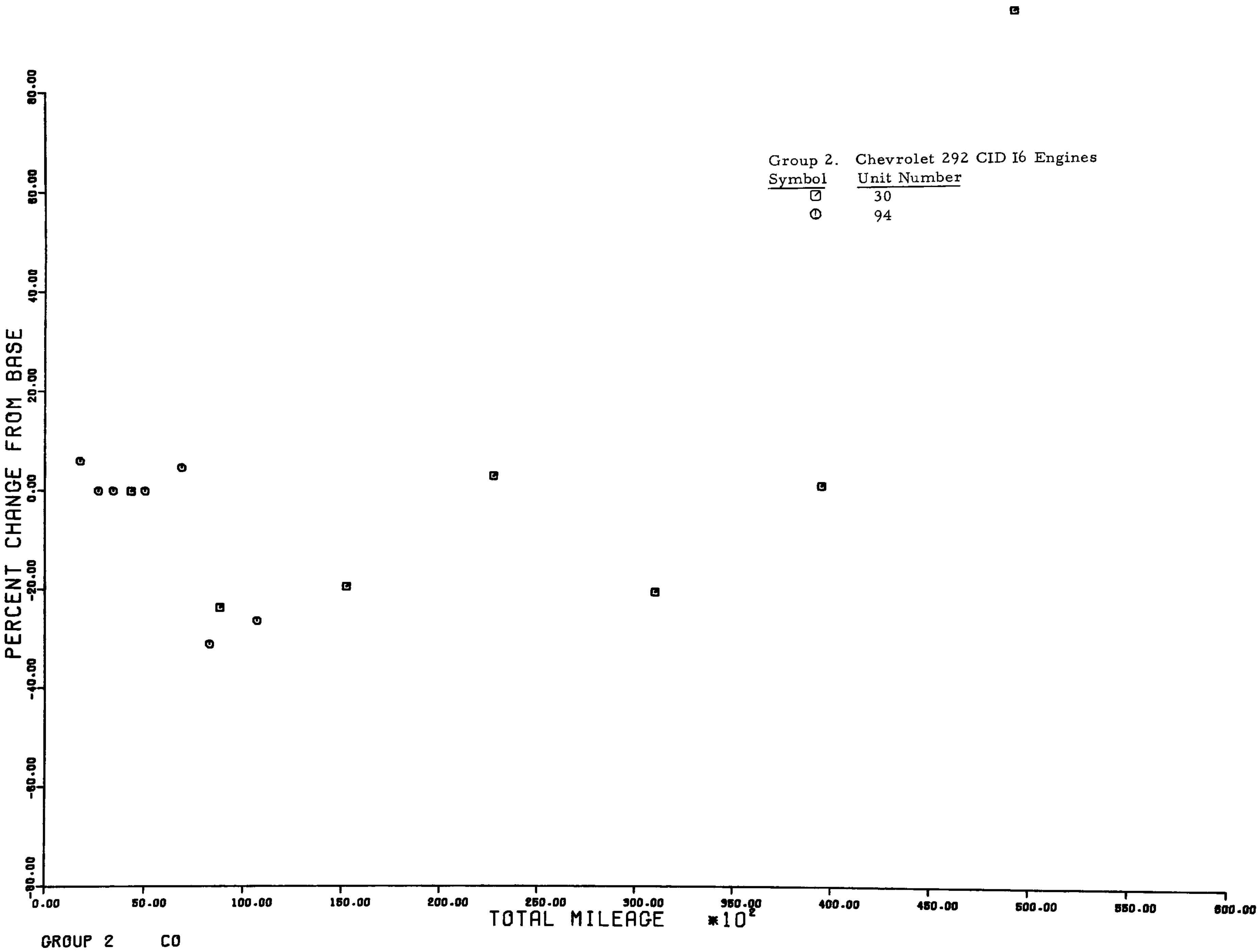


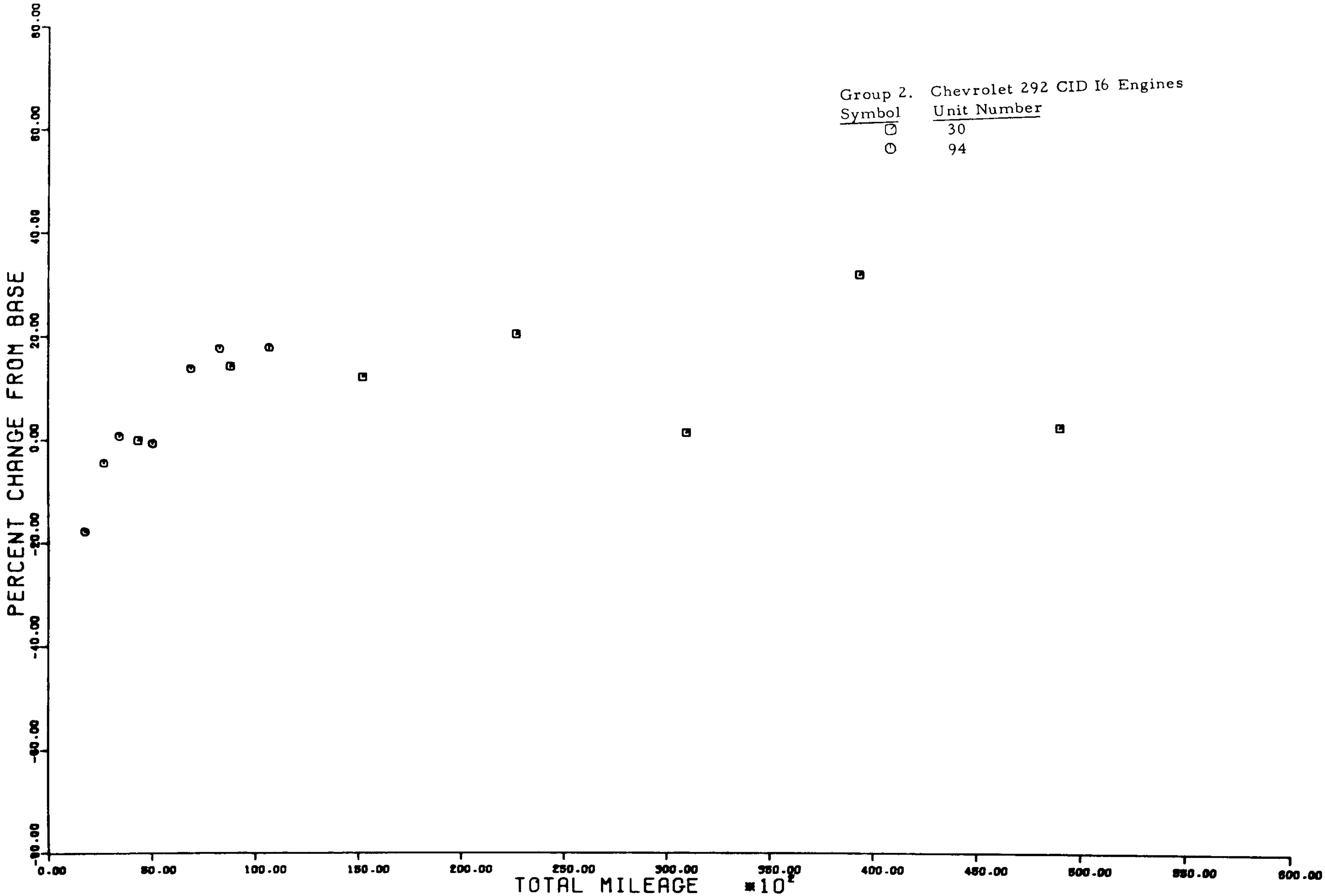

GROUP 1 NO (NOT CORRECTED)



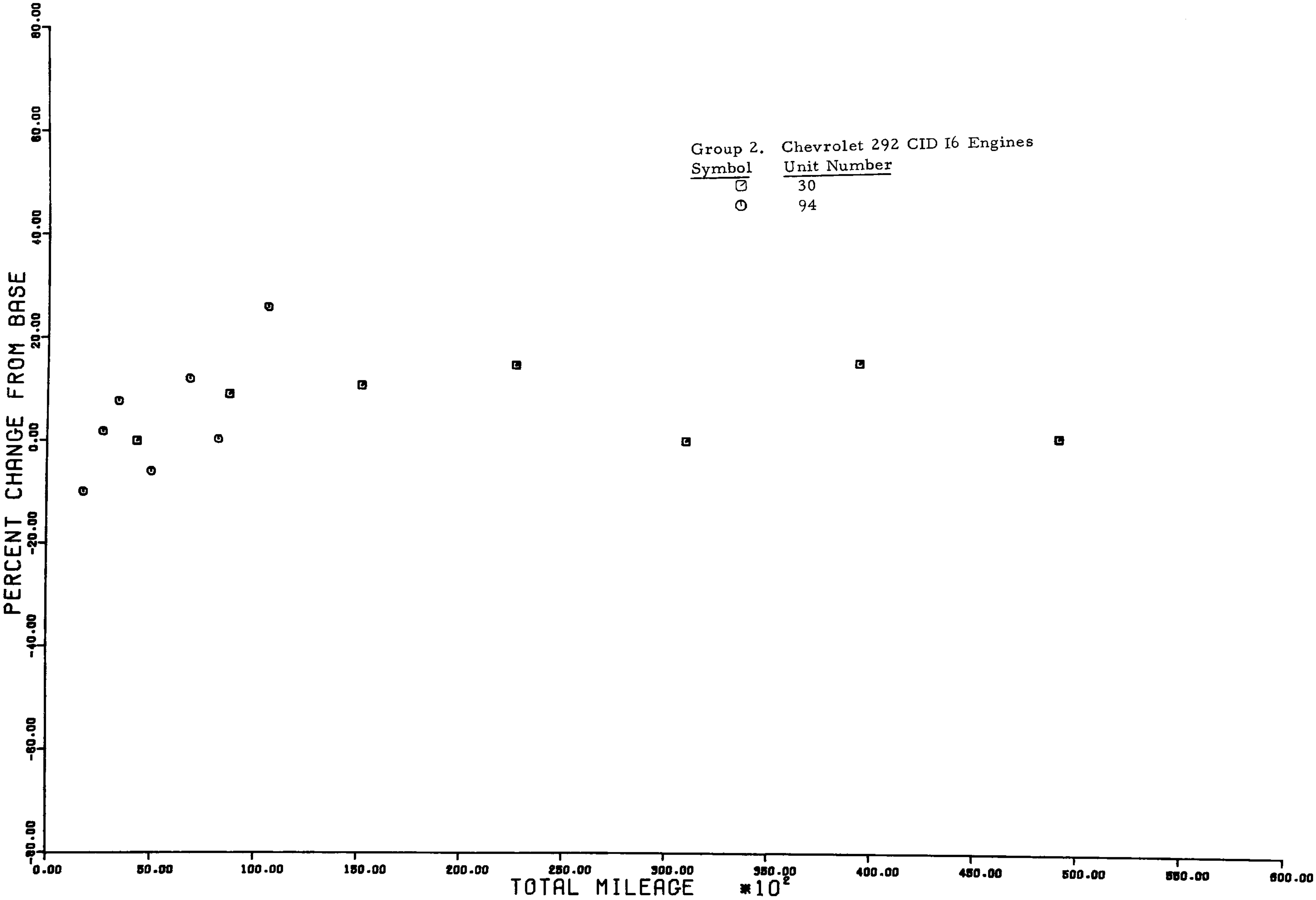

GROUP 1 NO CORRECTED


Group 2. Chevrolet 292 CID I6 Engines
Symbol Unit Number
30
94
PERCENT CHANGE FROM BASE
TOTAL MILEAGE ×10²
GROUP 2 HC

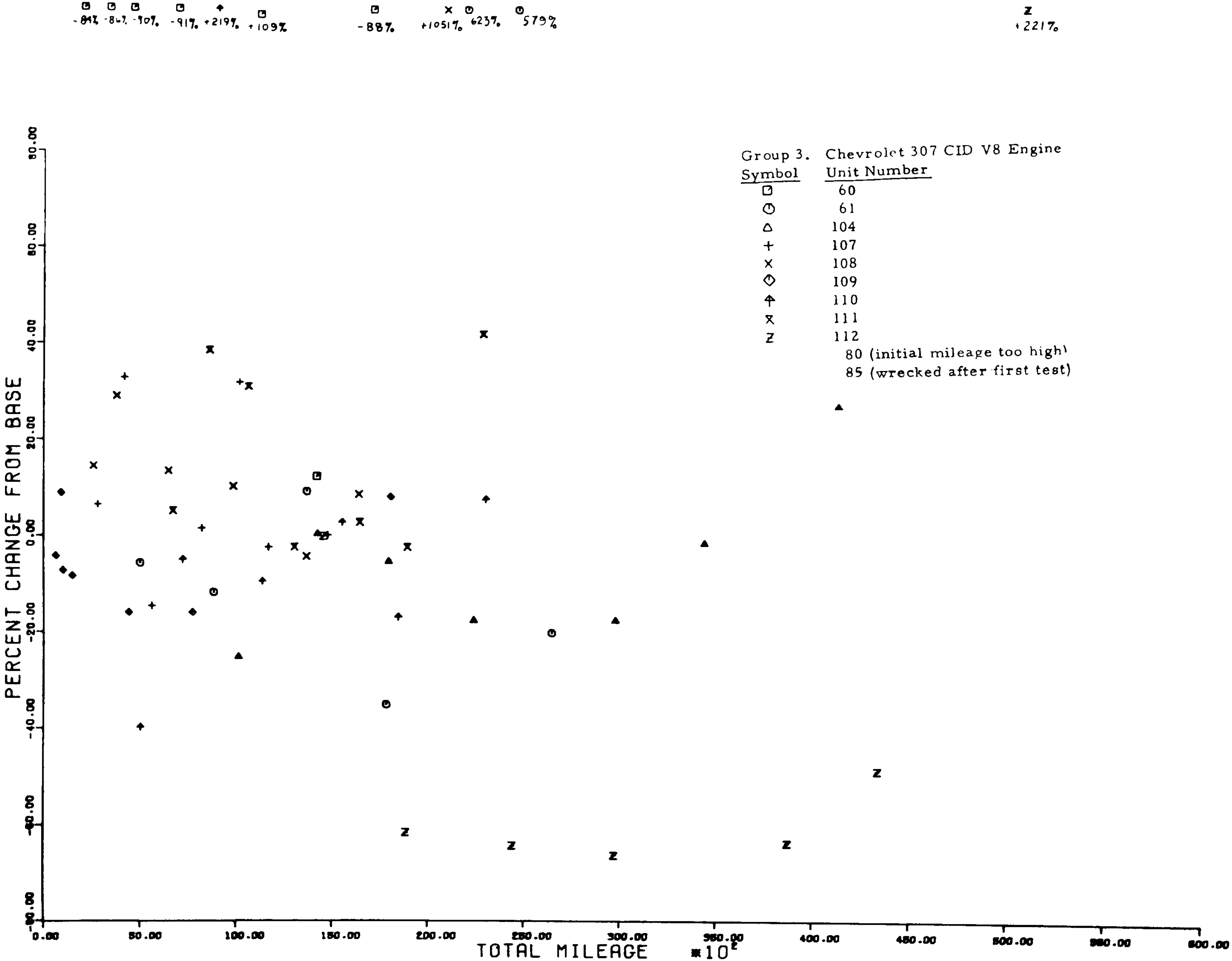

Group 2. Chevrolet 292 CID I6 Engines
Symbol Unit Number
30
94
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
GROUP 2 CO




GROUP 2 NO (NOT CORRECTED)

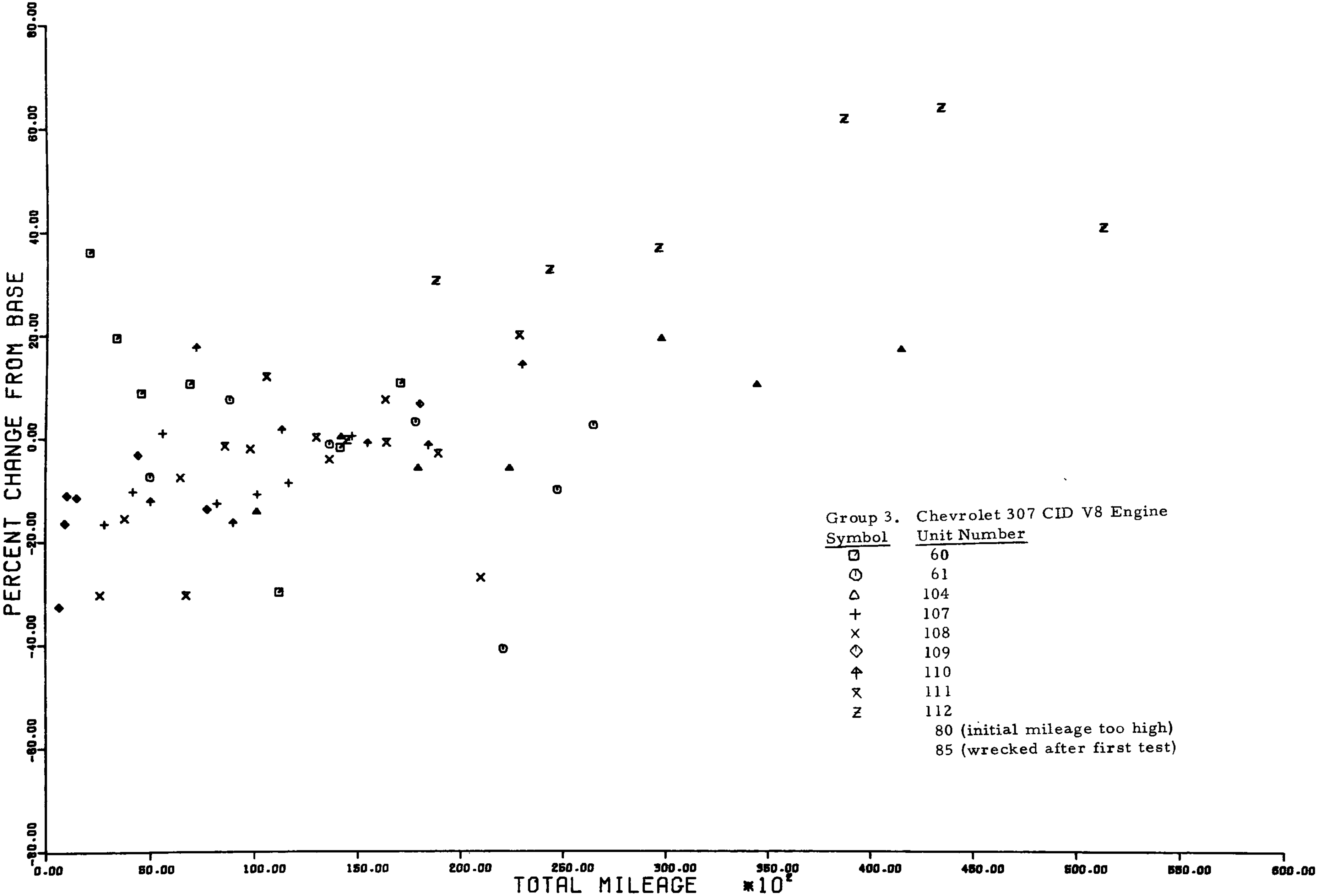



GROUP 2 NO CORRECTED



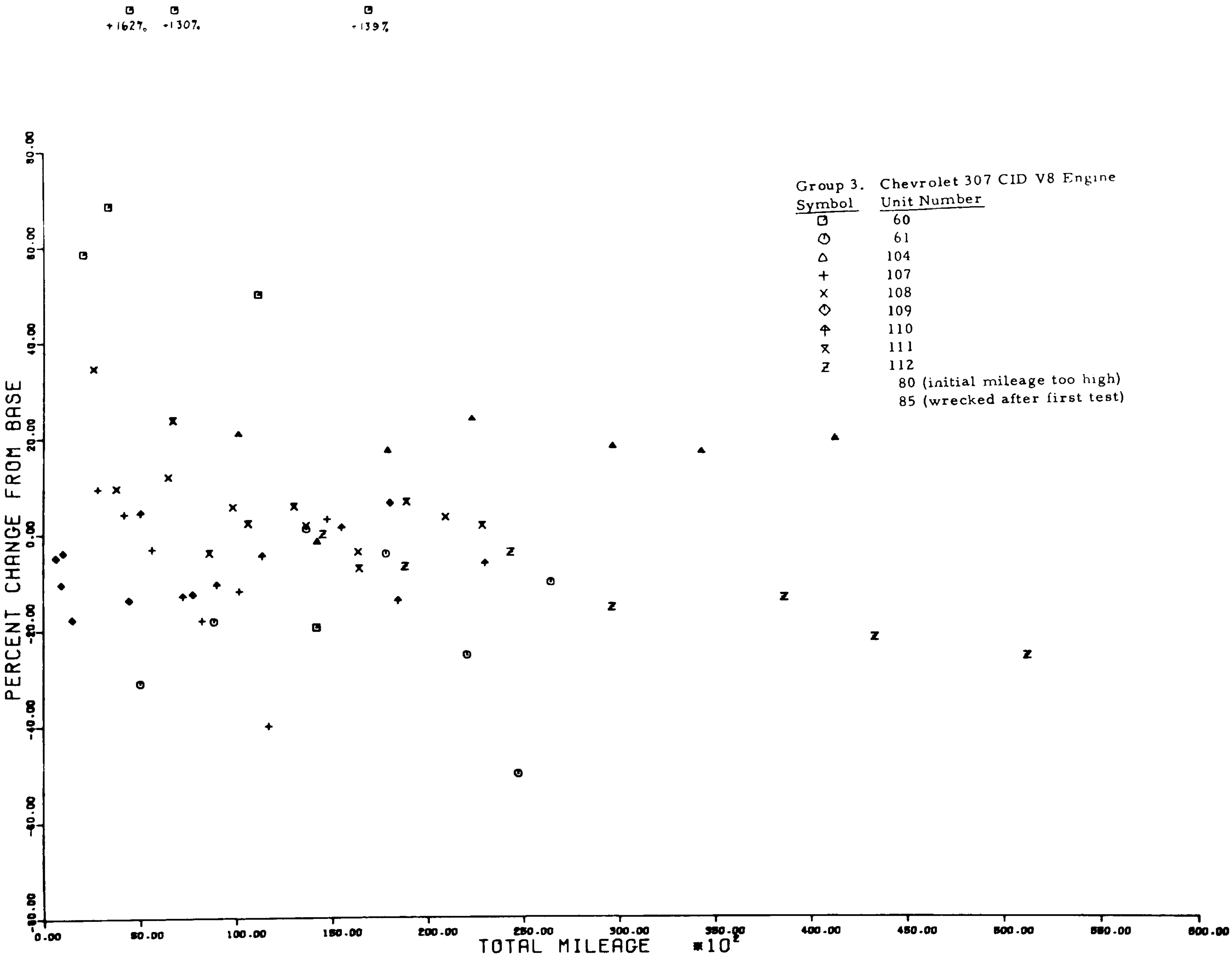
-84% -84% -90% -91% +219% +109%
-88%
+1051% 623% 579%
+221%
Group 3. Chevrolet 307 CID V8 Engine
Symbol Unit Number
60
61
104
107
108
109
110
111
112
80 (initial mileage too high)
85 (wrecked after first test)
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10[2]


GROUP 3 HC

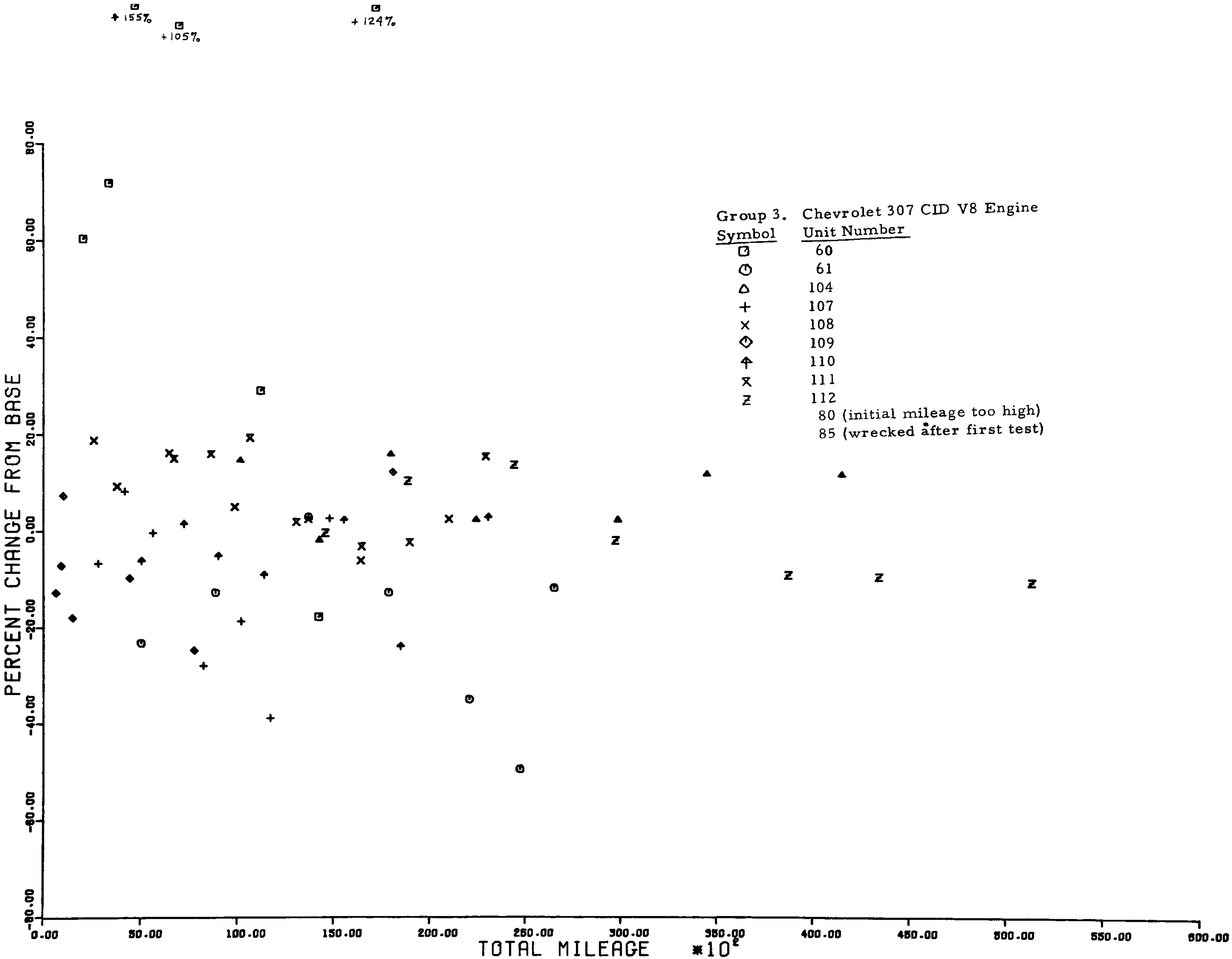


PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
Group 3. Chevrolet 307 CID V8 Engine
Symbol Unit Number
60
61
104
107
108
109
110
111
112
80 (initial mileage too high)
85 (wrecked after first test)

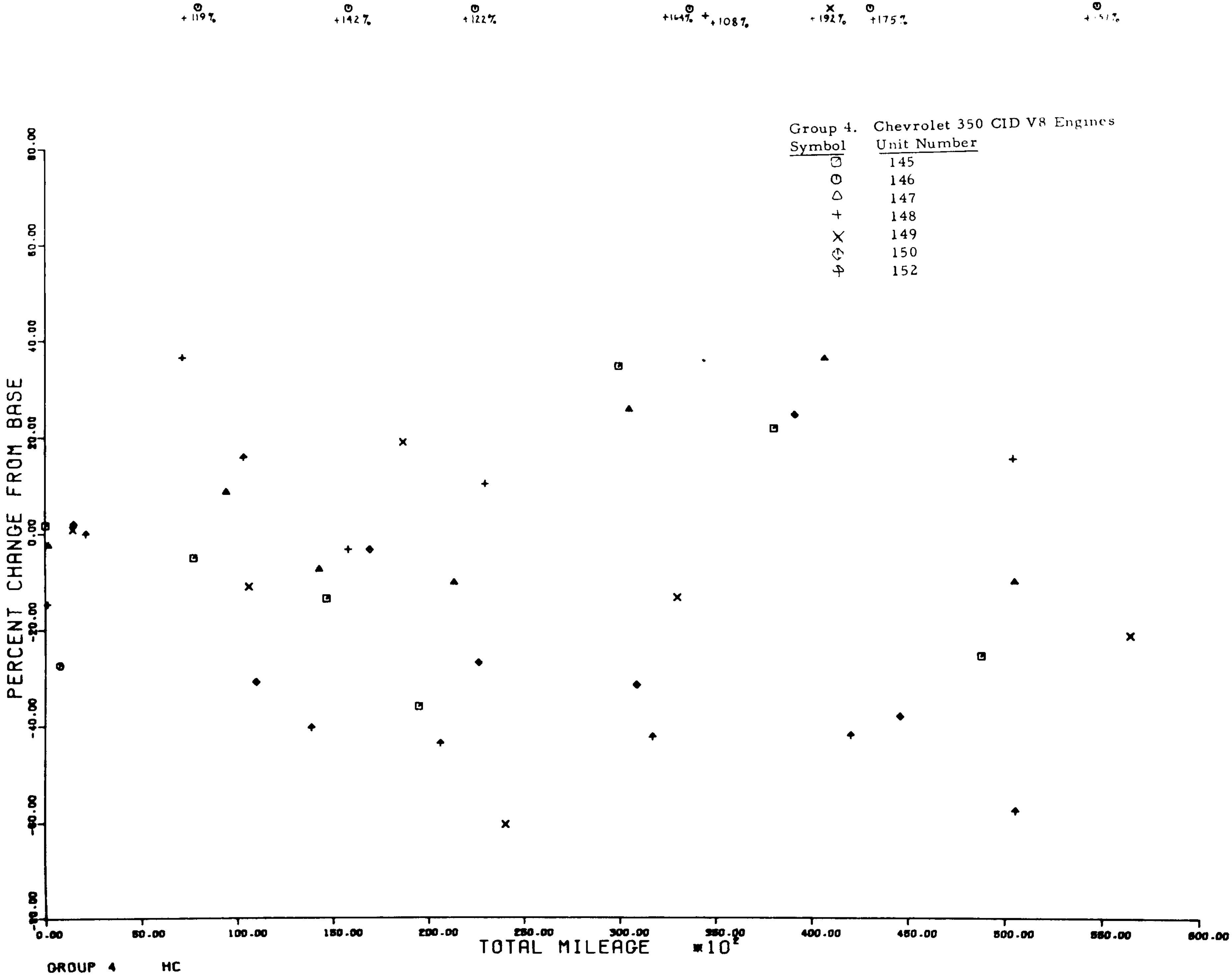

GROUP 3 CO

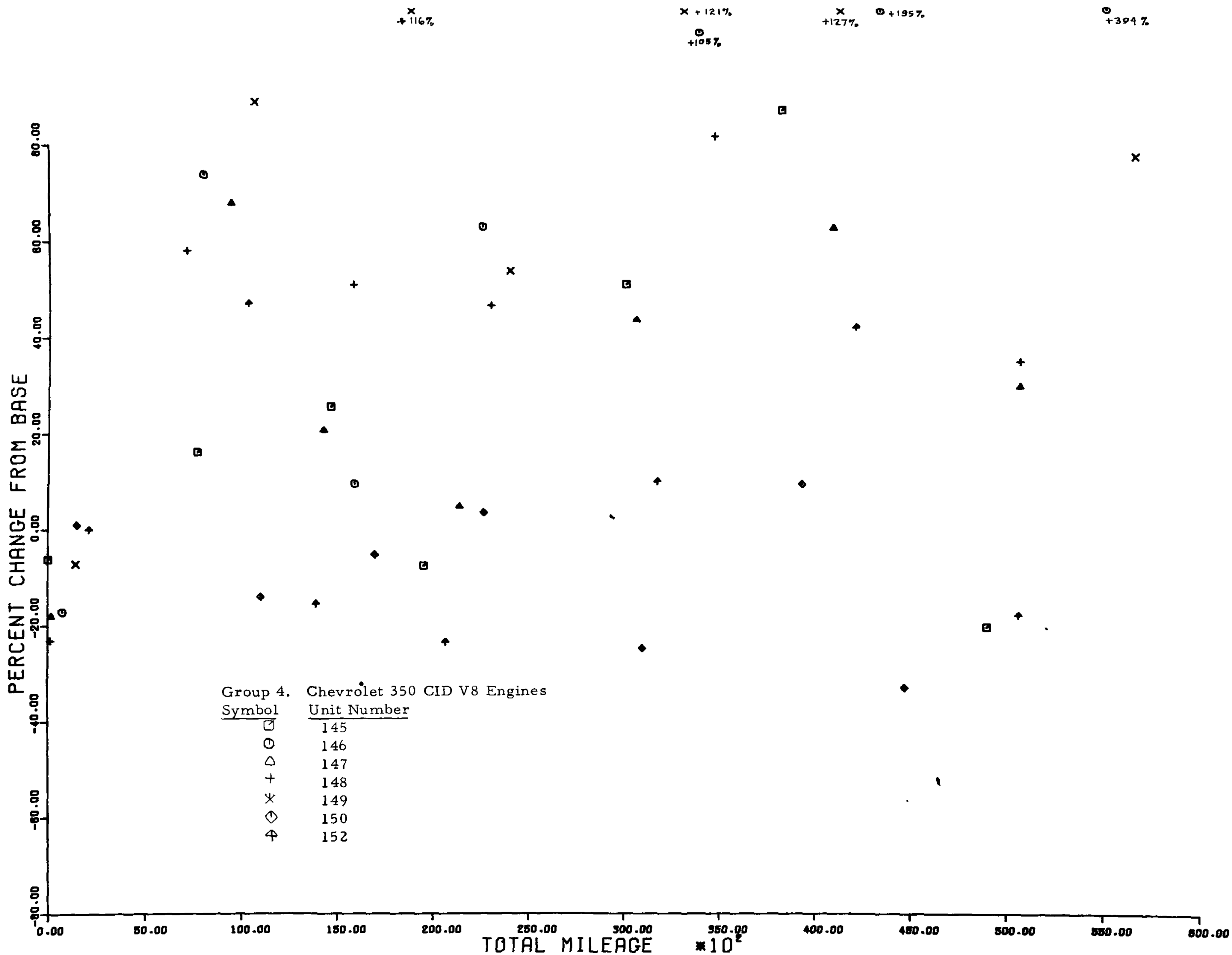



GROUP 3 NO (NOT CORRECTED)

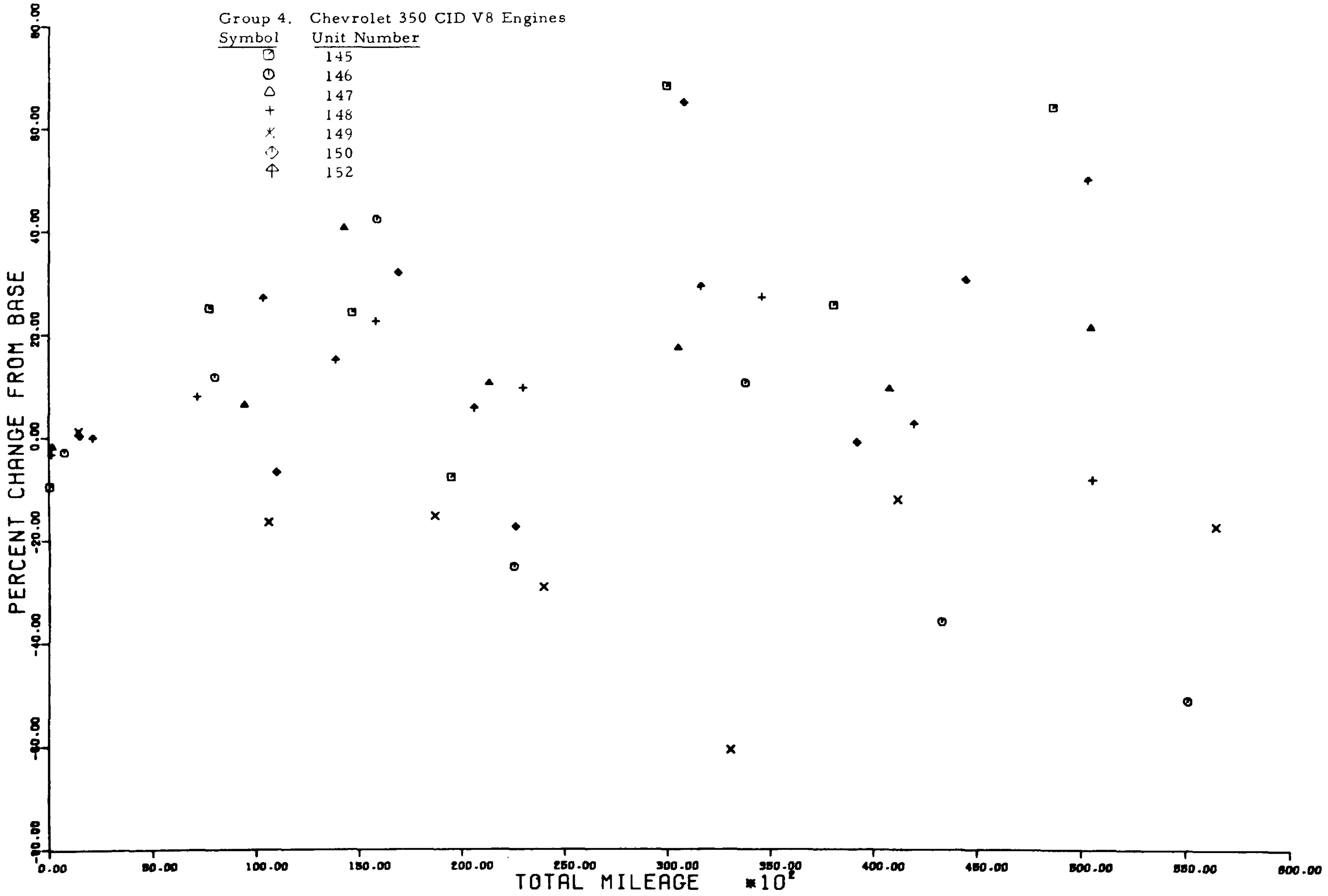



GROUP 3 NO CORRECTED

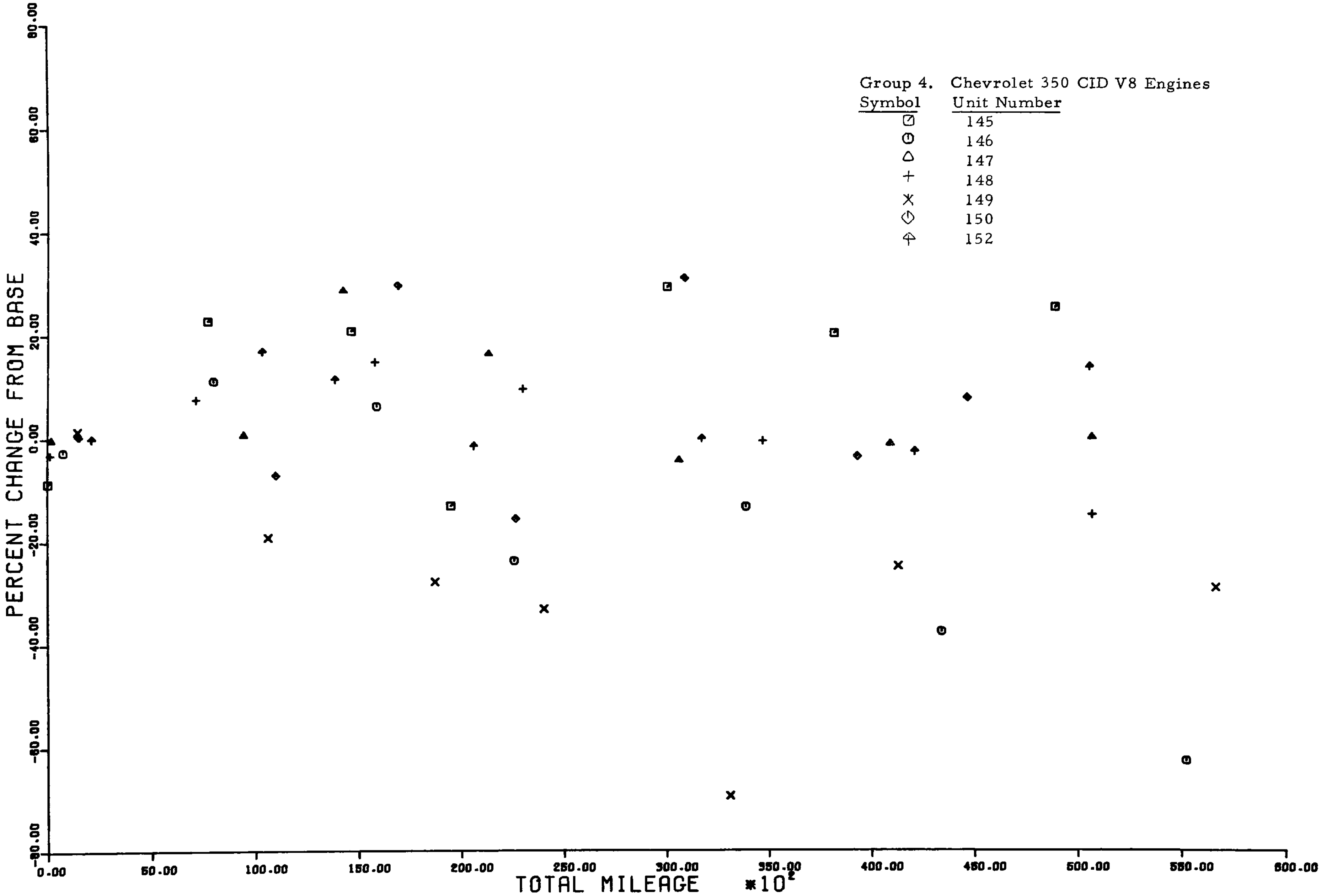

+119%
+142%
+122%
+164%
+108%
+192%
+175%
Group 4. Chevrolet 350 CID V8 Engines
Symbol Unit Number
145
146
147
148
149
150
152
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE $*10^2$
GROUP 4 HC


PERCENT CHANGE FROM BASE
TOTAL MILEAGE *10²
+116%
+121%
+105%
+127%
+195%
+394%
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
Group 4. Chevrolet 350 CID V8 Engines
Symbol
Unit Number
145
146
147
148
149
150
152

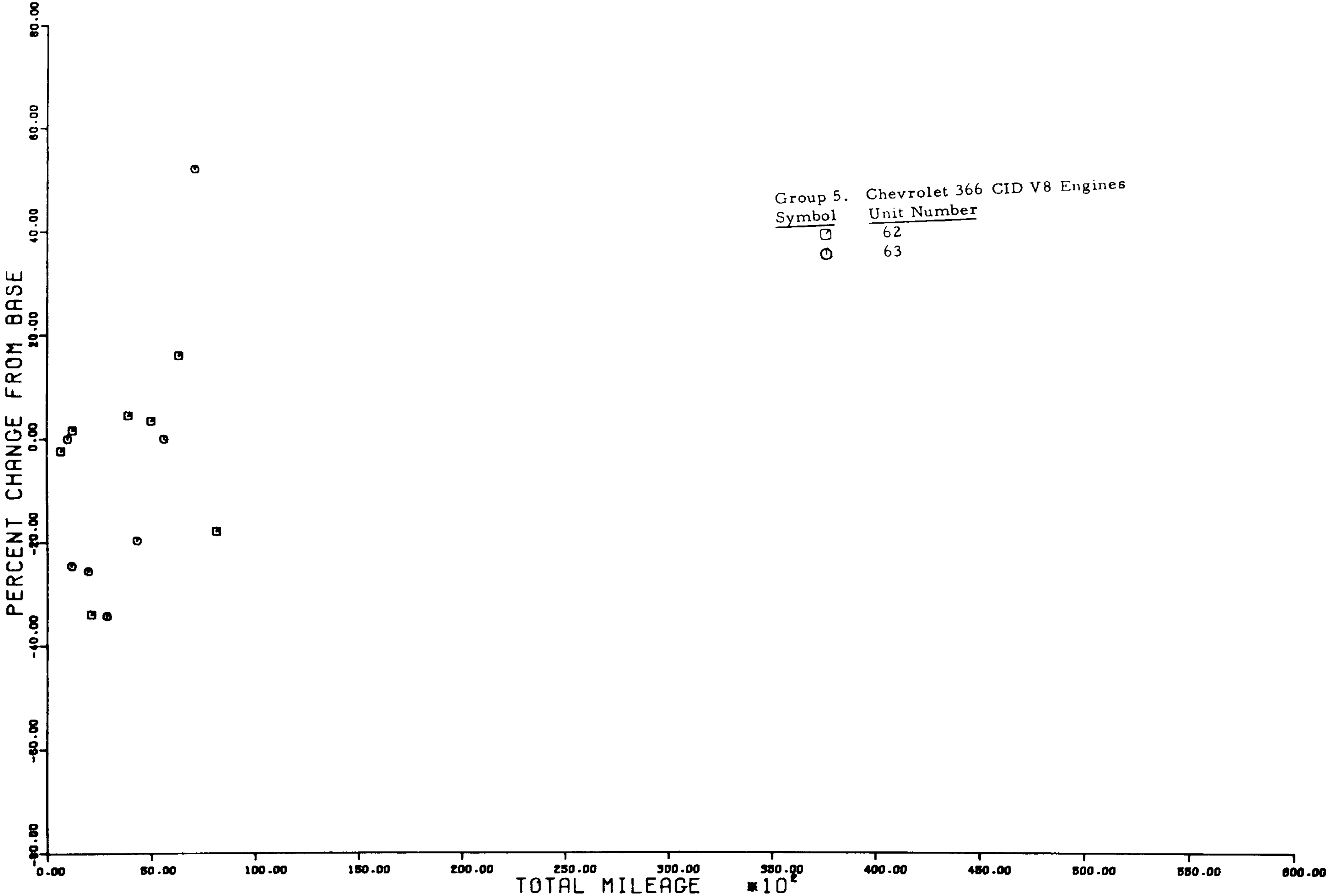
GROUP 4 CO



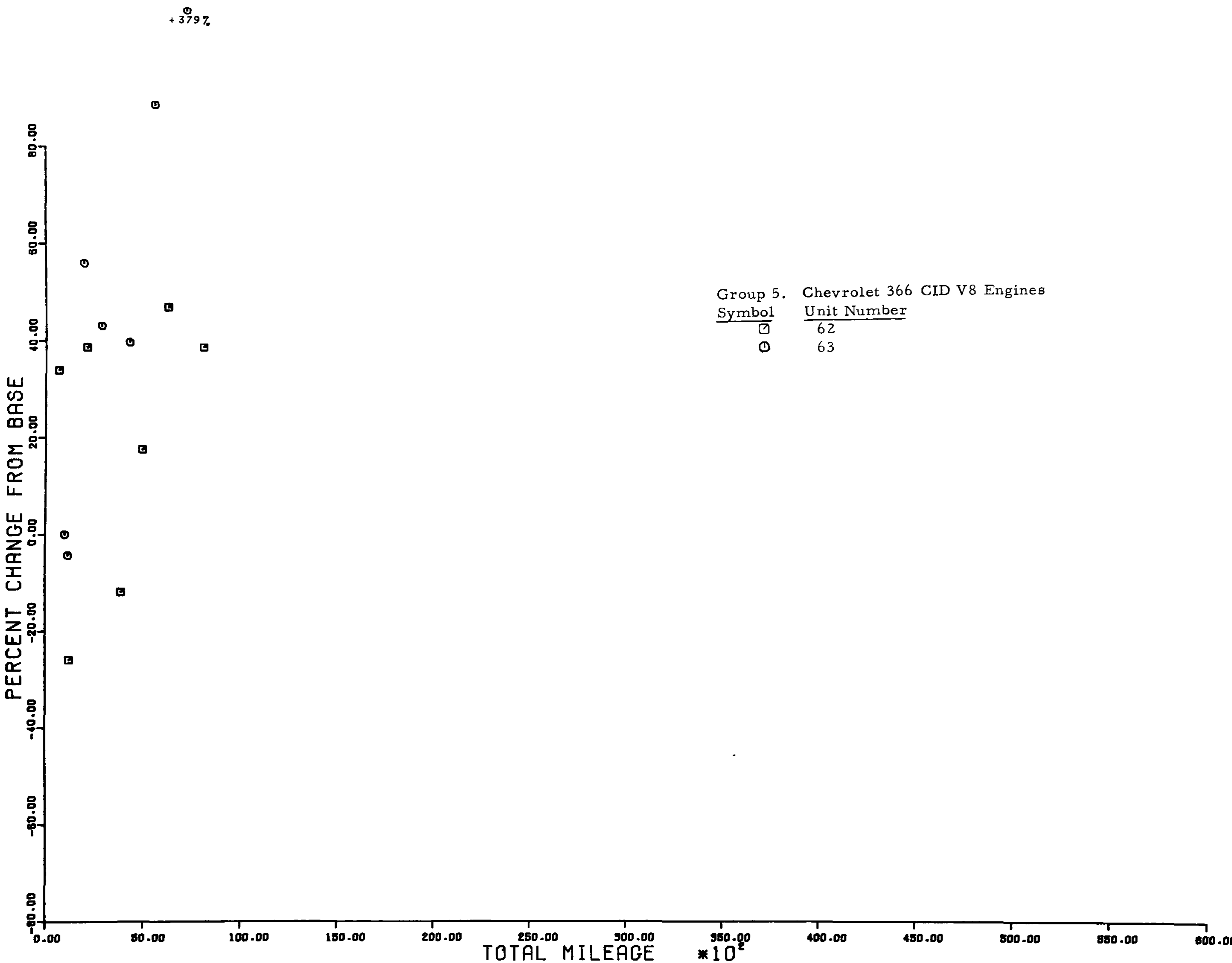

GROUP 4 NO (NOT CORRECTED)



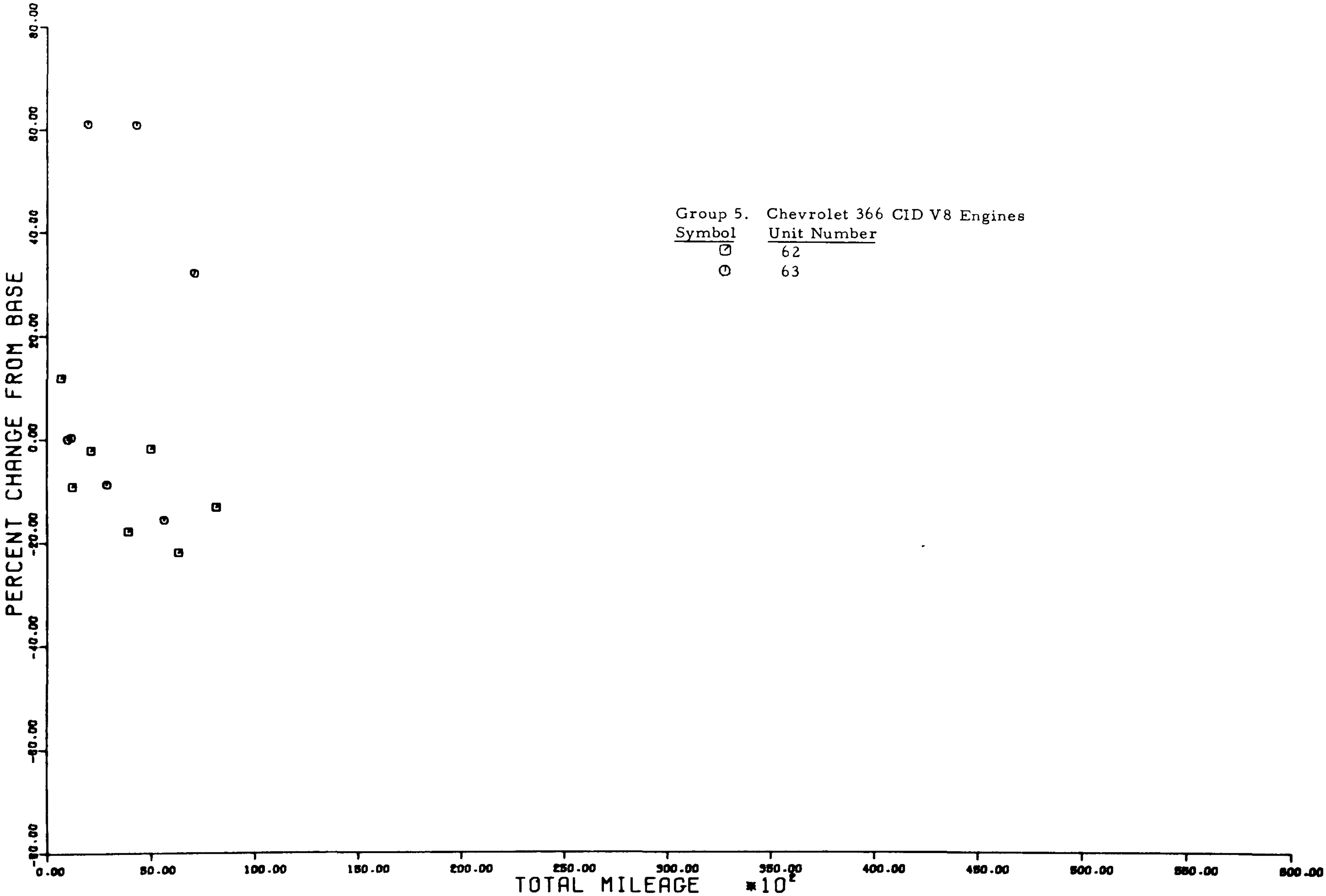

GROUP 4 NO CORRECTED


Group 5. Chevrolet 366 CID V8 Engines
Symbol Unit Number
62
63
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE $*10^2$

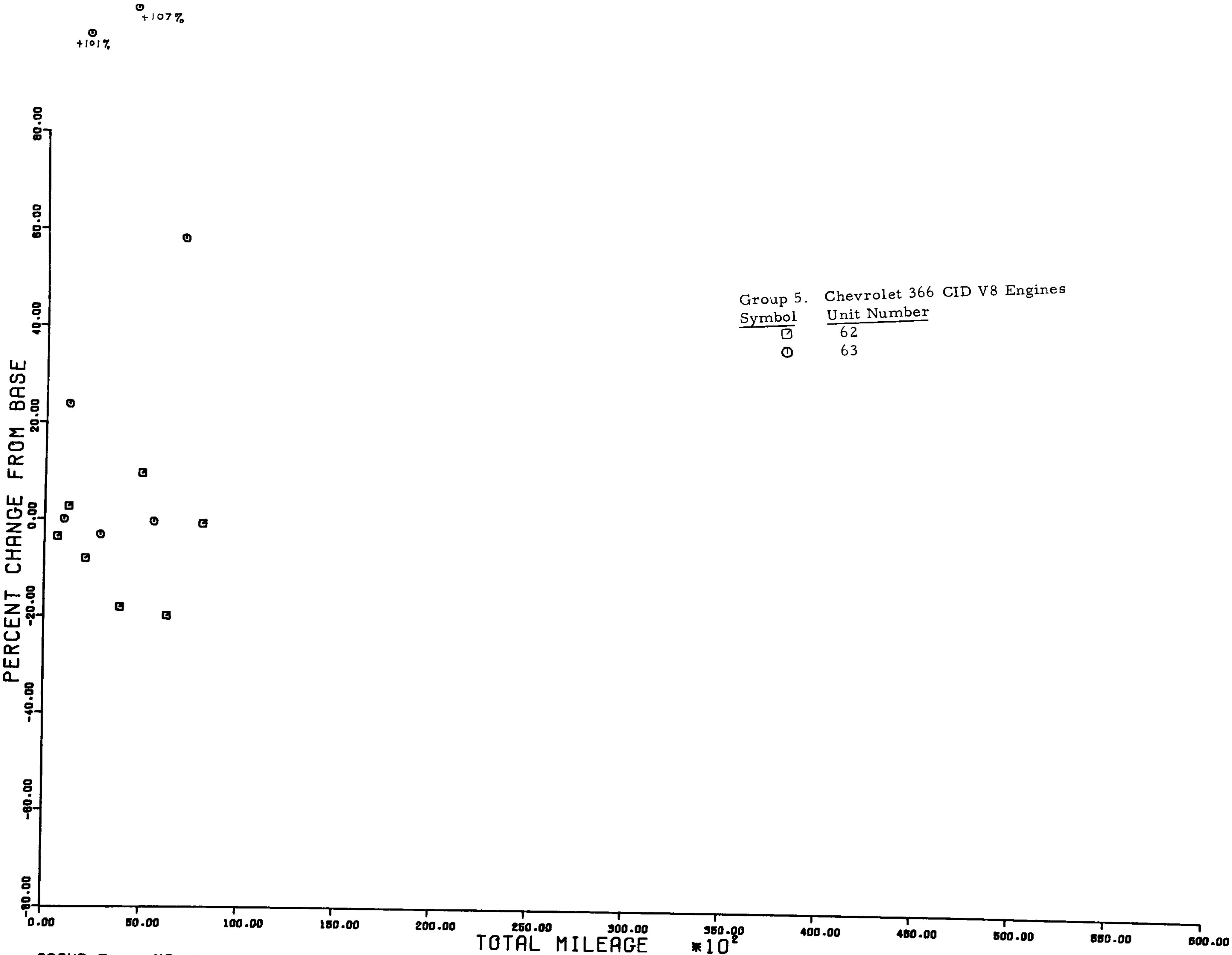
GROUP 5 HC


+379%
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
Group 5. Chevrolet 366 CID V8 Engines
Symbol Unit Number
62
63

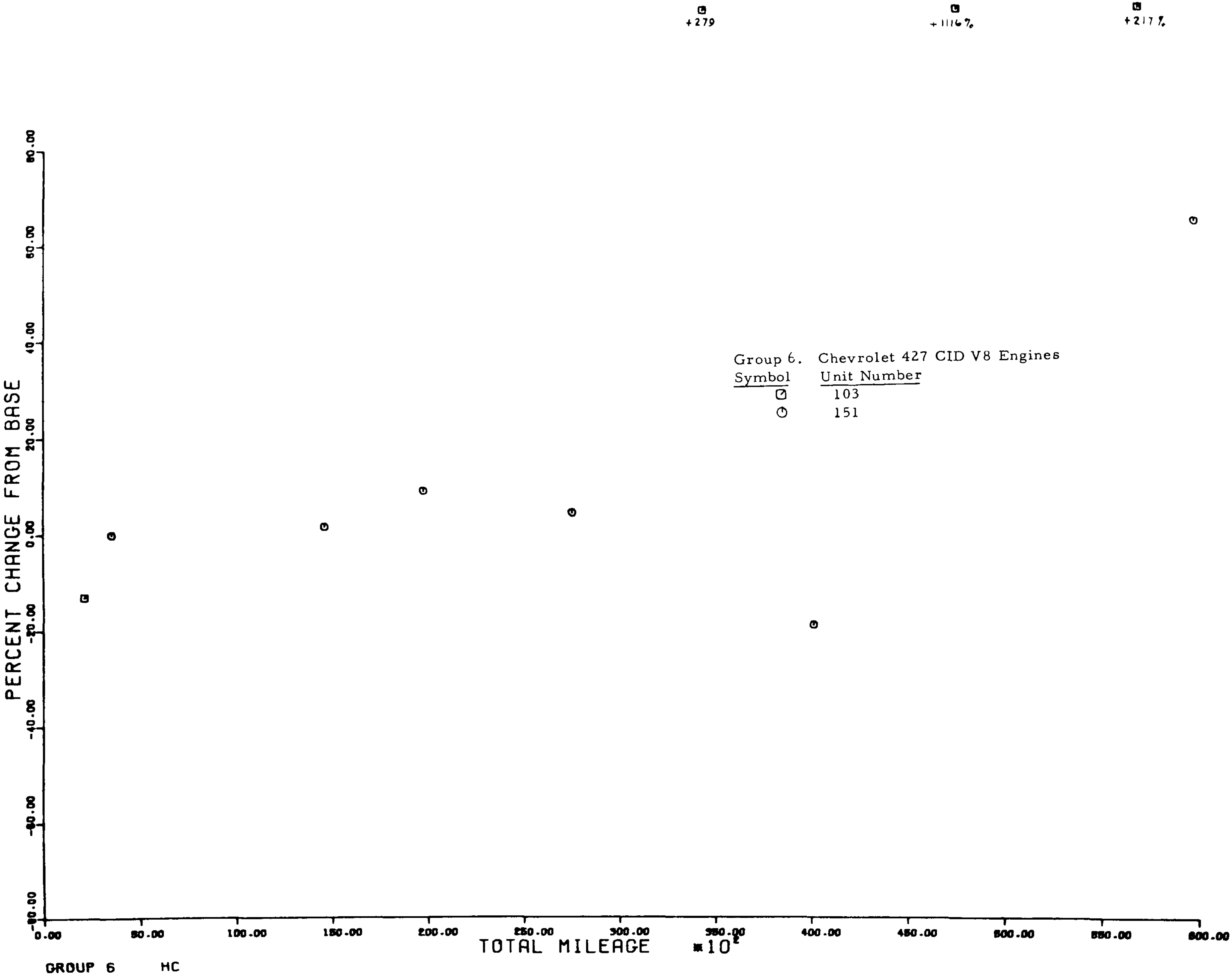
GROUP 5 CO

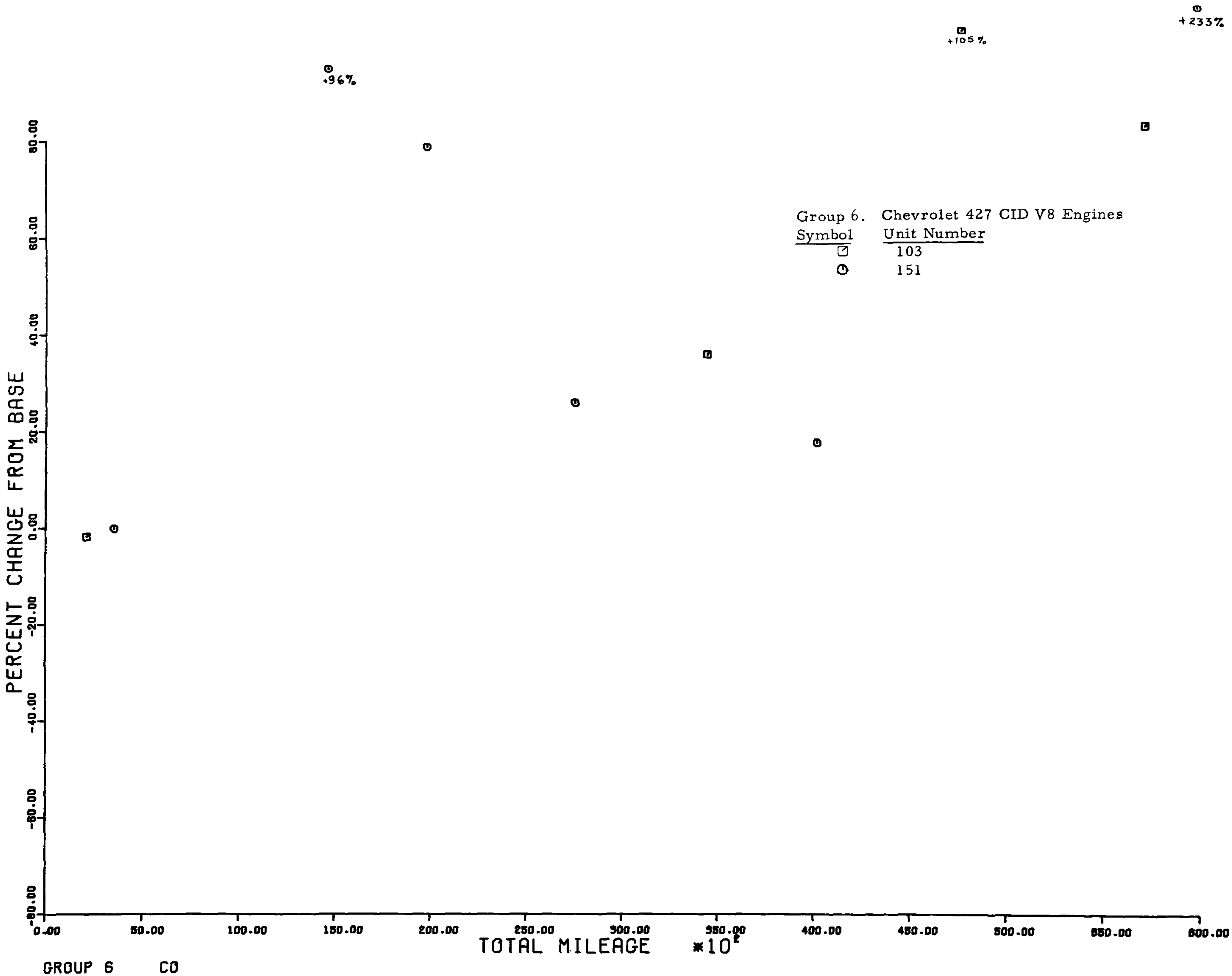



GROUP 5 NO (NOT CORRECTED)

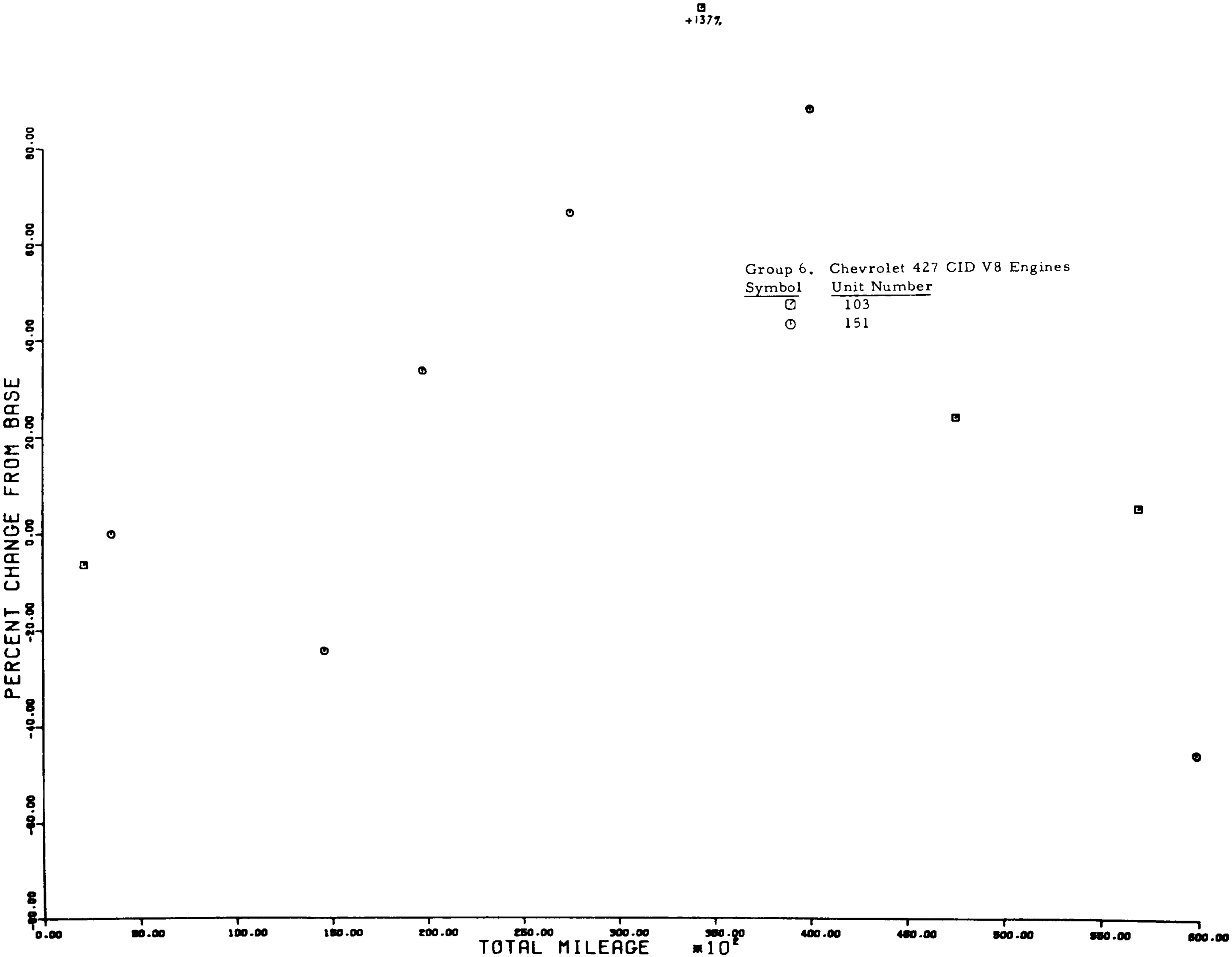



GROUP 5 NO CORRECTED

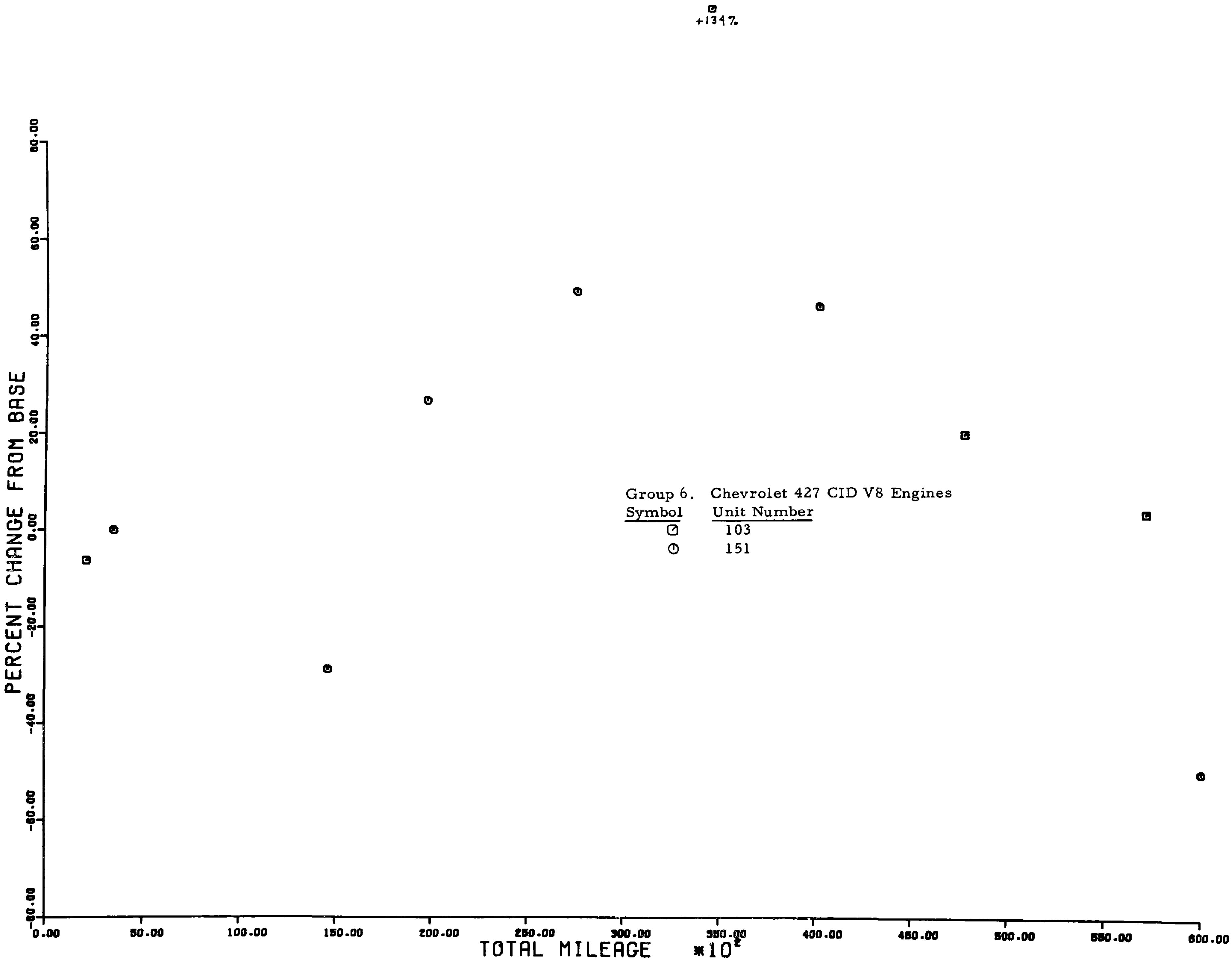

+279
+1116%
+217%
Group 6. Chevrolet 427 CID V8 Engines
Symbol Unit Number
103
151
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
GROUP 6 HC



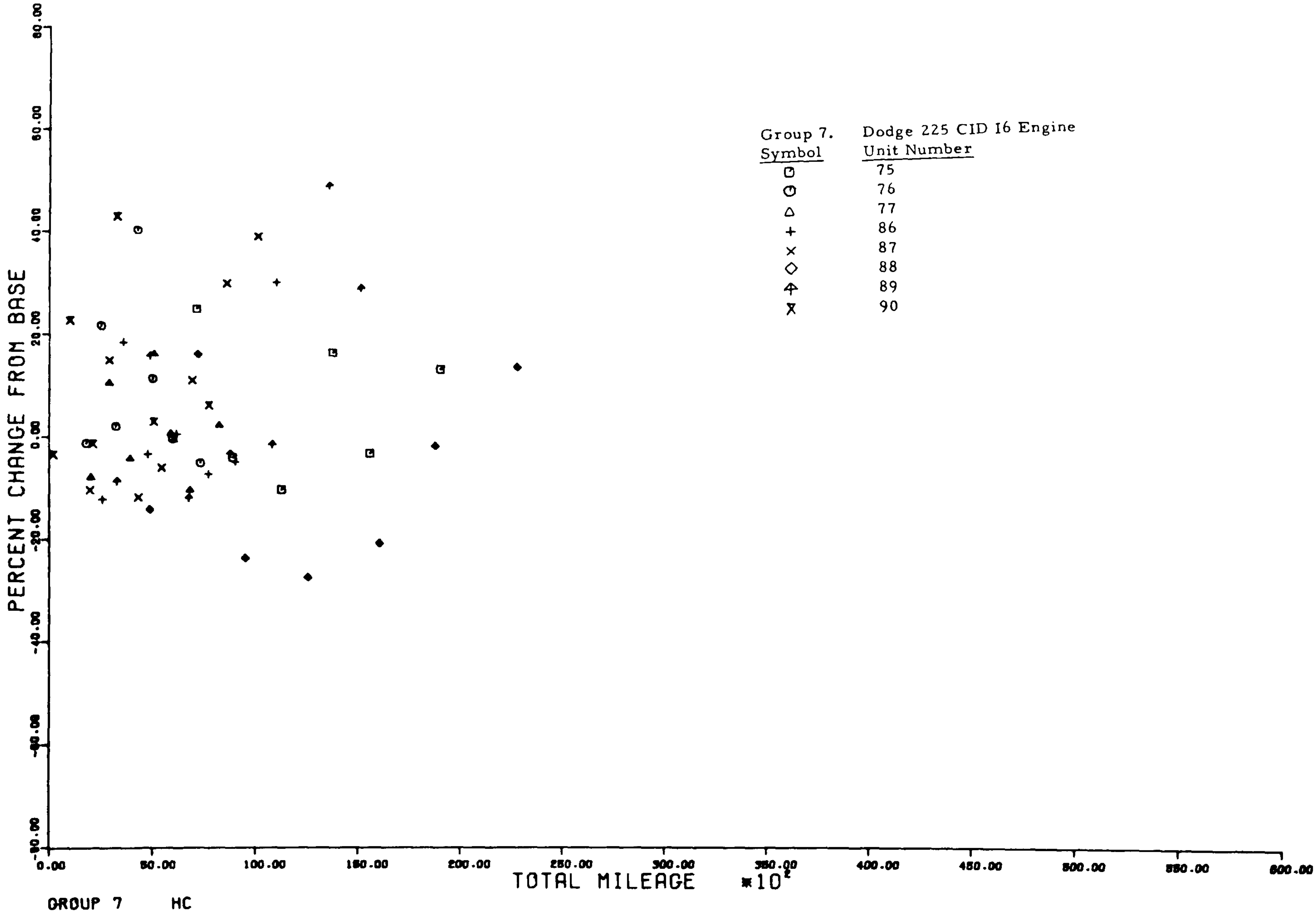
+96%
+105%
+233%
Group 6. Chevrolet 427 CID V8 Engines
Symbol Unit Number
103
151
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
PERCENT CHANGE FROM BASE
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE $*10^2$
GROUP 6 CO

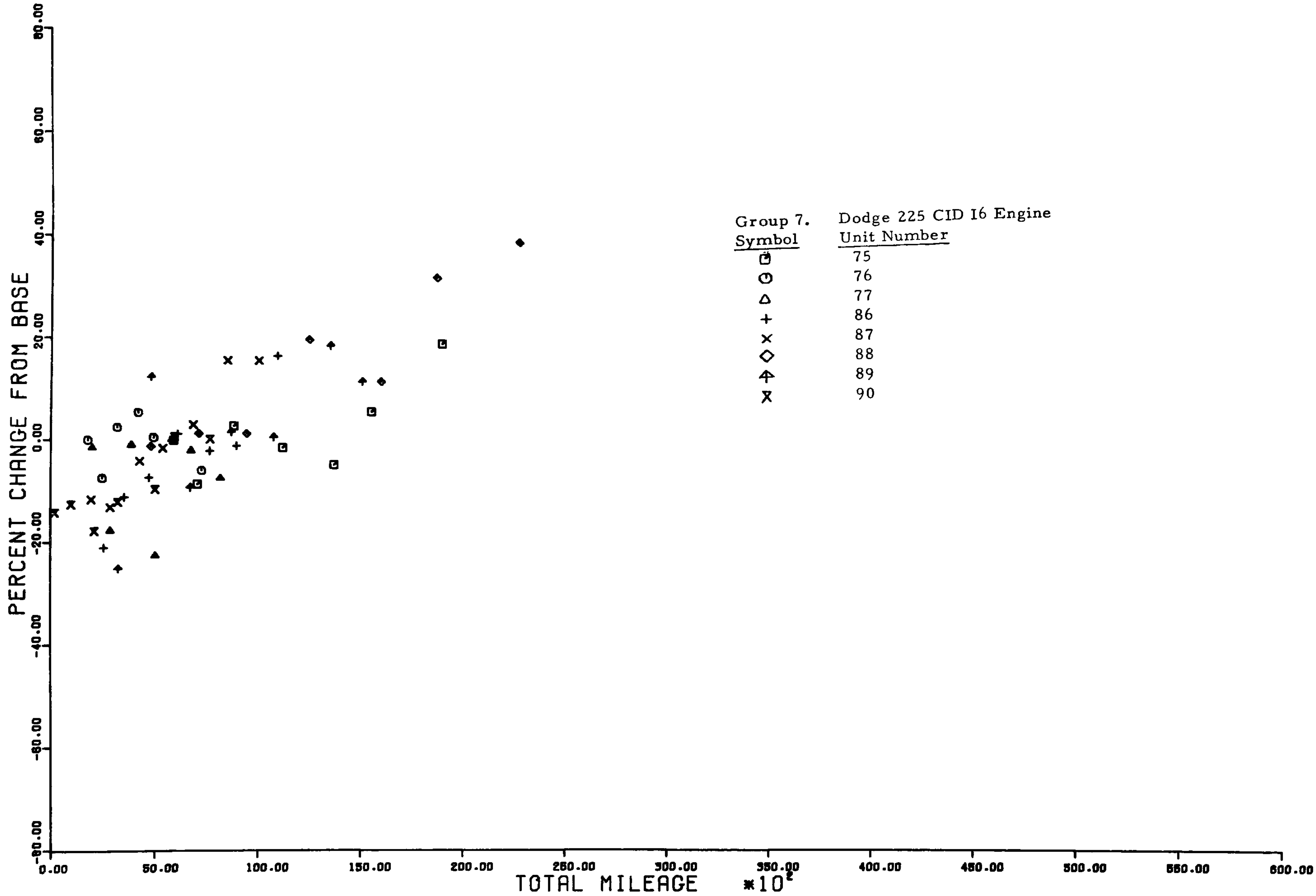



GROUP 6 NO (NOT CORRECTED)



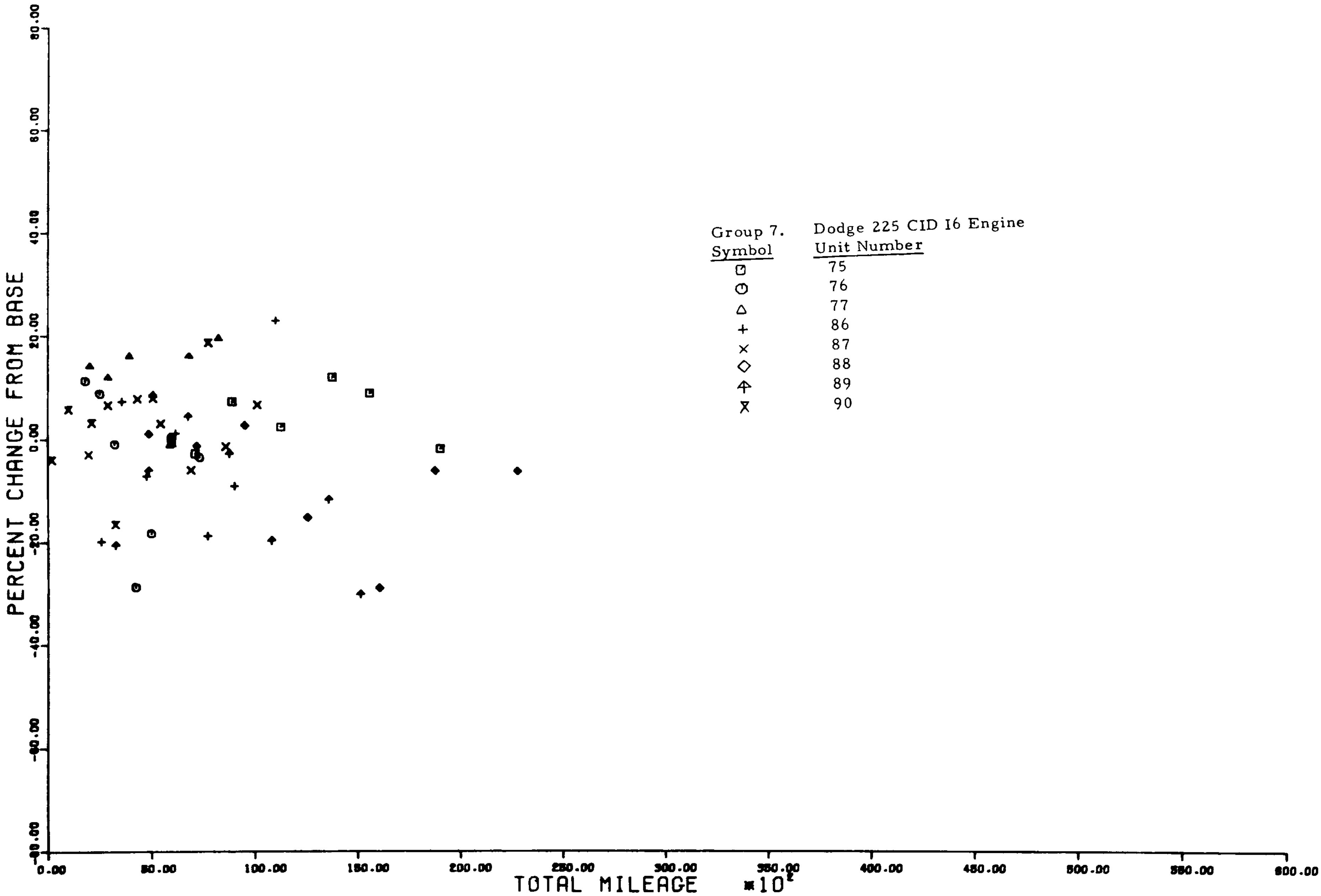

GROUP 6 NO CORRECTED


Group 7. Dodge 225 CID I6 Engine
Symbol Unit Number
75
76
77
86
87
88
89
90
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
GROUP 7 HC

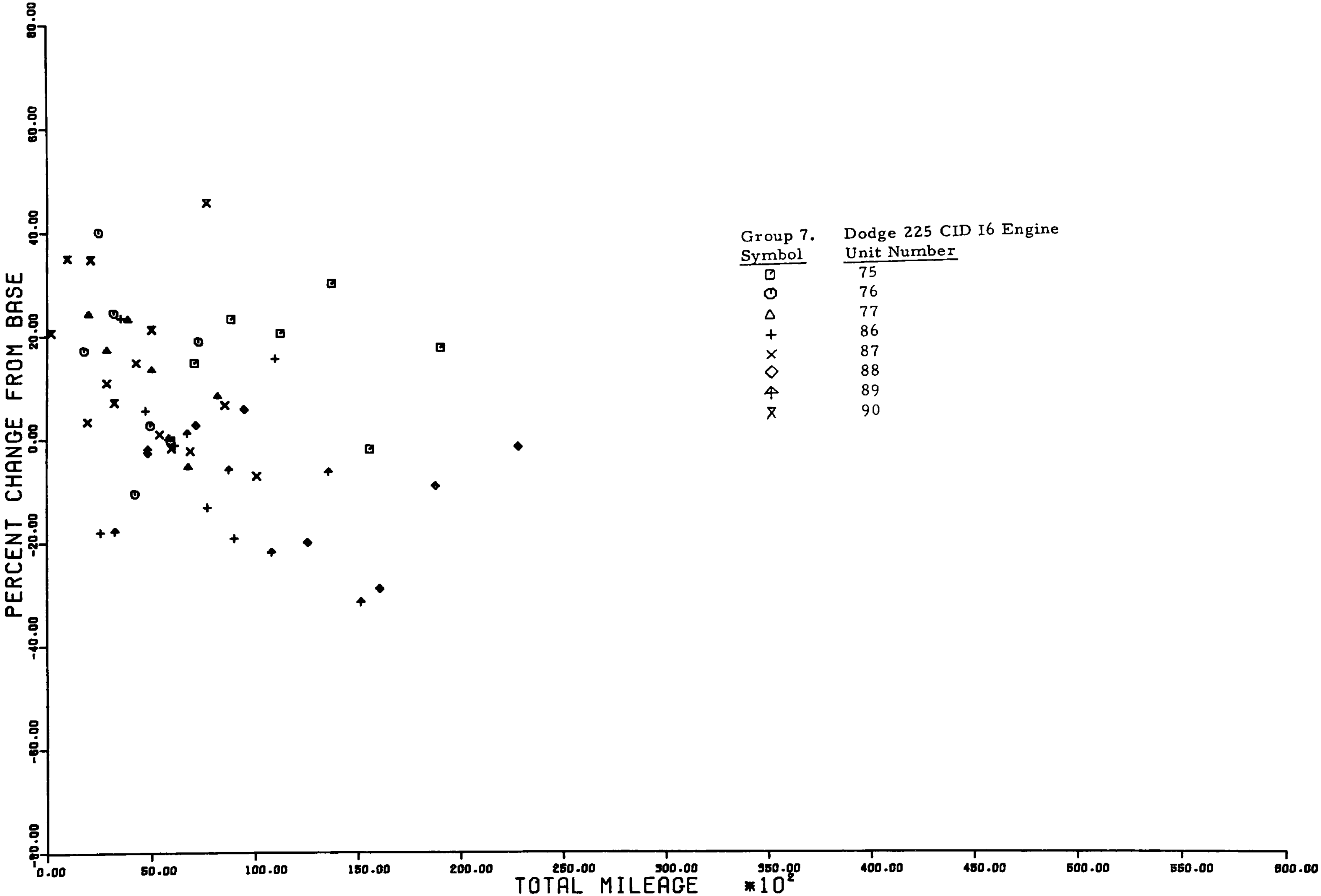


PERCENT CHANGE FROM BASE
TOTAL MILEAGE *10²
Group 7. Symbol
Dodge 225 CID I6 Engine Unit Number
75
76
77
86
87
88
89
90

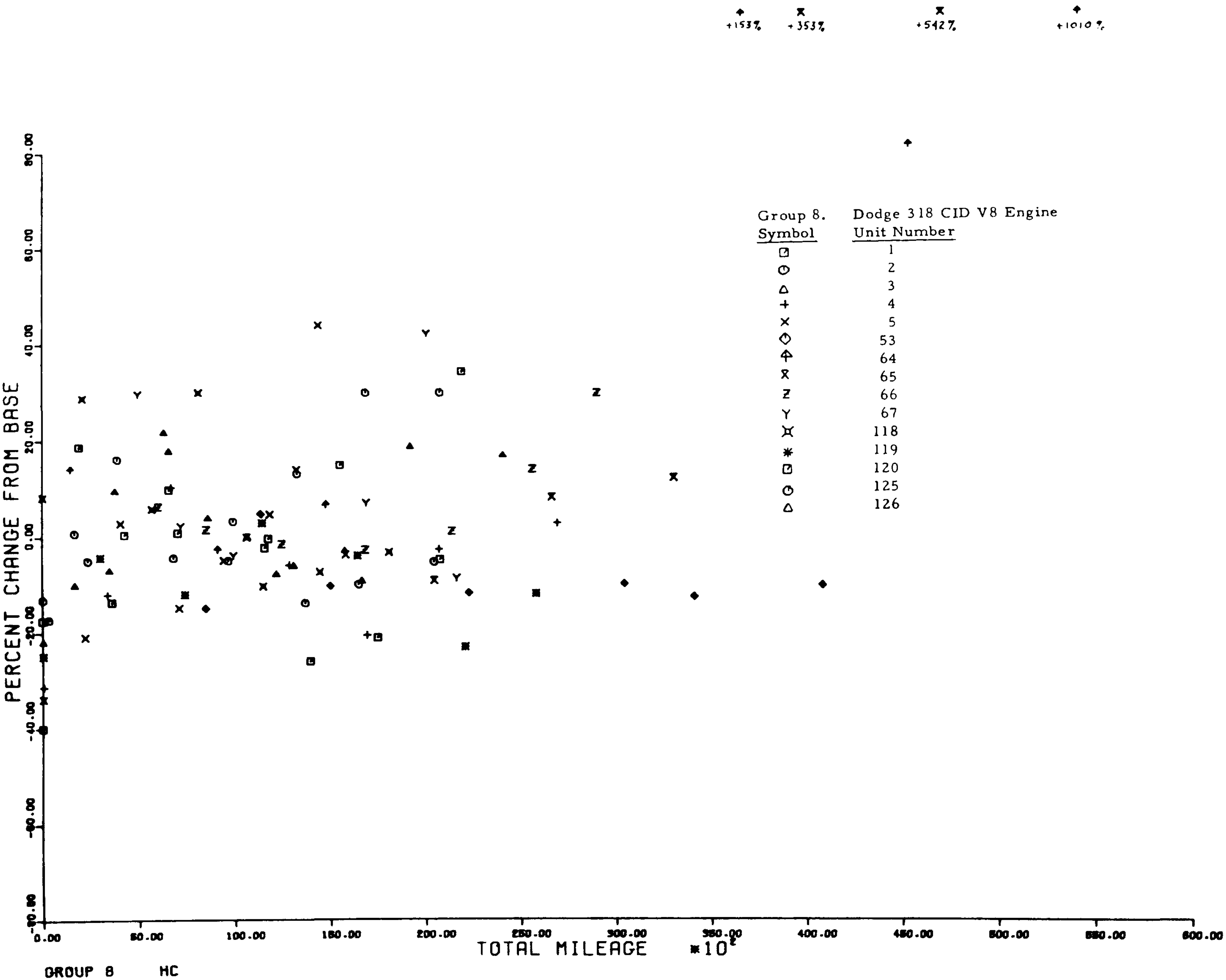

GROUP 7 CO

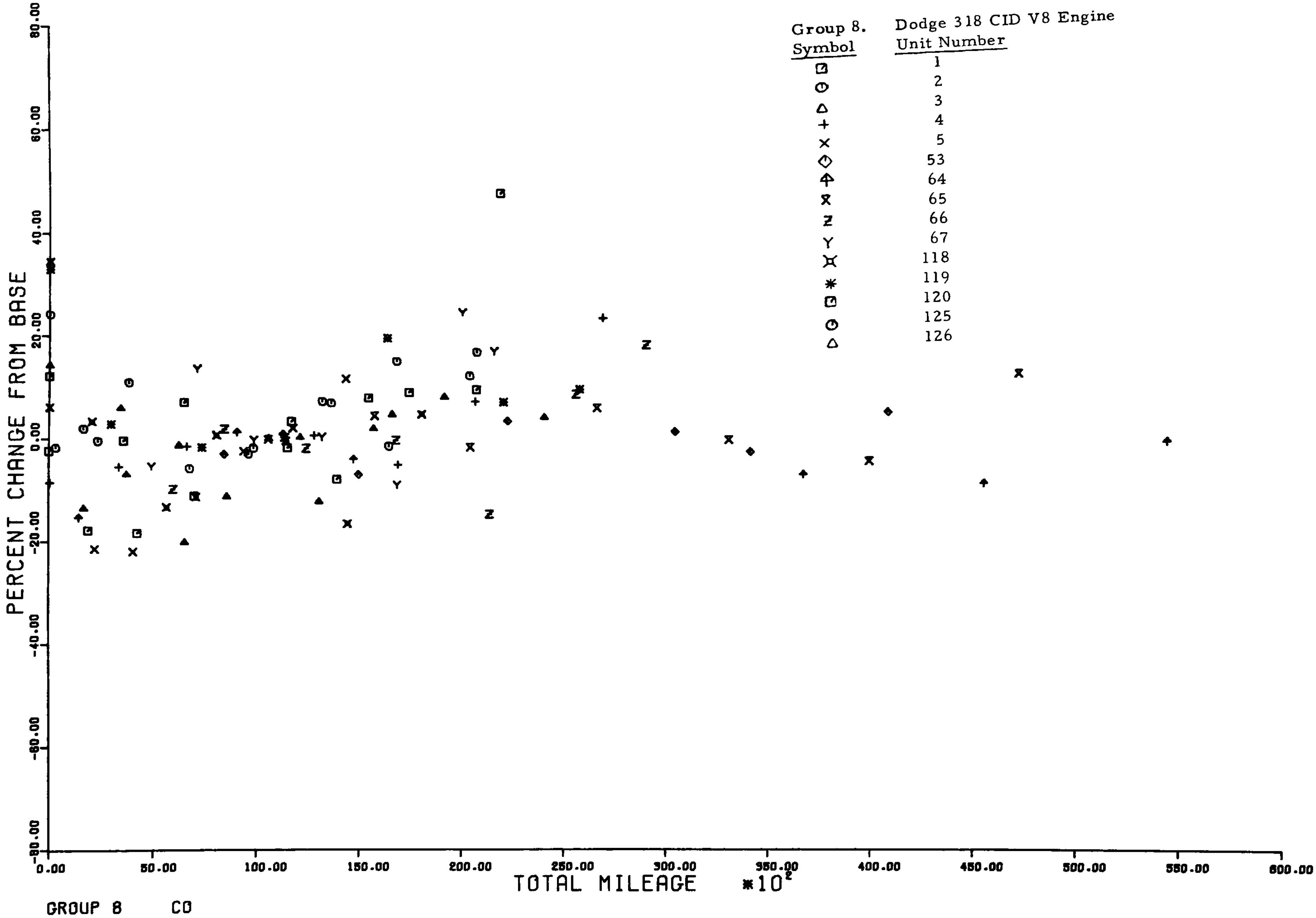



GROUP 7 NO (NOT CORRECTED)

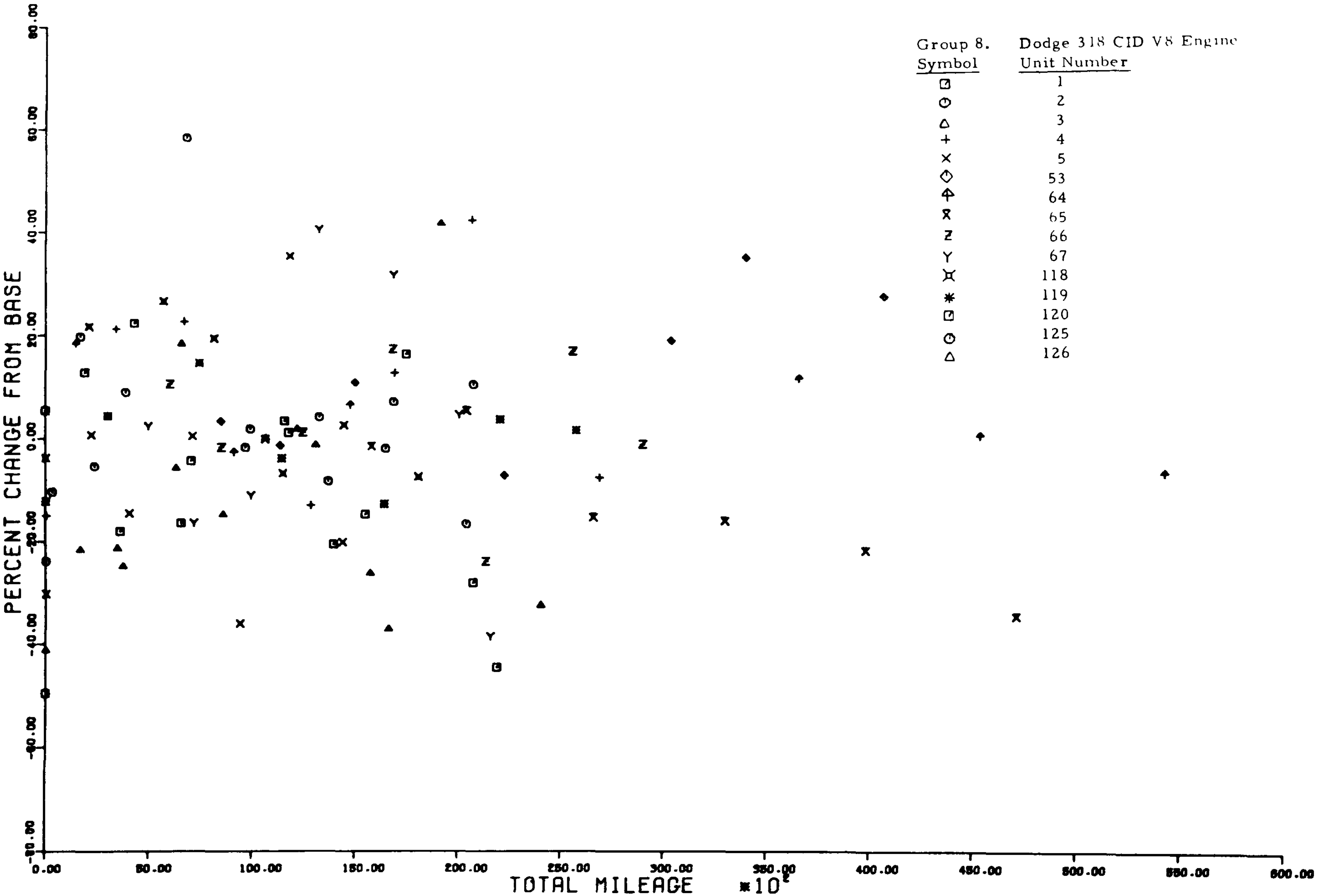



GROUP 7 NO CORRECTED

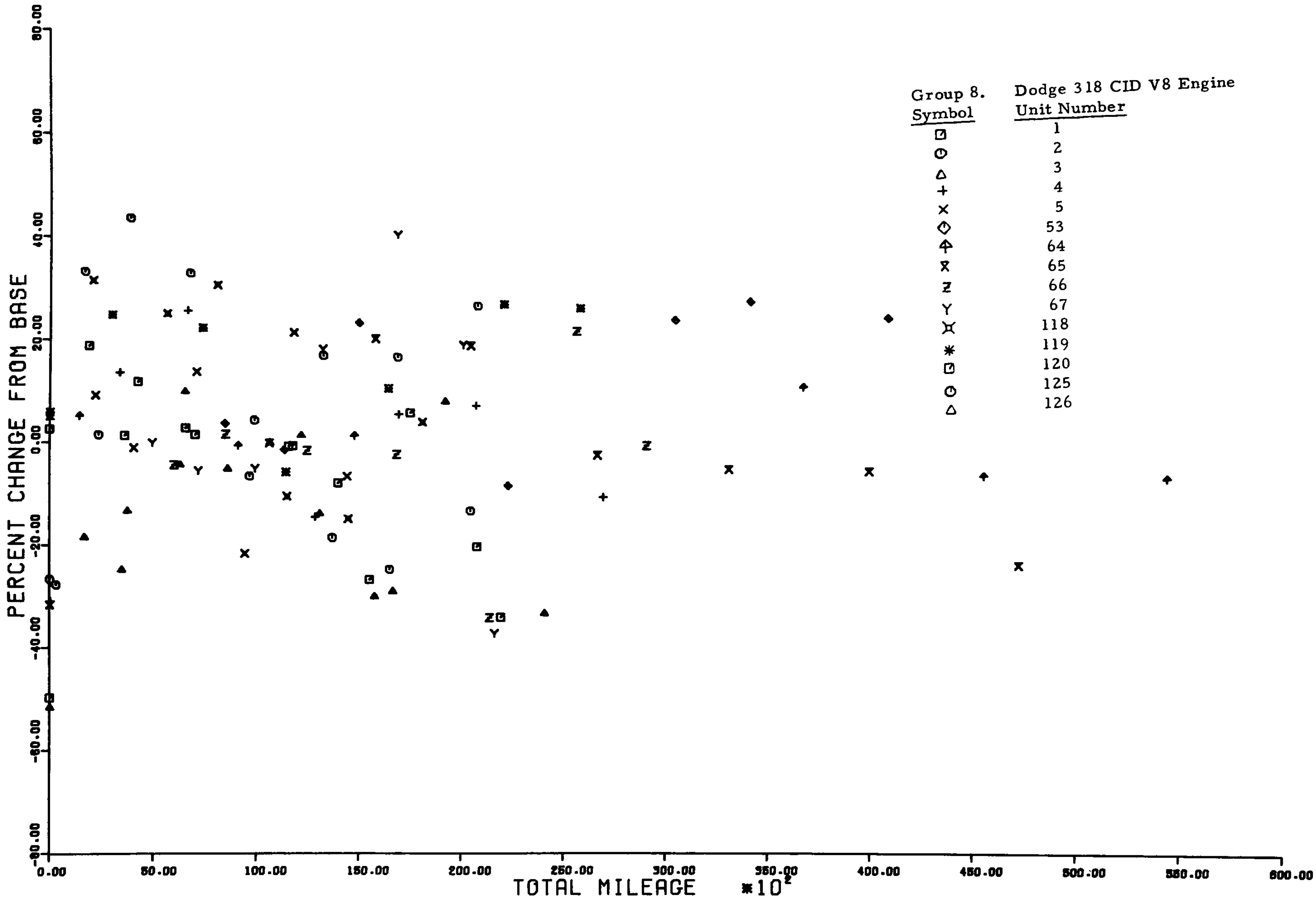

+153%
+353%
+542%
+1010%
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
Group 8. Symbol
Dodge 318 CID V8 Engine Unit Number
1
2
3
4
5
53
64
65
66
67
118
119
120
125
126
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
GROUP 8 HC



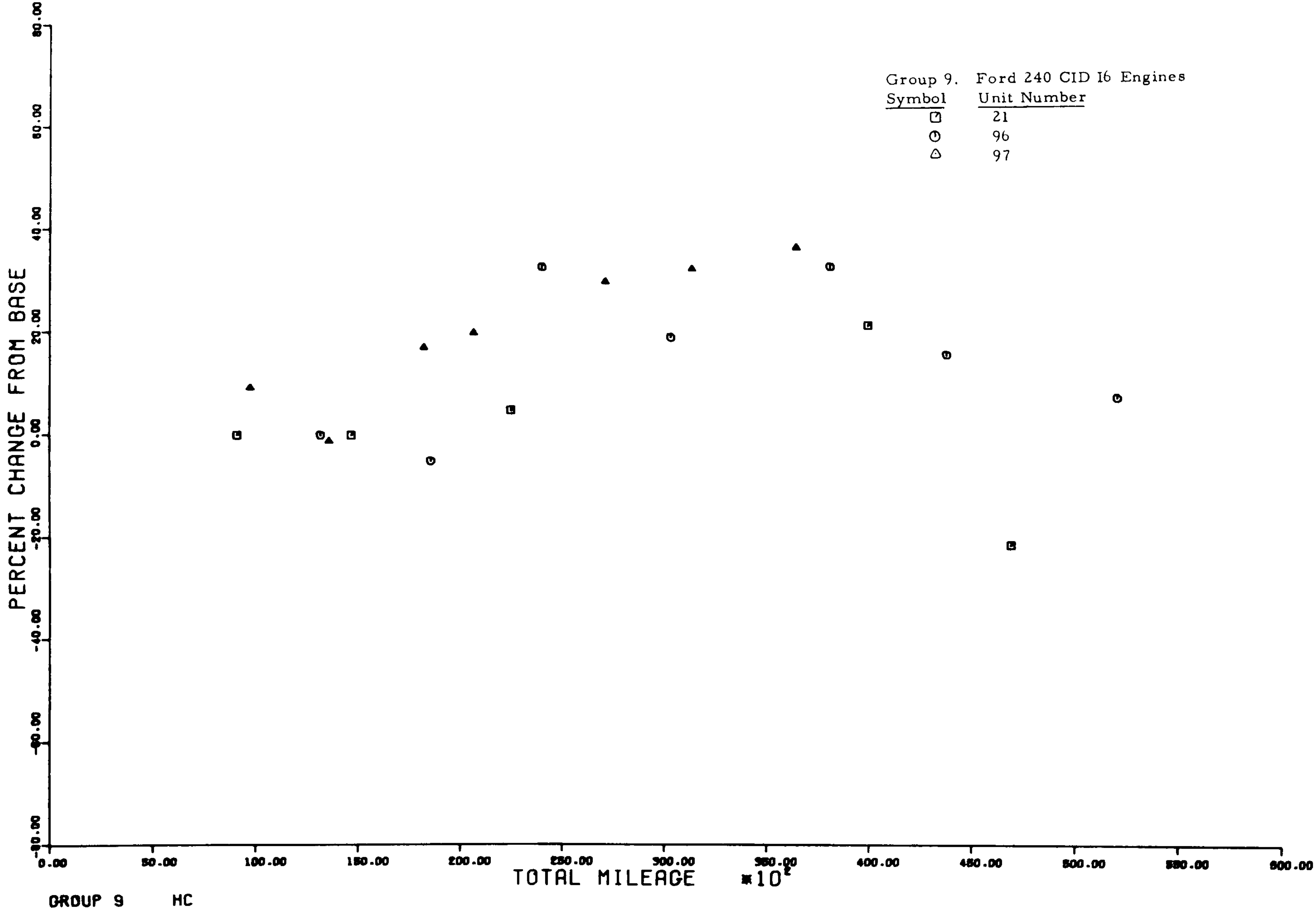
Group 8.
Symbol
Dodge 318 CID V8 Engine
Unit Number
1
2
3
4
5
53
64
65
66
67
118
119
120
125
126
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
GROUP 8 CO



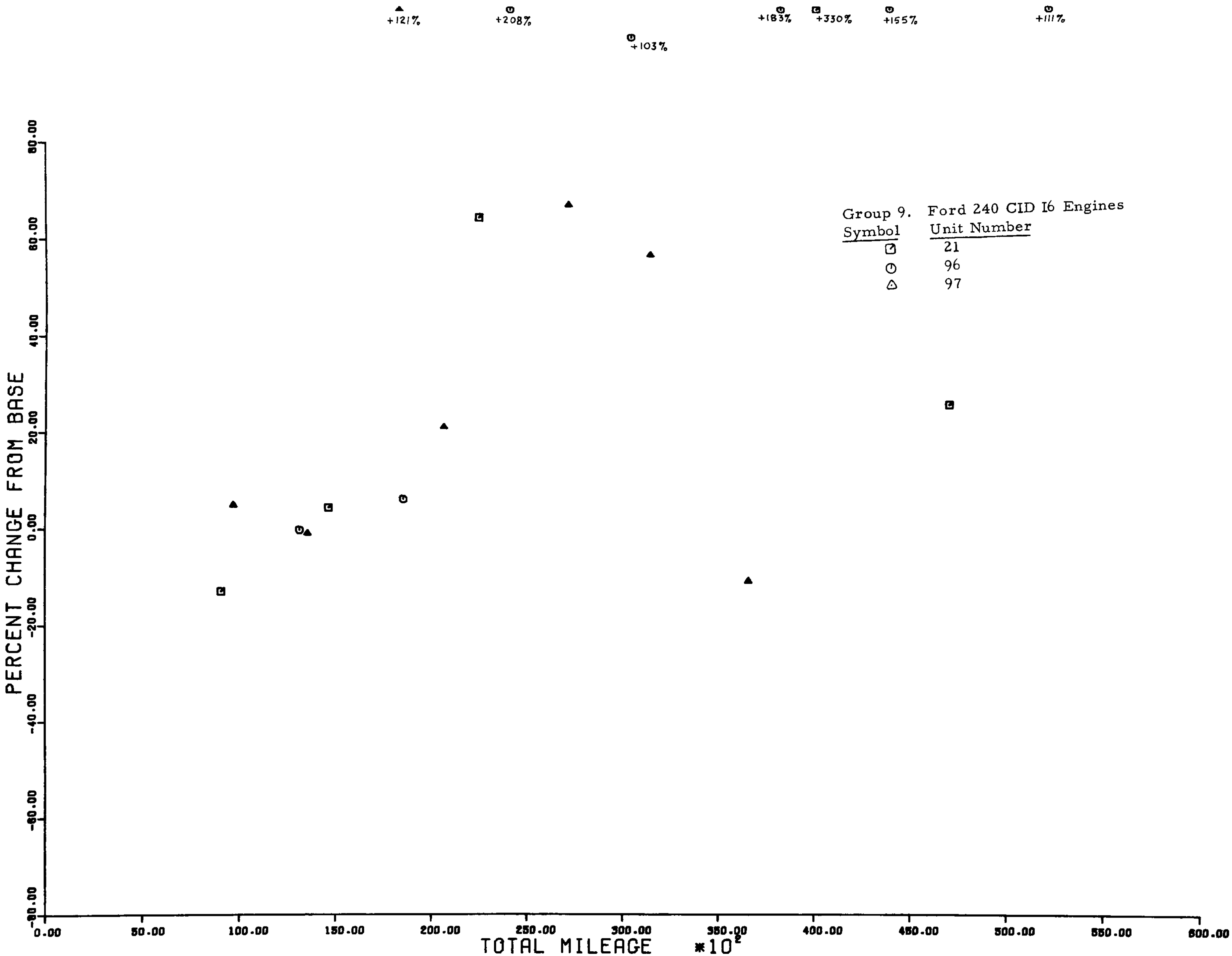

GROUP 8 NO (NOT CORRECTED)



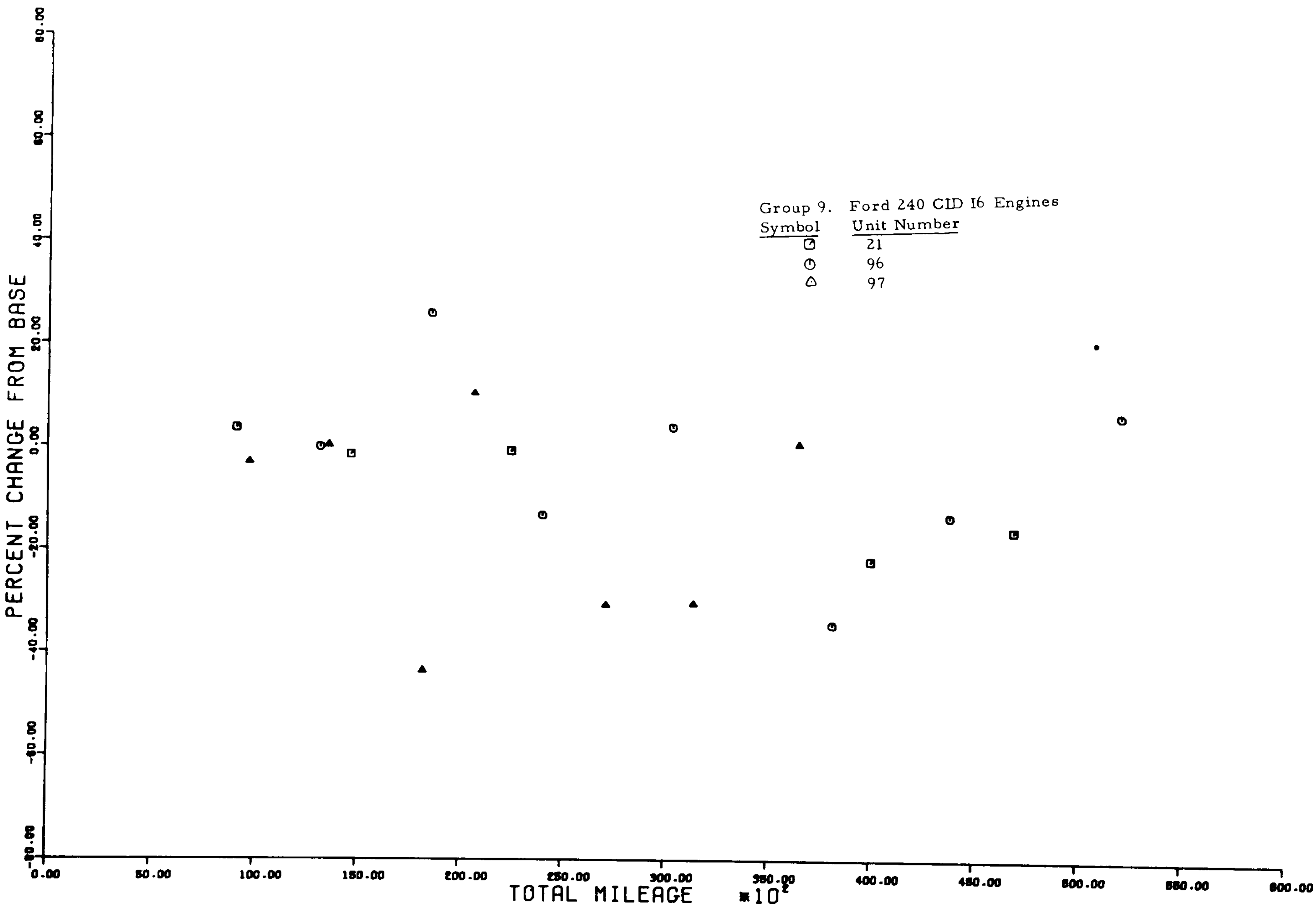

GROUP 8 NO CORRECTED



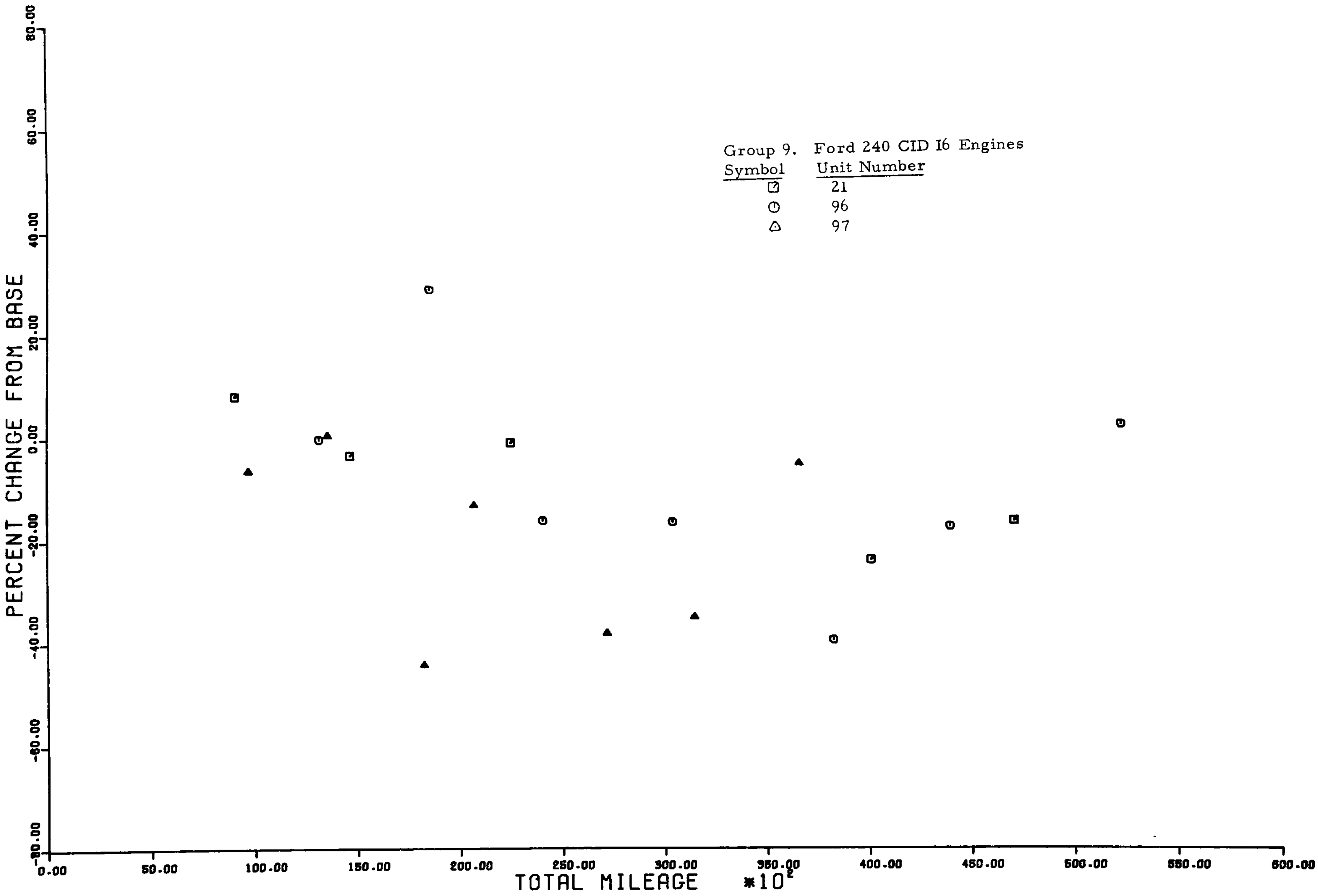
Group 9. Ford 240 CID I6 Engines
Symbol Unit Number
21
96
97
PERCENT CHANGE FROM BASE
TOTAL MILEAGE *10²
GROUP 9 HC


+121%
+208%
+103%
+183%
+330%
+155%
+111%
Group 9. Ford 240 CID I6 Engines
Symbol
Unit Number
21
96
97
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²

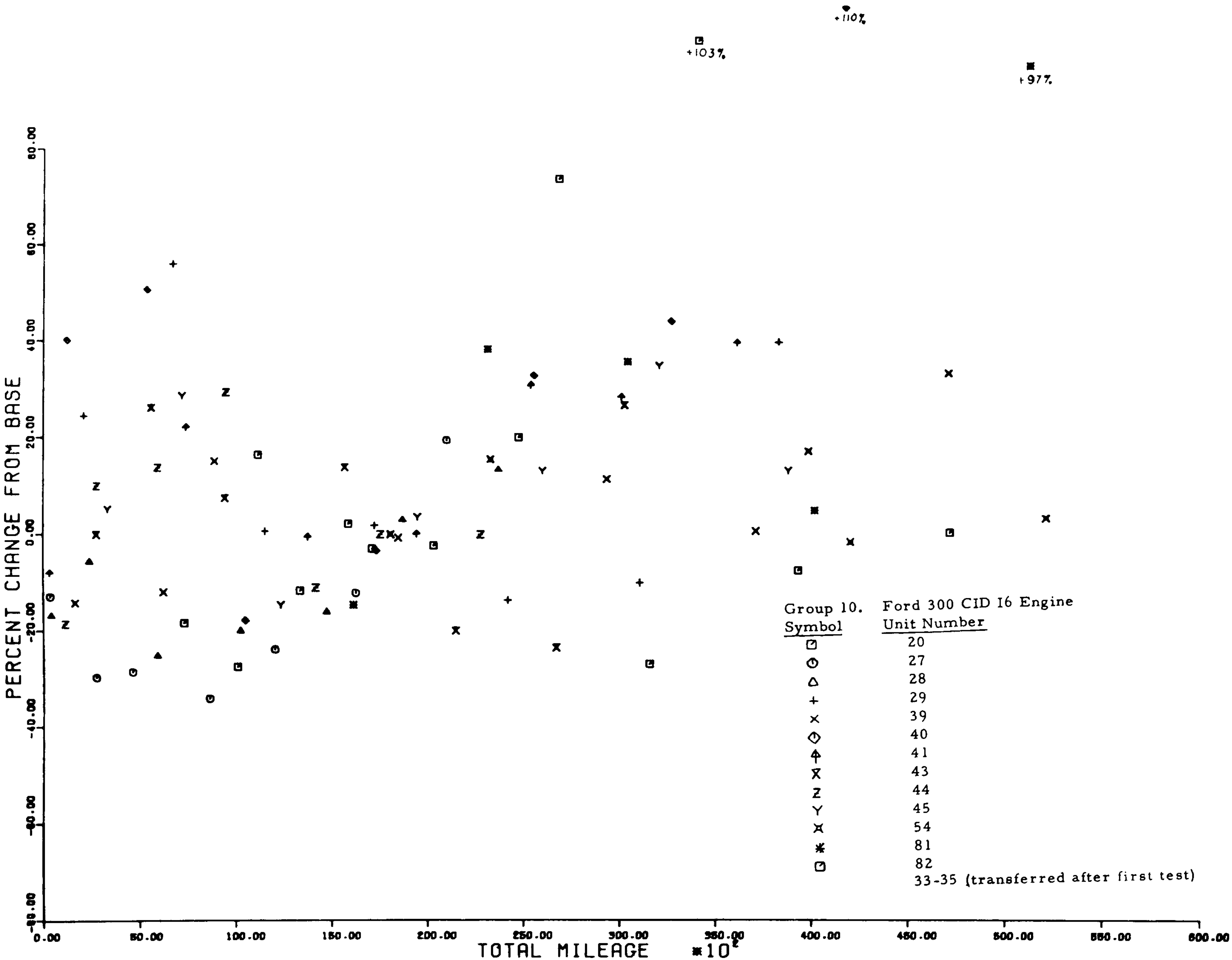
GROUP 9 CO



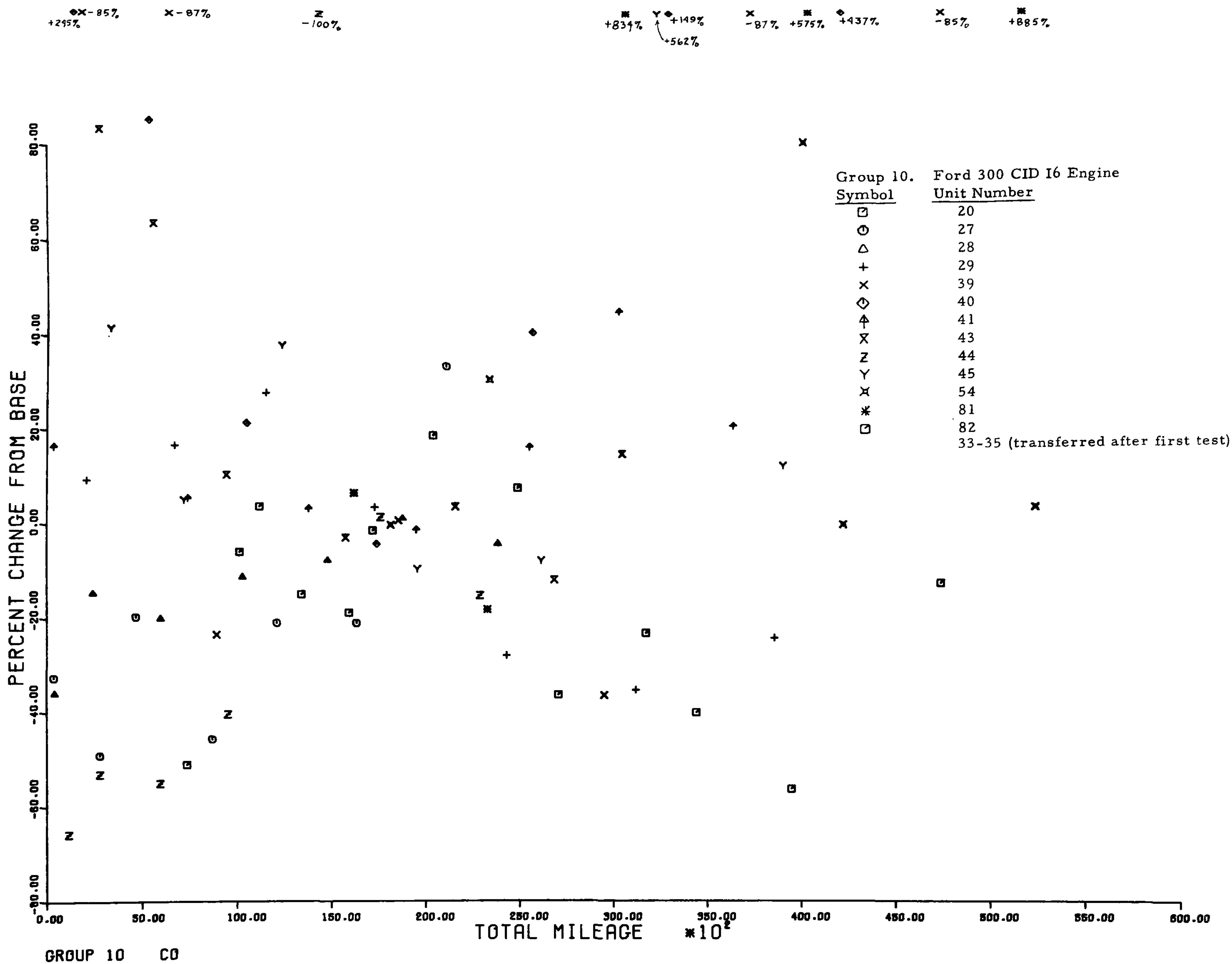

GROUP 9 NO (NOT CORRECTED)



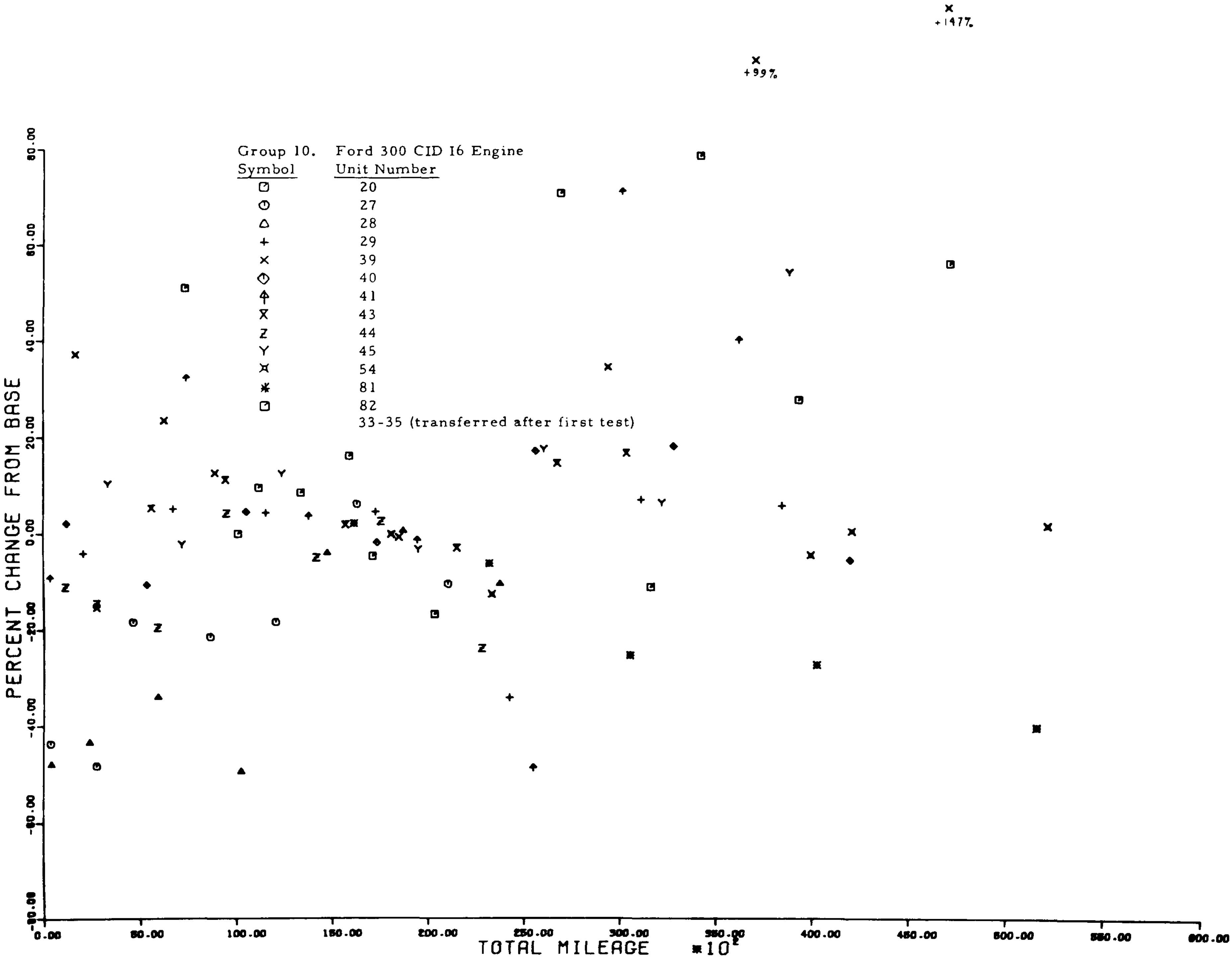

GROUP 9 NO CORRECTED


+110%
+103%
+97%
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
Group 10. Symbol
Ford 300 CID I6 Engine Unit Number
20
27
28
29
39
40
41
43
44
45
54
81
82
33-35 (transferred after first test)

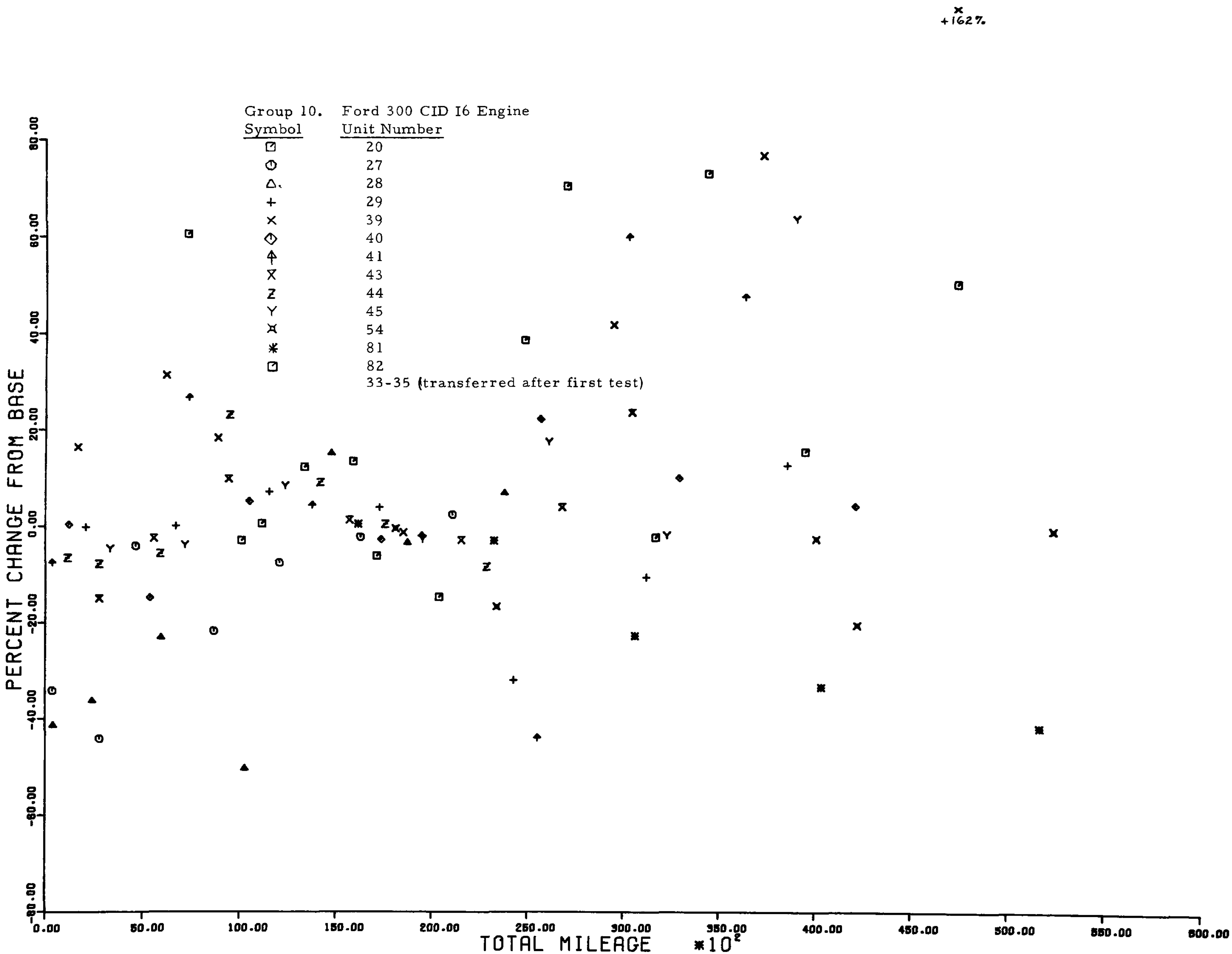
GROUP 10 HC



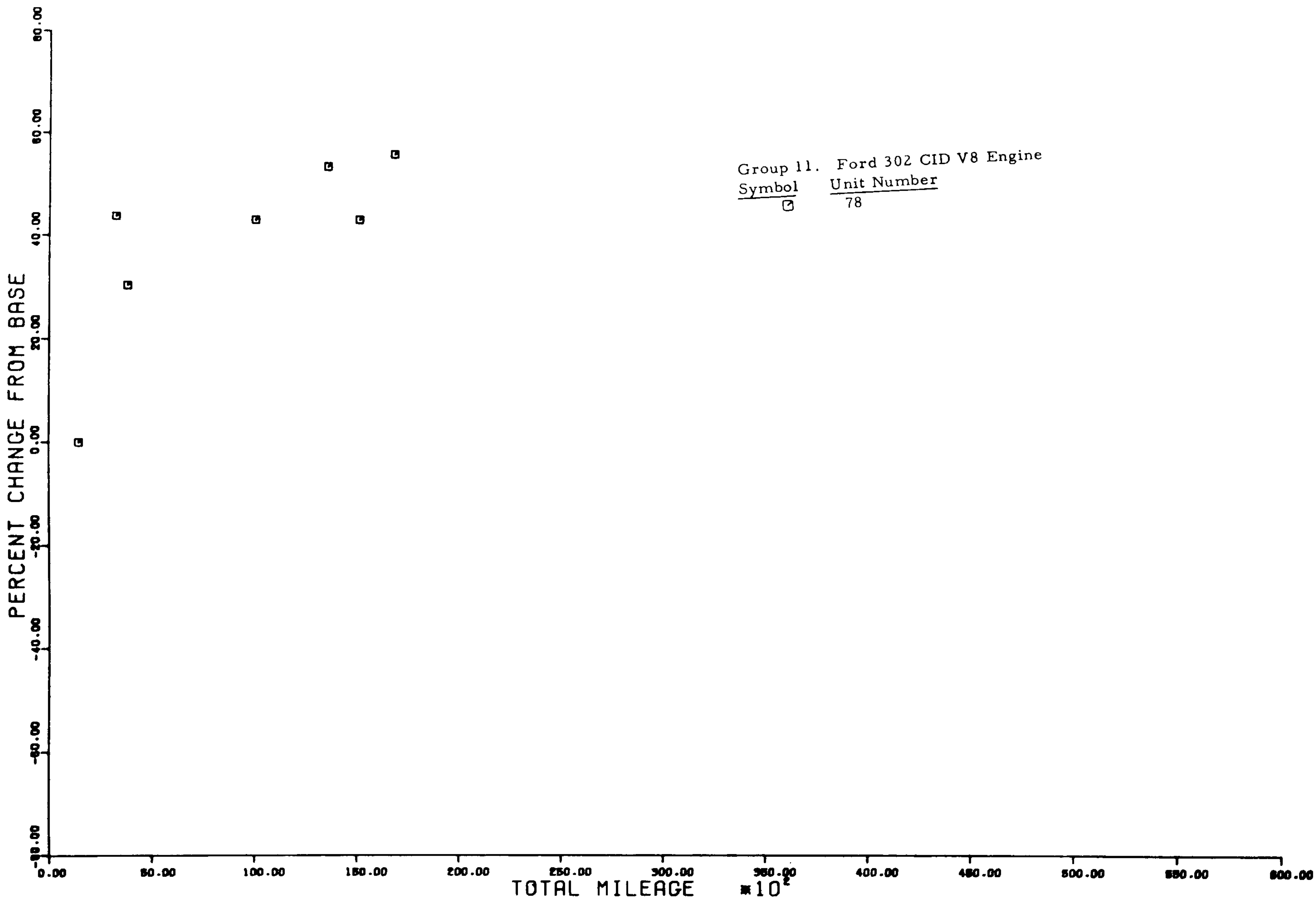
+295%
-85%
-87%
-100%
+834%
+149%
+562%
-87%
+575%
+437%
-85%
+885%
Group 10. Symbol
Ford 300 CID I6 Engine Unit Number
20
27
28
29
39
40
41
43
44
45
54
81
82
33-35 (transferred after first test)
PERCENT CHANGE FROM BASE
TOTAL MILEAGE *10²
GROUP 10 CO



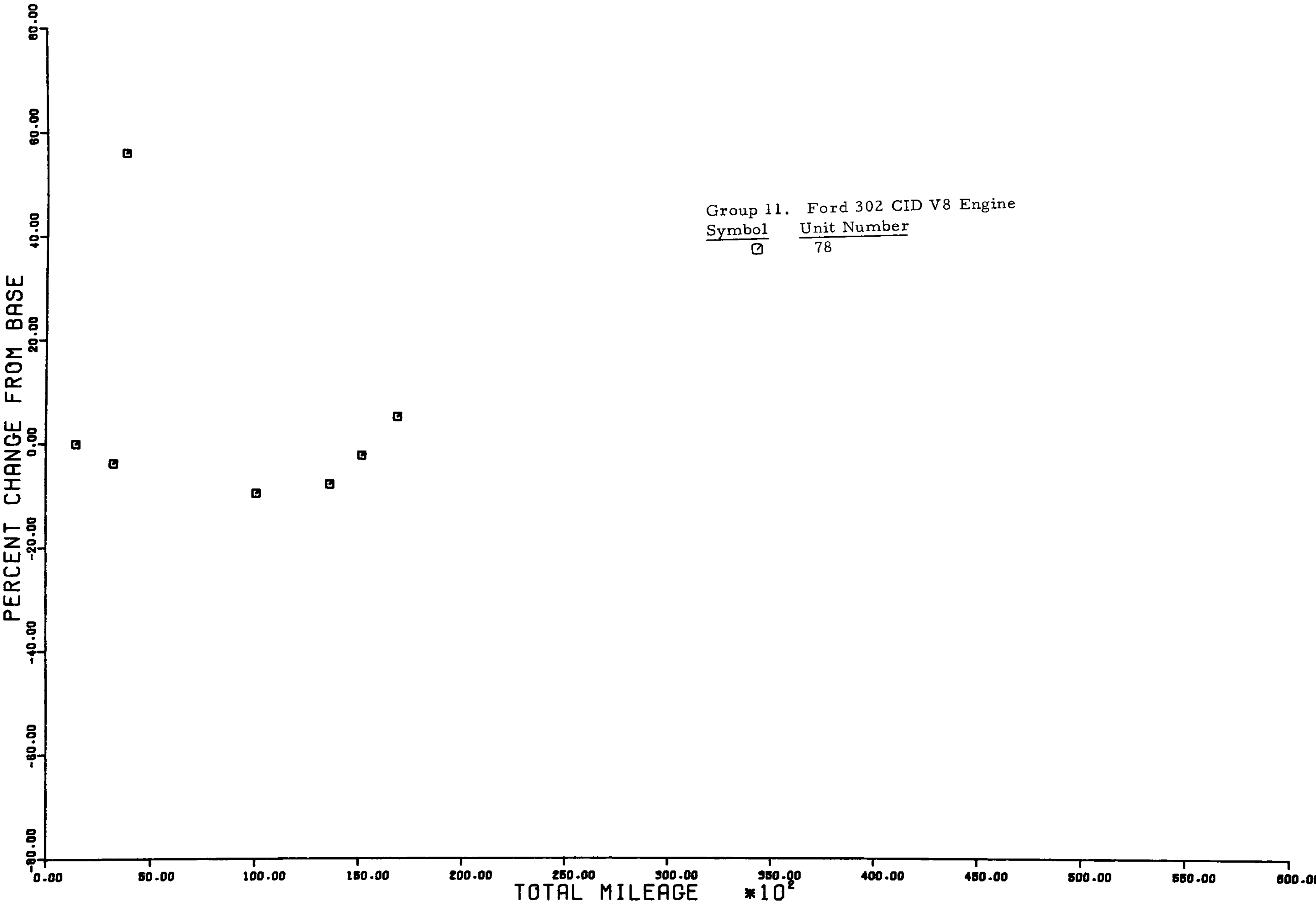

GROUP 10 NO (NOT CORRECTED)




GROUP 10 NO CORRECTED

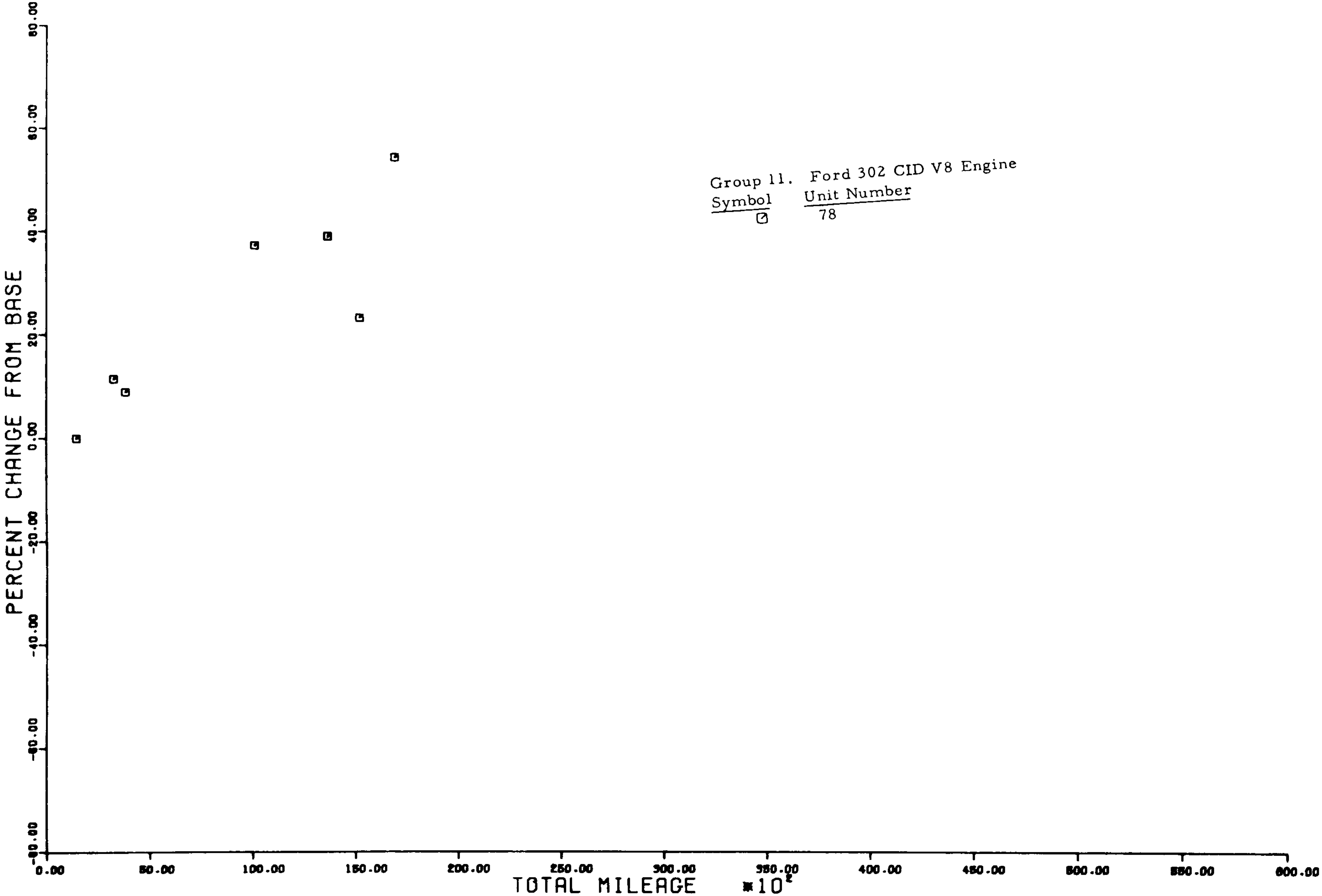

PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
Group 11. Ford 302 CID V8 Engine
Symbol
Unit Number
78

GROUP 11 HC

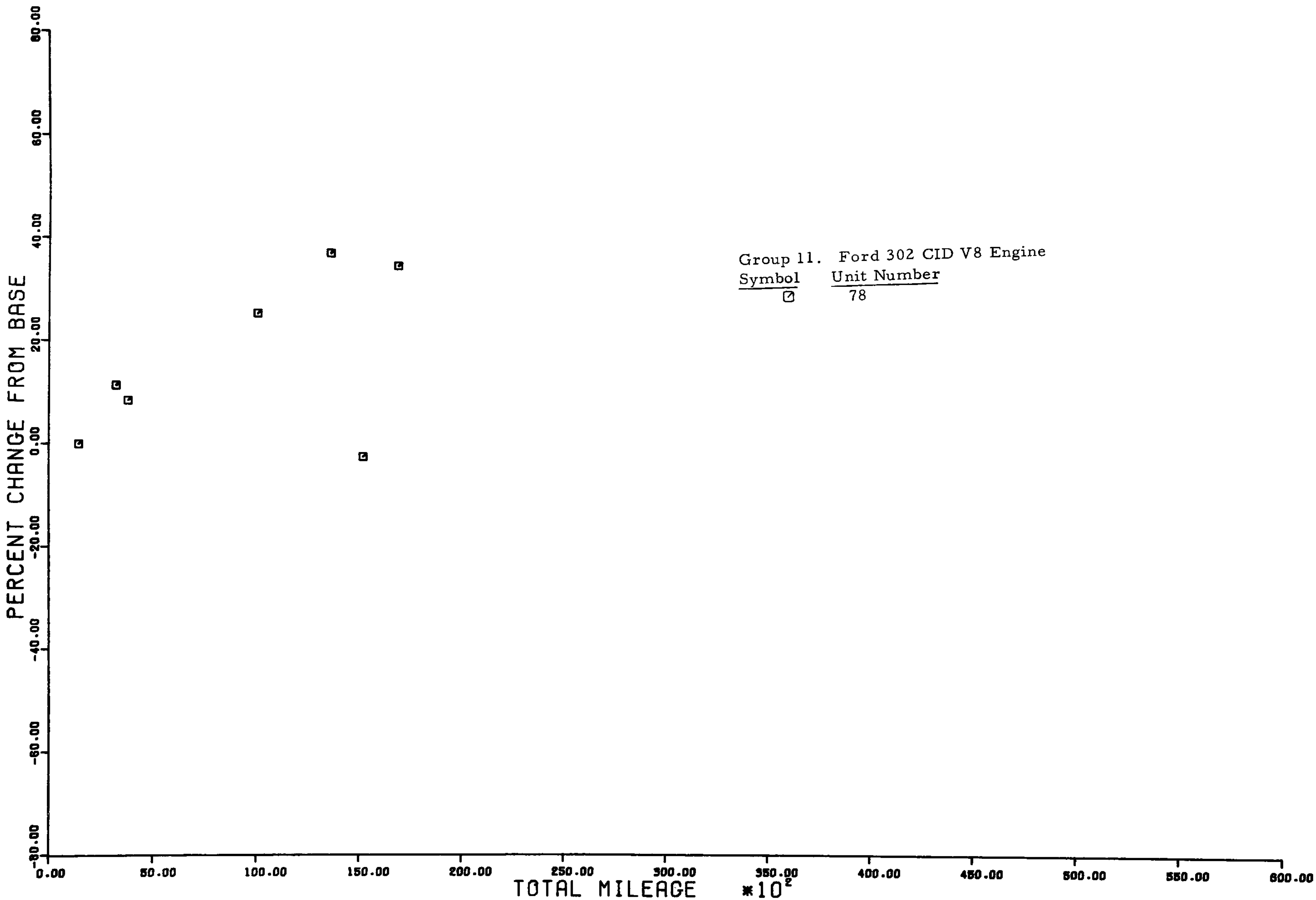


Group 11. Ford 302 CID V8 Engine
Symbol Unit Number
78
PERCENT CHANGE FROM BASE
TOTAL MILEAGE *10²
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00

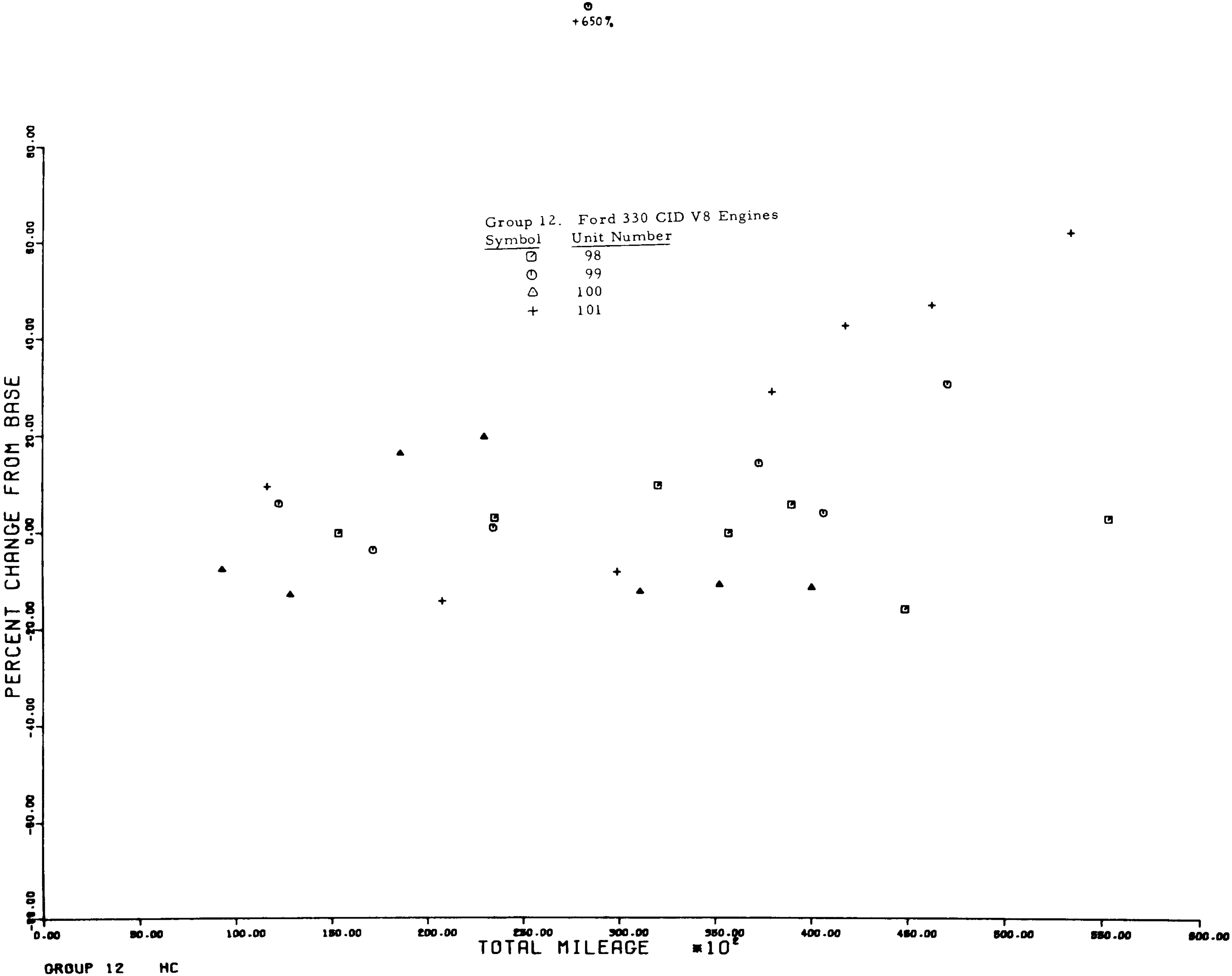

GROUP 11 CO

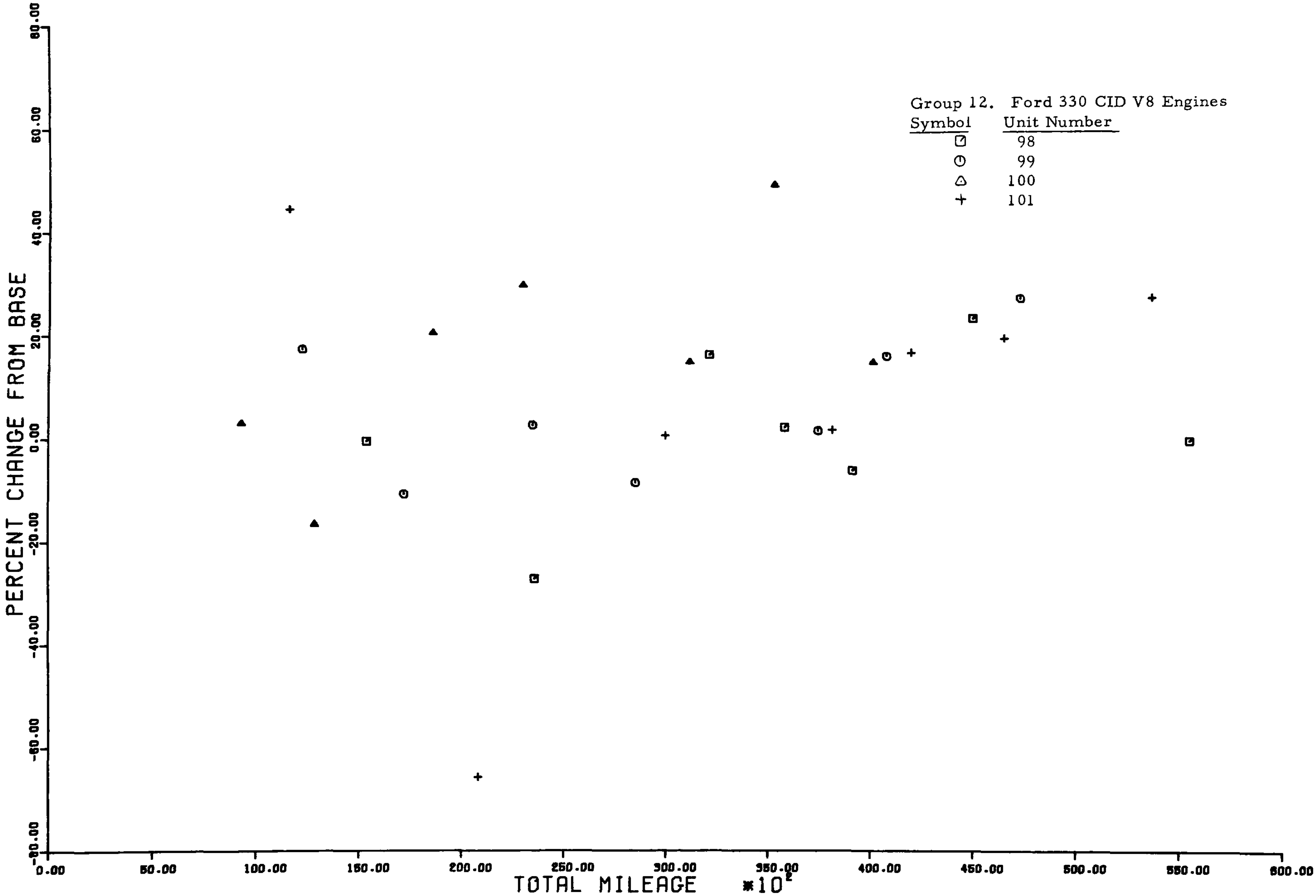



GROUP 11 NO (NOT CORRECTED)



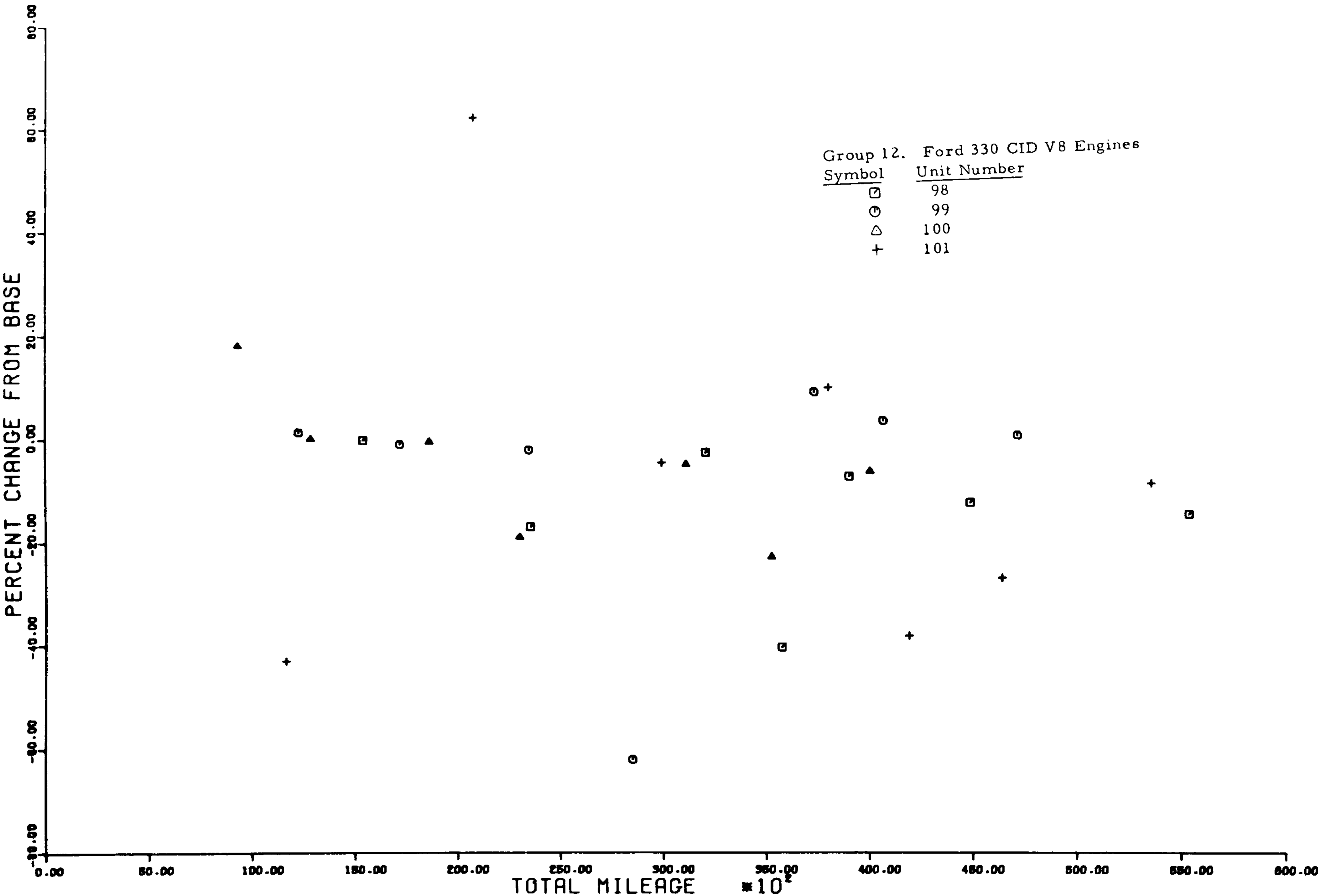

GROUP 11 NO CORRECTED


+650%
Group 12. Ford 330 CID V8 Engines
Symbol
Unit Number
98
99
100
101
PERCENT CHANGE FROM BASE
TOTAL MILEAGE *10²
GROUP 12 HC

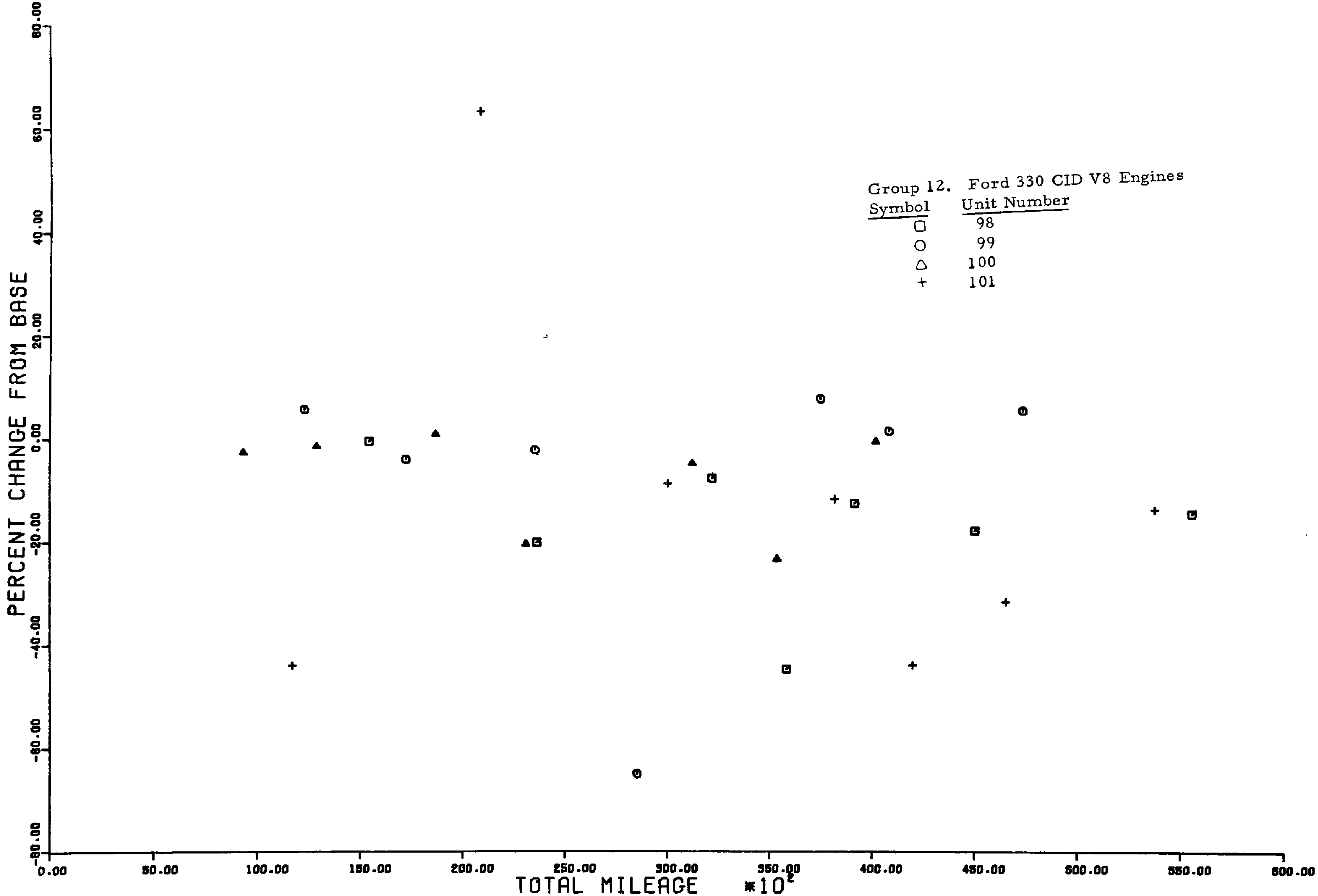


Group 12. Ford 330 CID V8 Engines
Symbol Unit Number
98
99
100
101
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²

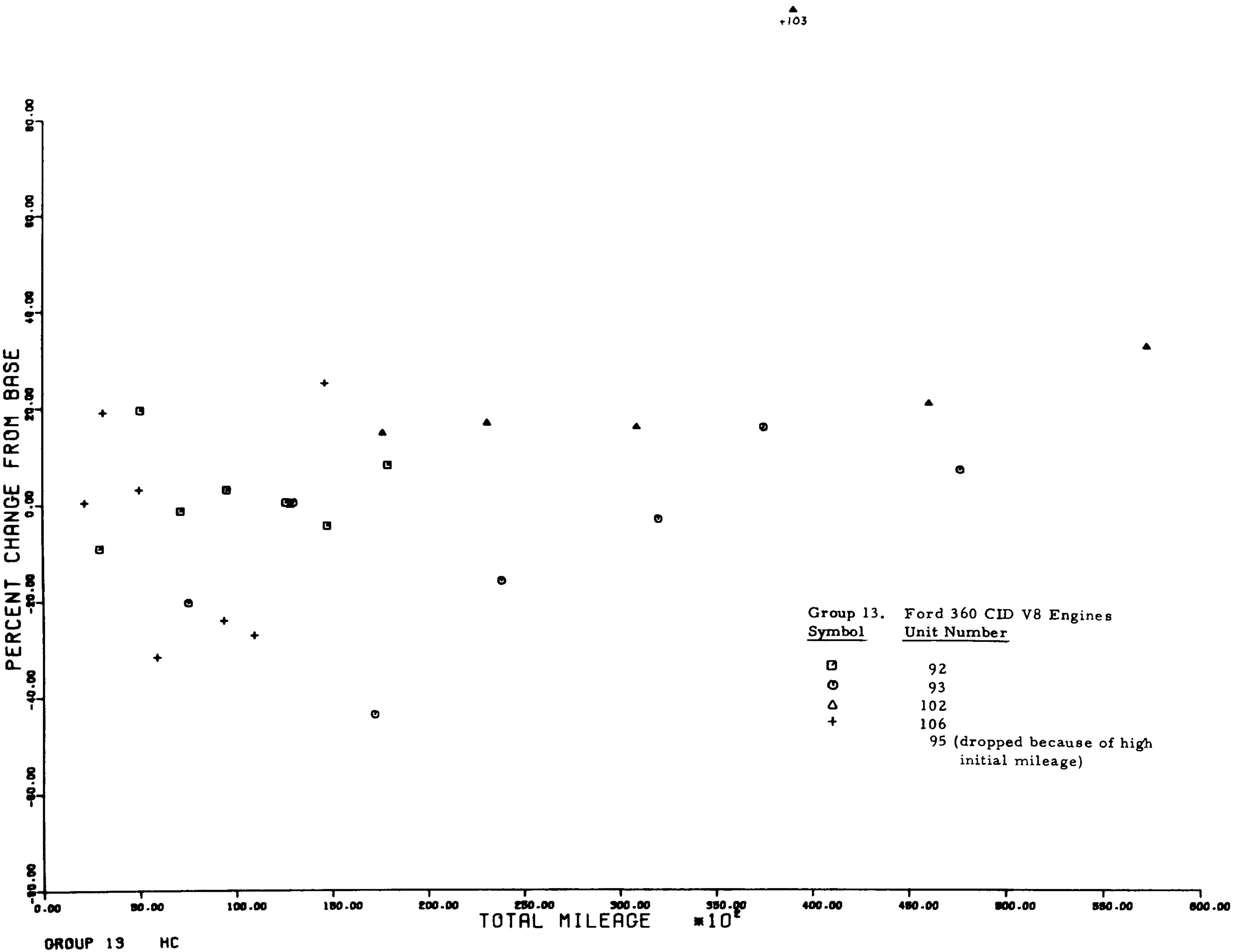

GROUP 12 CO

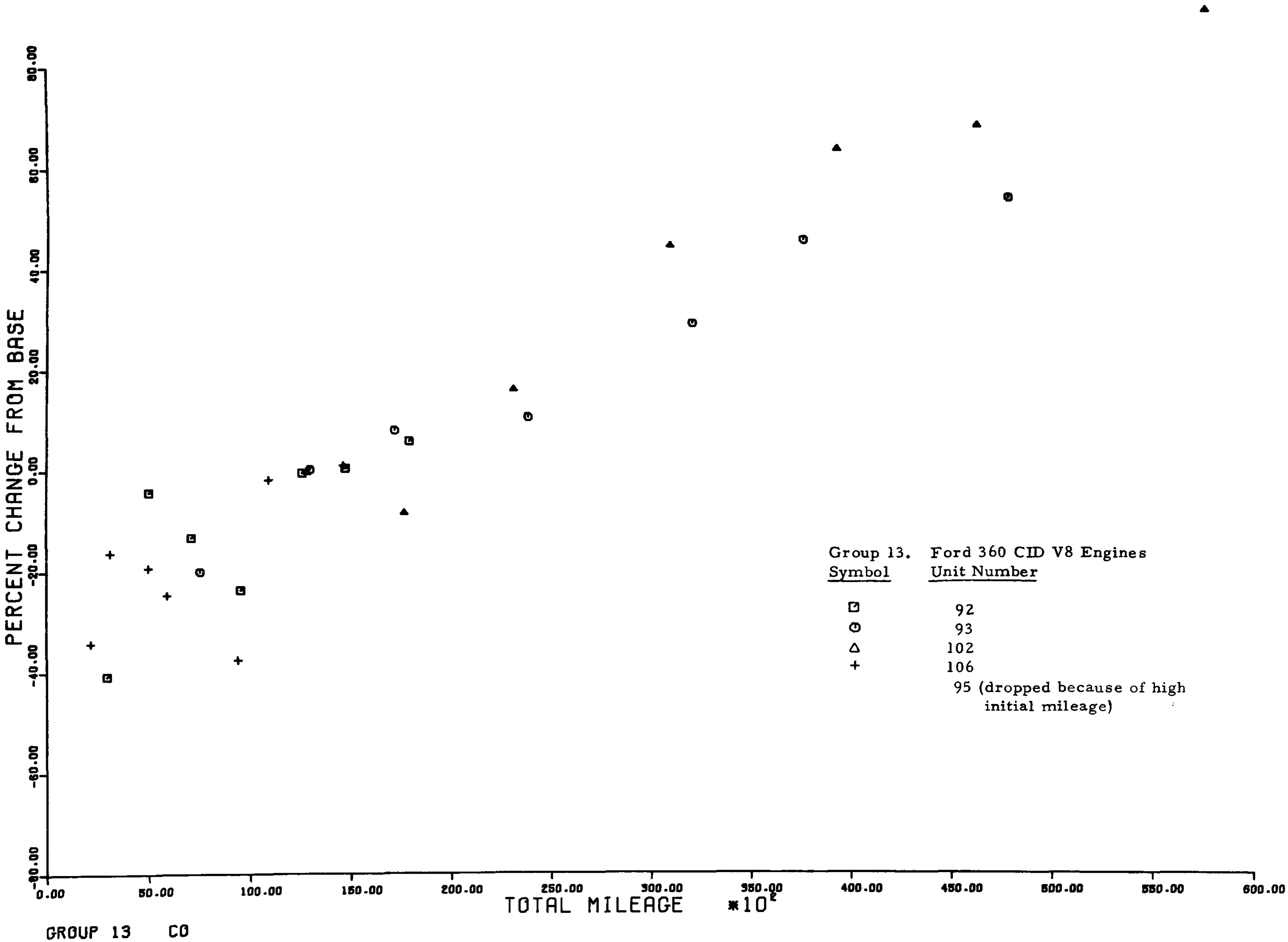


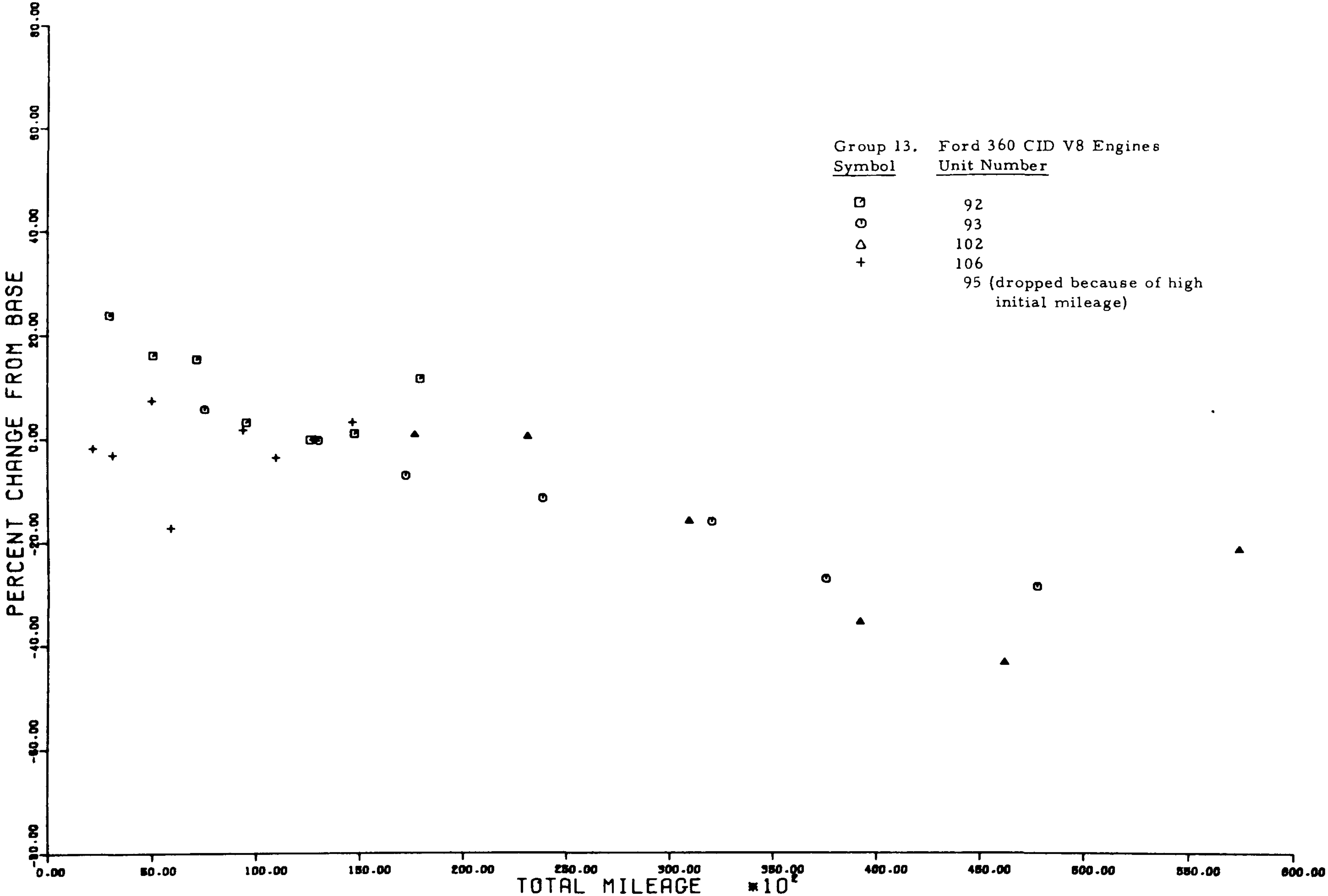
GROUP 12 NO (NOT CORRECTED)



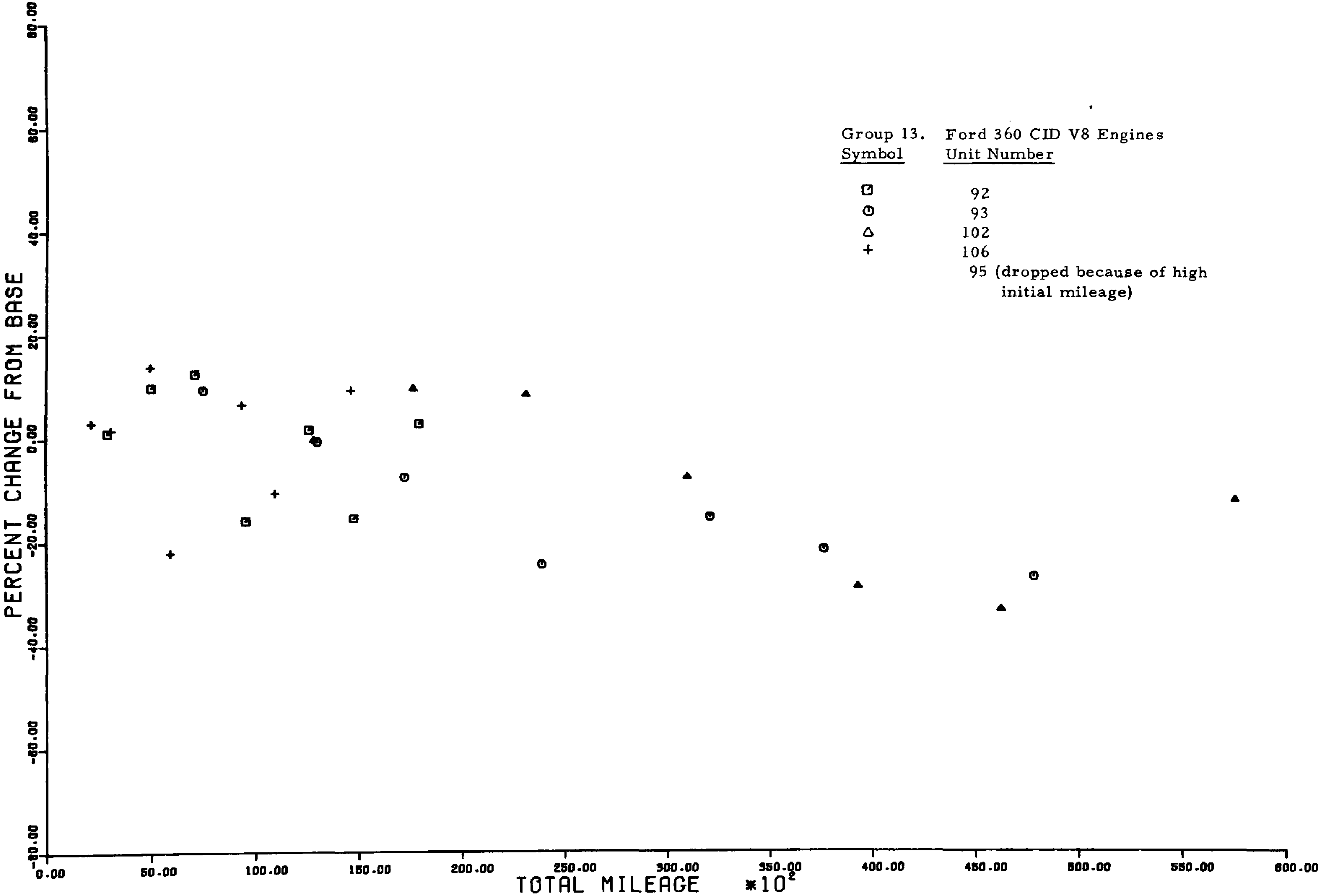

GROUP 12 NO CORRECTED


+103
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE $*10^2$
GROUP 13 HC
Group 13. Ford 360 CID V8 Engines
Symbol Unit Number
92
93
102
106
95 (dropped because of high initial mileage)

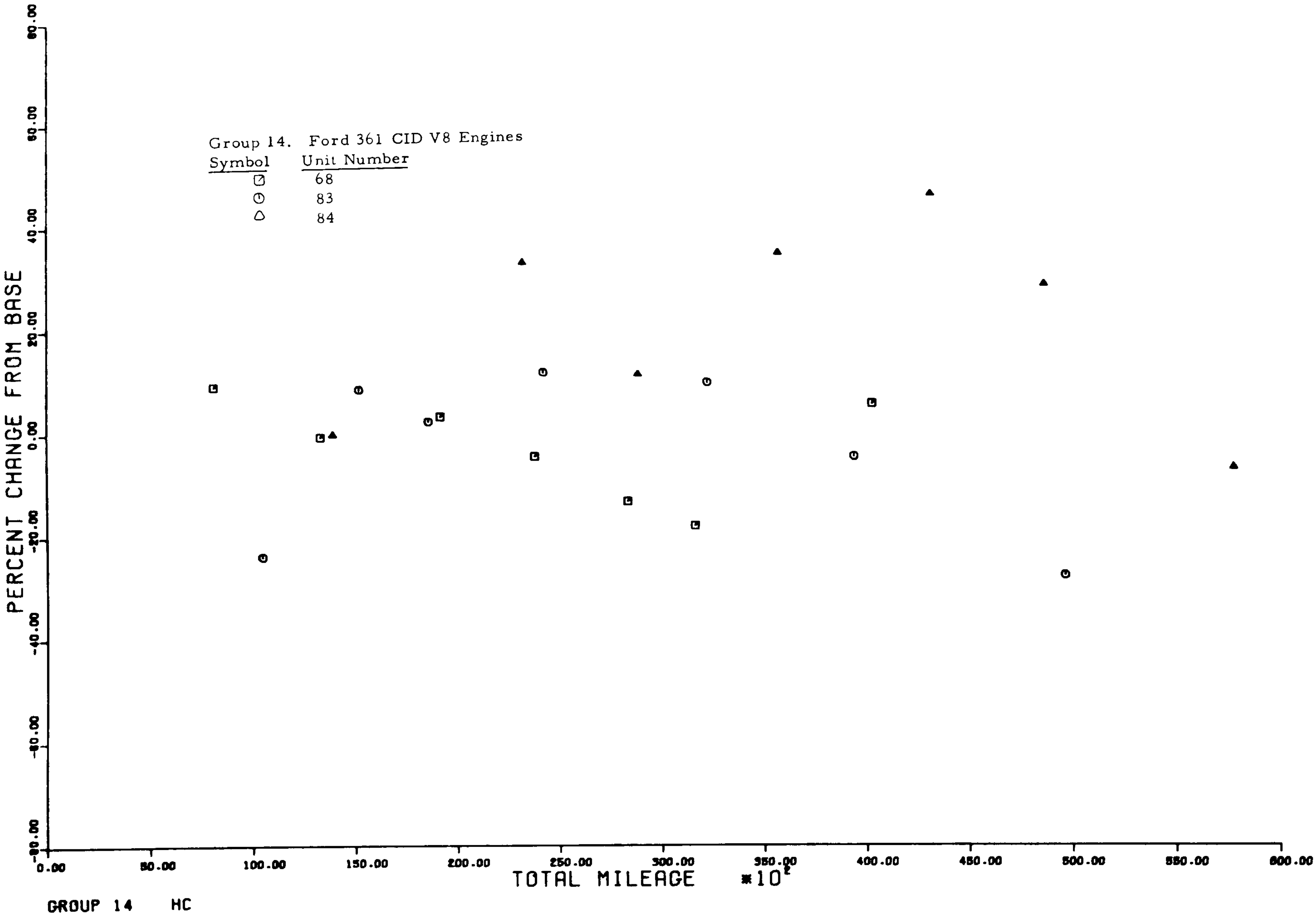

PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
Group 13. Ford 360 CID V8 Engines
Symbol Unit Number
92
93
102
106
95 (dropped because of high initial mileage)
GROUP 13 CO

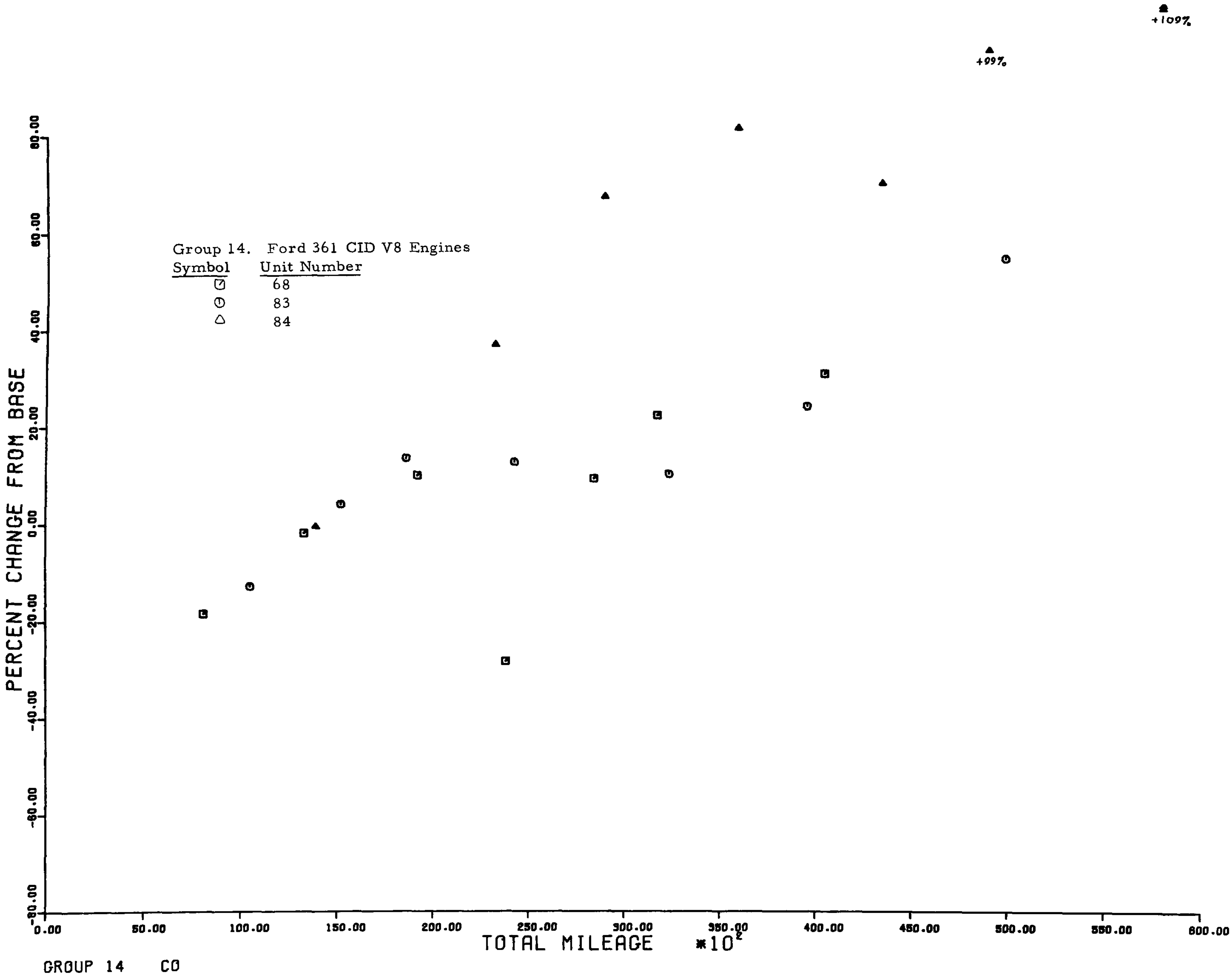


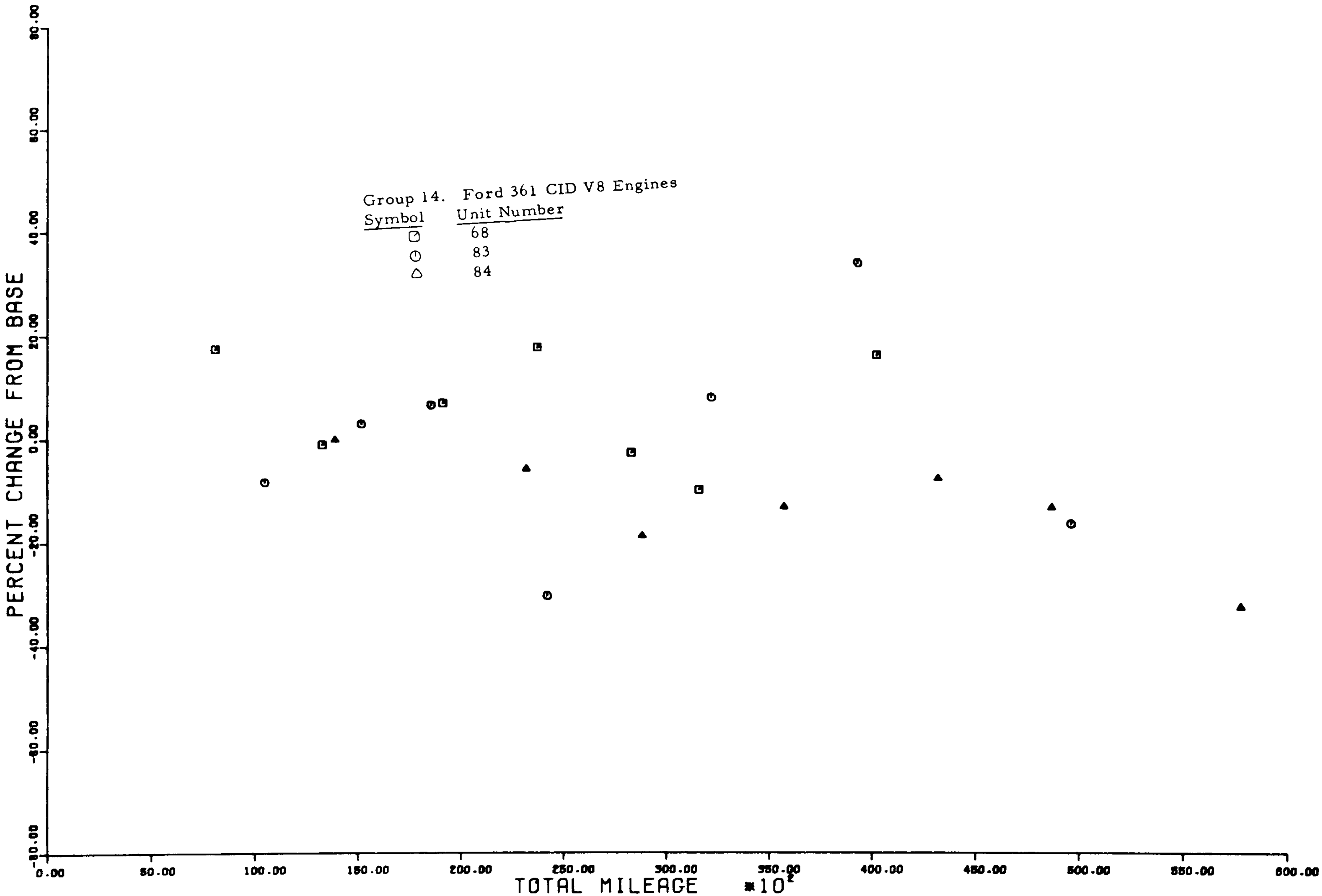

GROUP 13 NO (NOT CORRECTED)



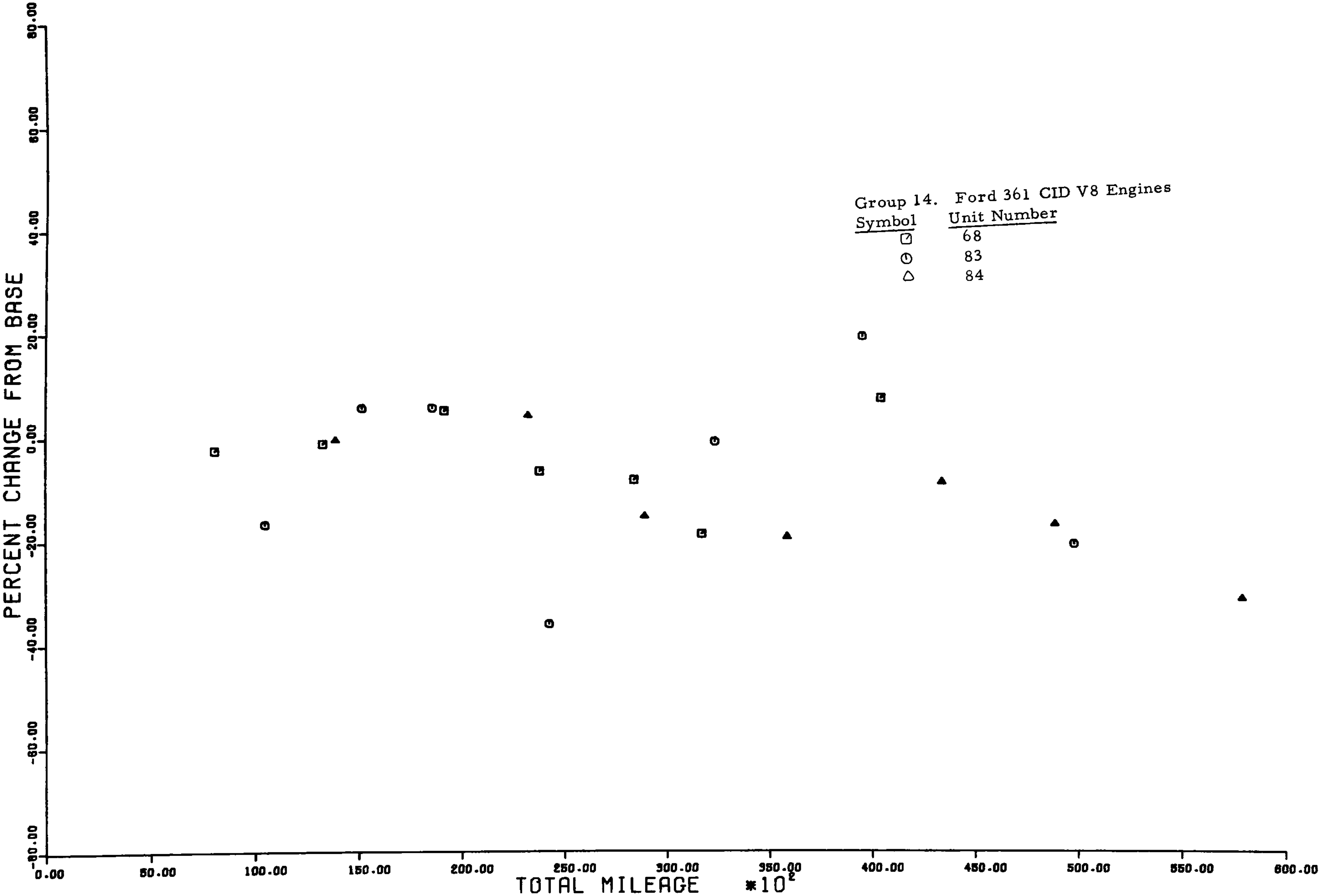

GROUP 13 NO CORRECTED


Group 14. Ford 361 CID V8 Engines
Symbol Unit Number
68
83
84
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
GROUP 14 HC

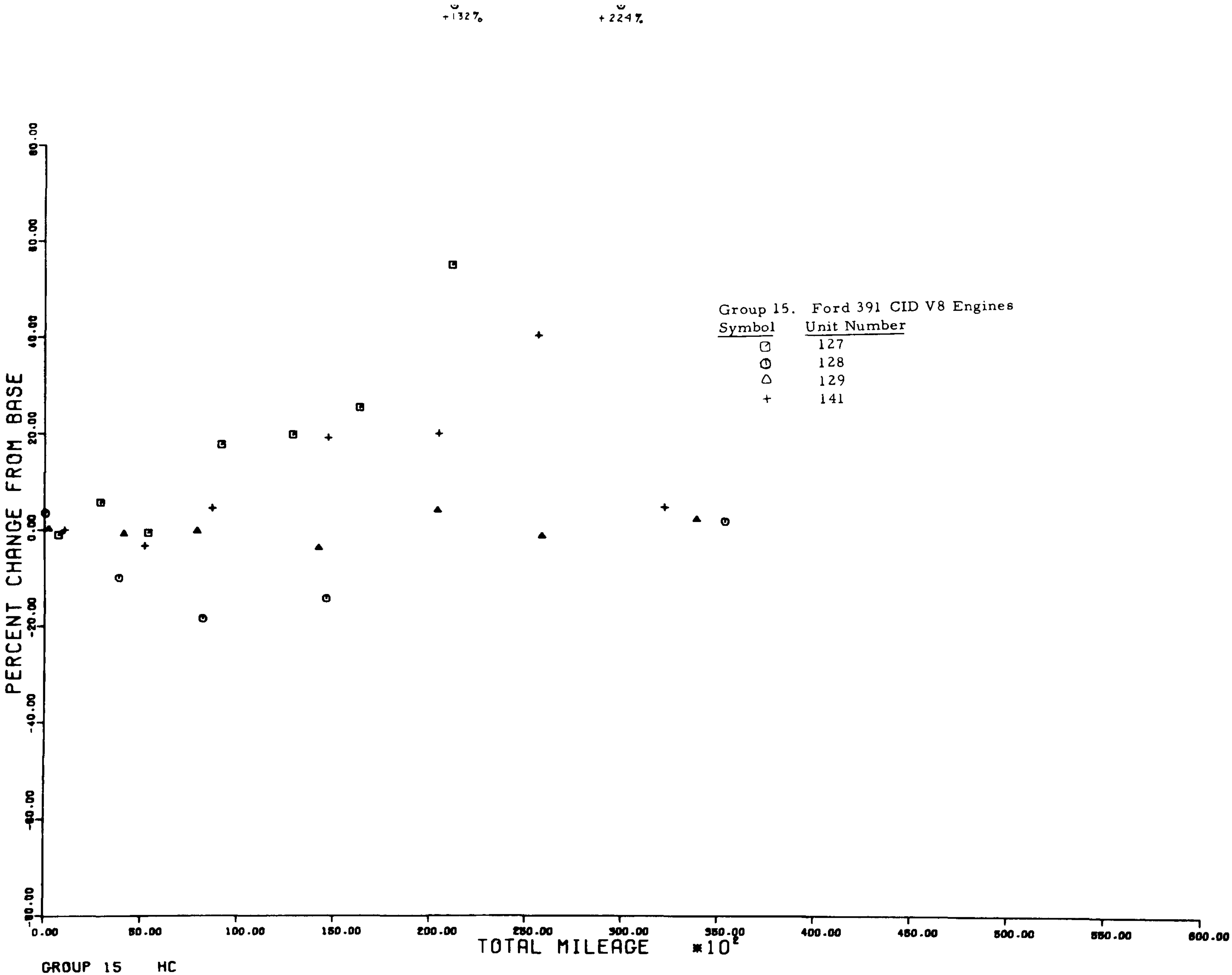

+109%
+99%
Group 14. Ford 361 CID V8 Engines
Symbol
Unit Number
68
83
84
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10^2
GROUP 14 CO

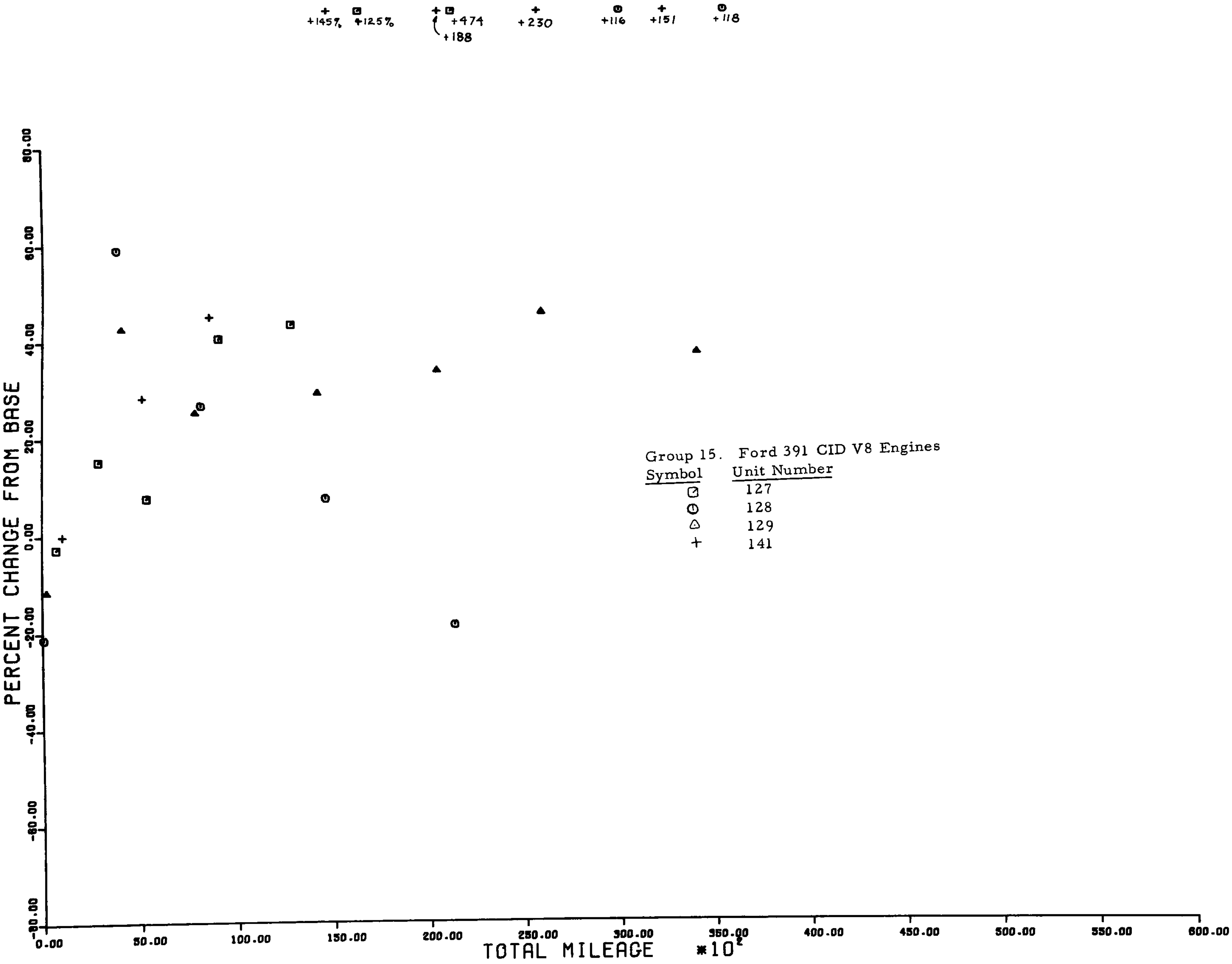



GROUP 14 NO (NOT CORRECTED)

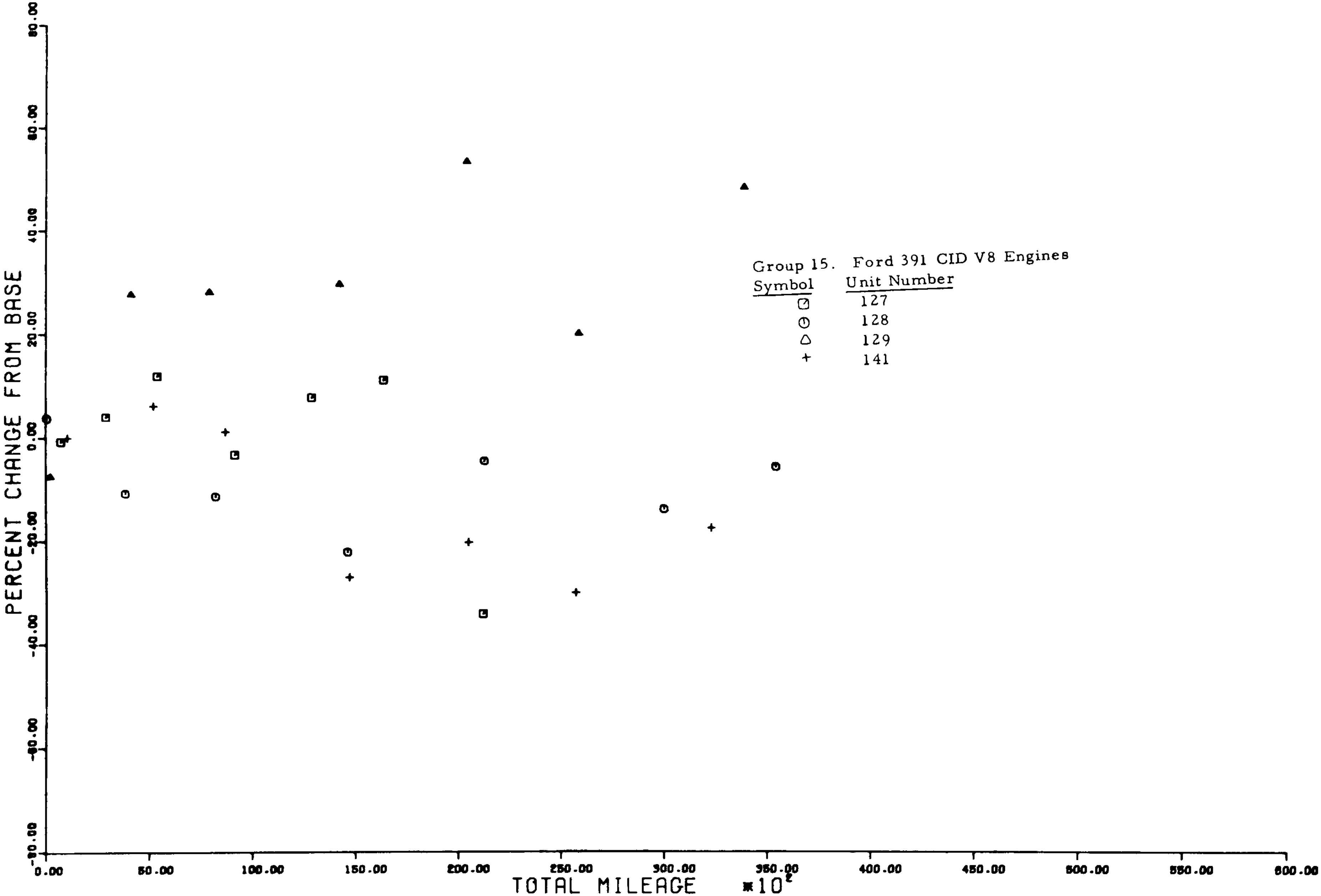



GROUP 14 NO CORRECTED

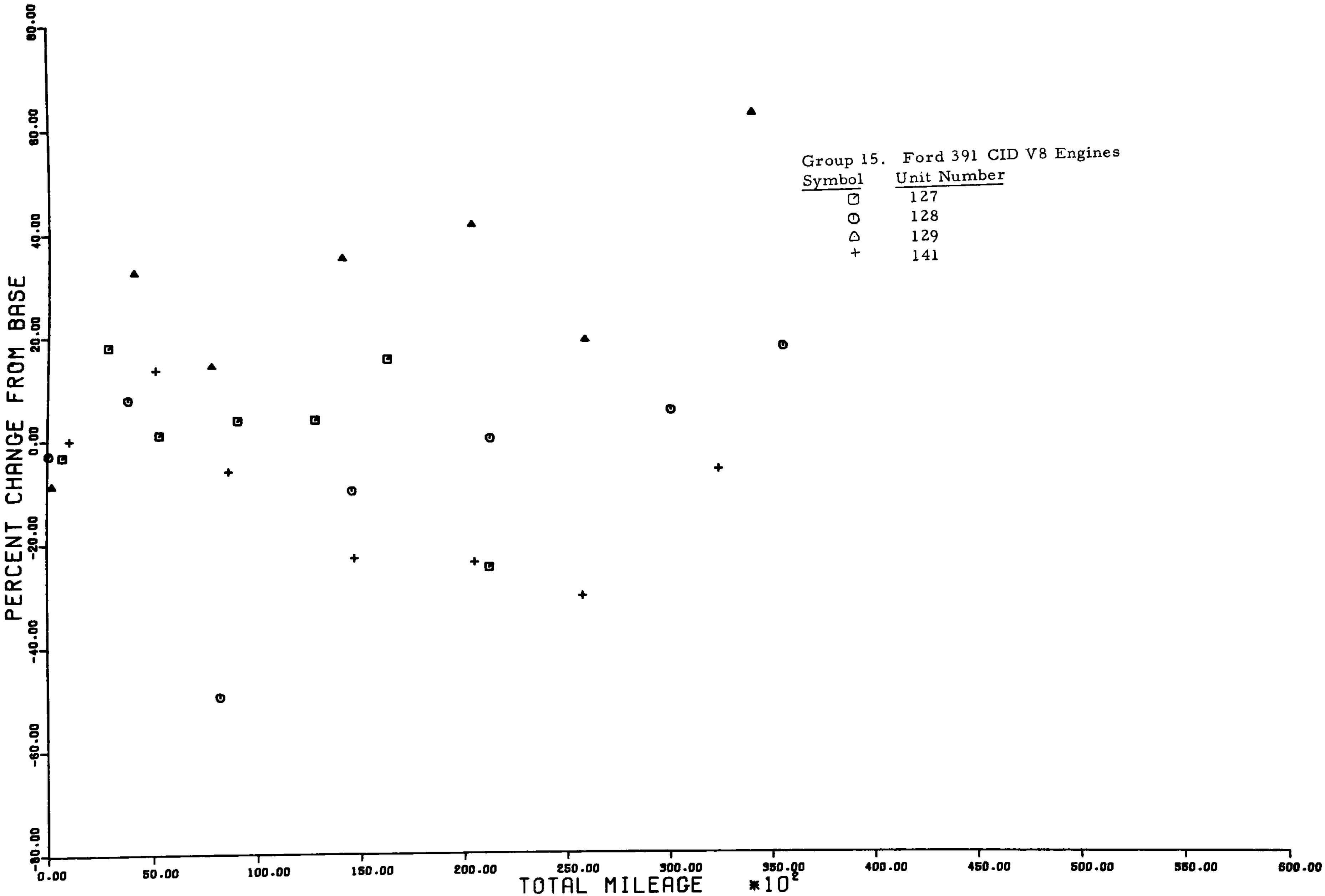

+132%
+224%
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
Group 15. Ford 391 CID V8 Engines
Symbol
Unit Number
127
128
129
141
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
GROUP 15 HC


+1457%
+125%
+474
+188
+230
+116
+151
+118
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10[2]
Group 15. Ford 391 CID V8 Engines
Symbol
Unit Number
127
128
129
141

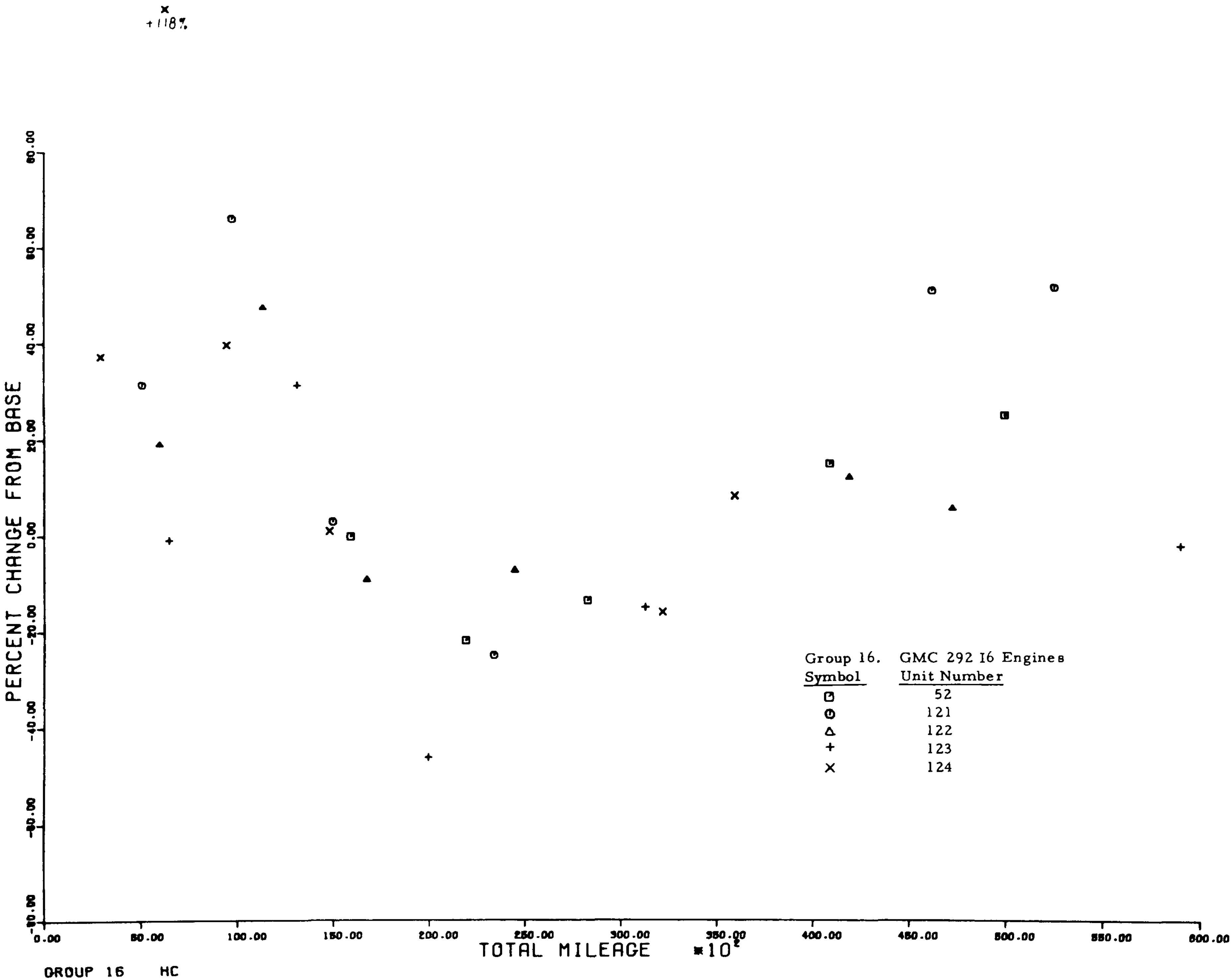
GROUP 15 CO

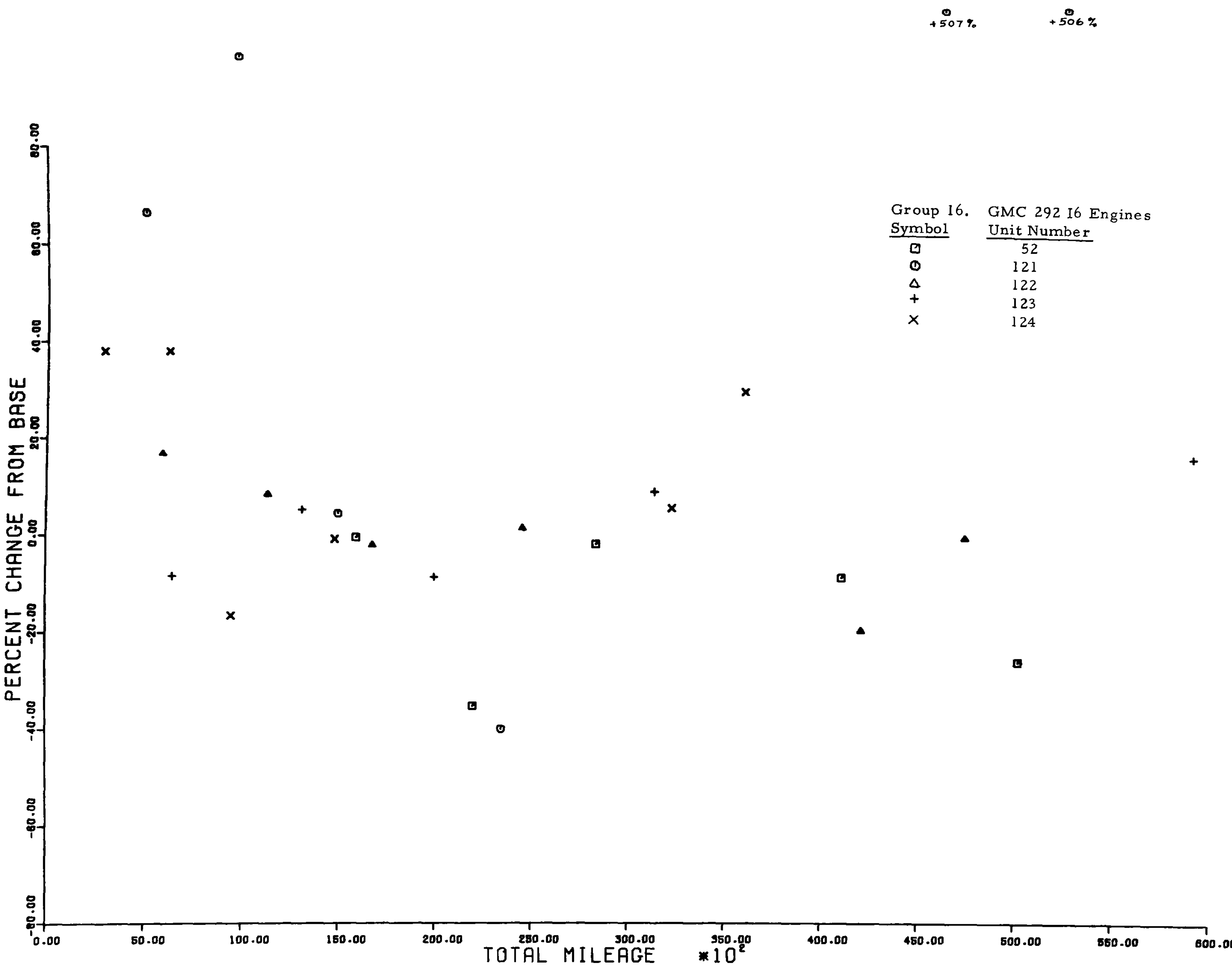



GROUP 15 NO (NOT CORRECTED)

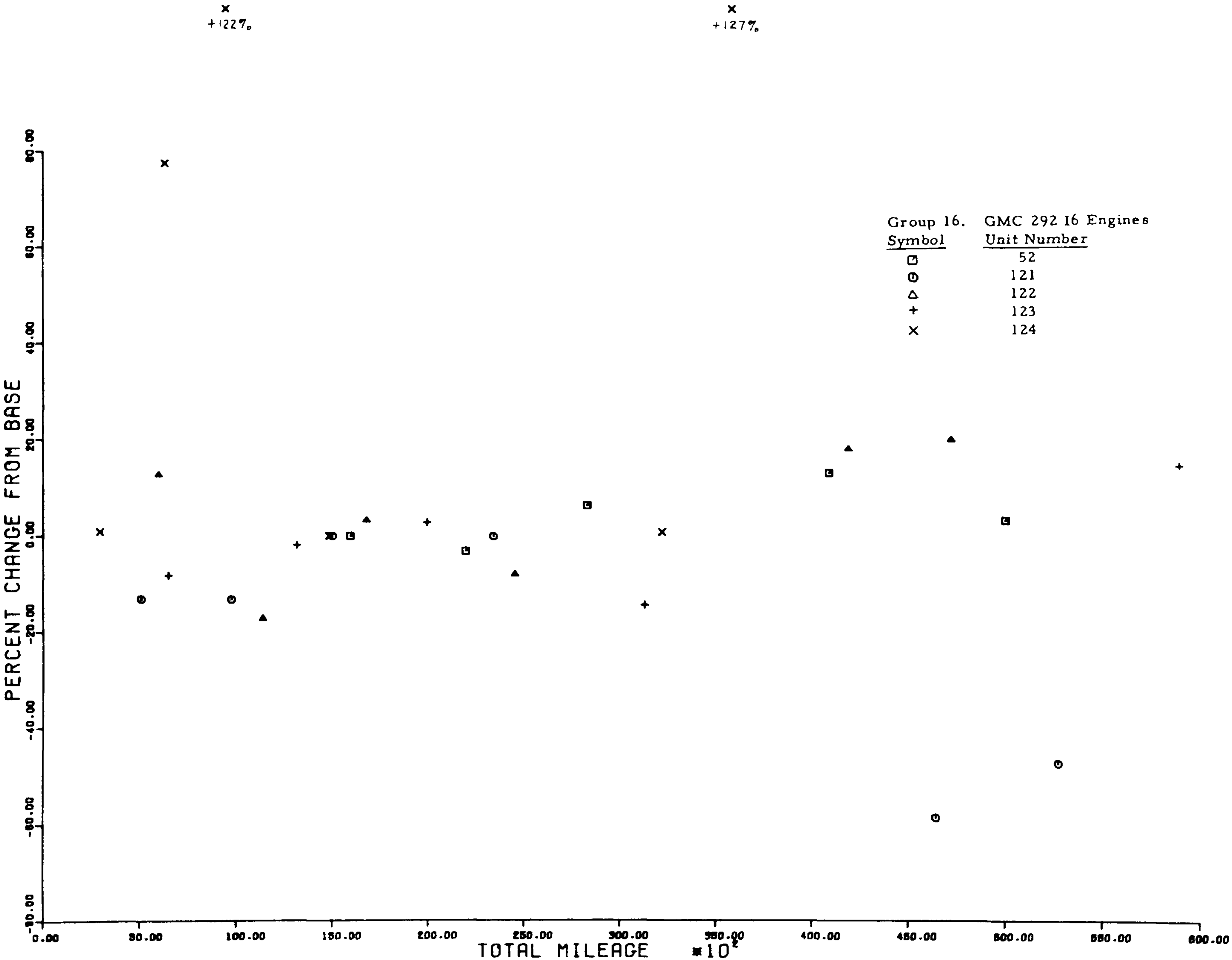



GROUP 15 NO CORRECTED

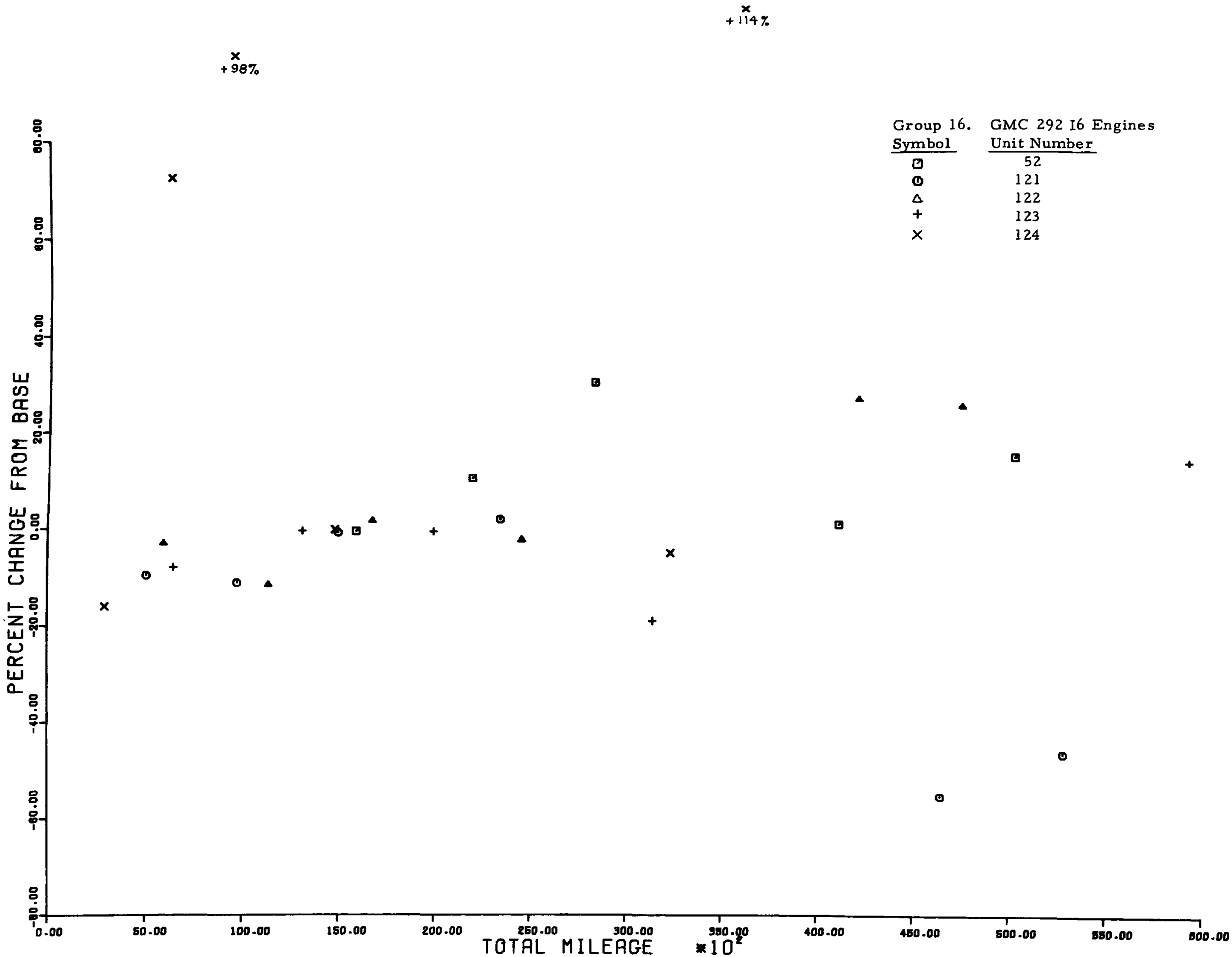

+118%
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
Group 16. GMC 292 I6 Engines
Symbol Unit Number
52
121
122
123
124
GROUP 16 HC


+507%
+506%
Group 16. GMC 292 I6 Engines
Symbol Unit Number
52
121
122
123
124
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²

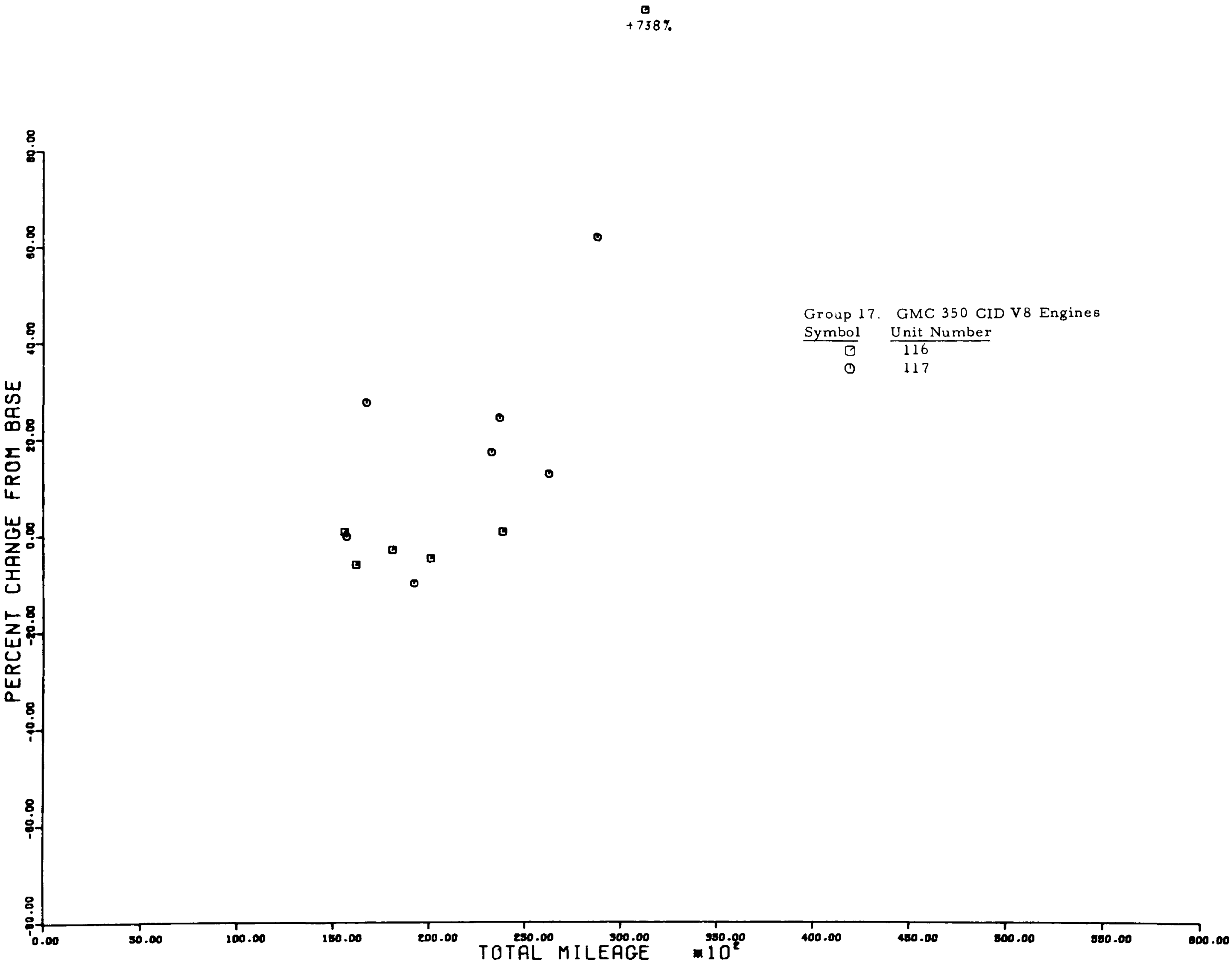
GROUP 16 CO



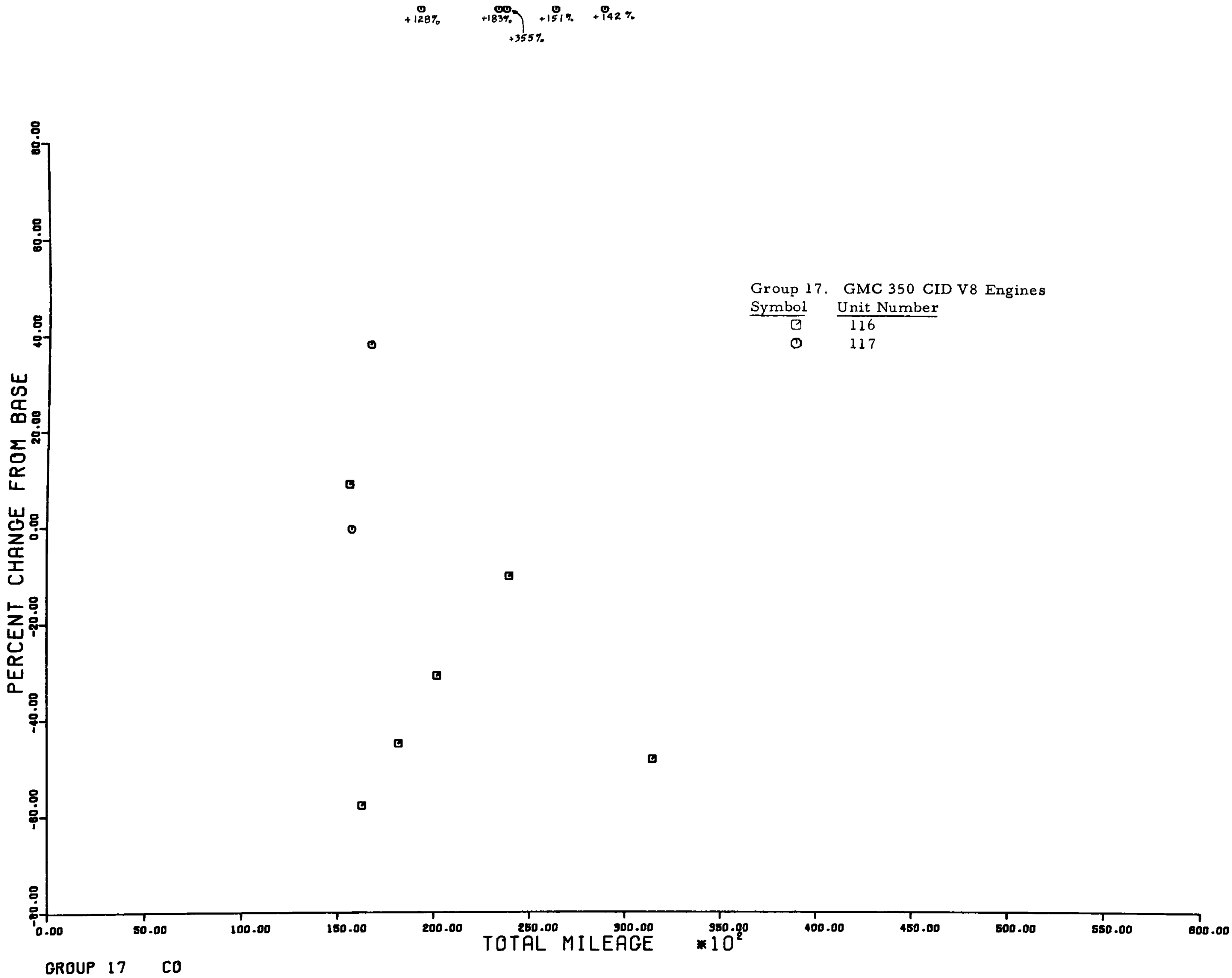

GROUP 16 NO (NOT CORRECTED)

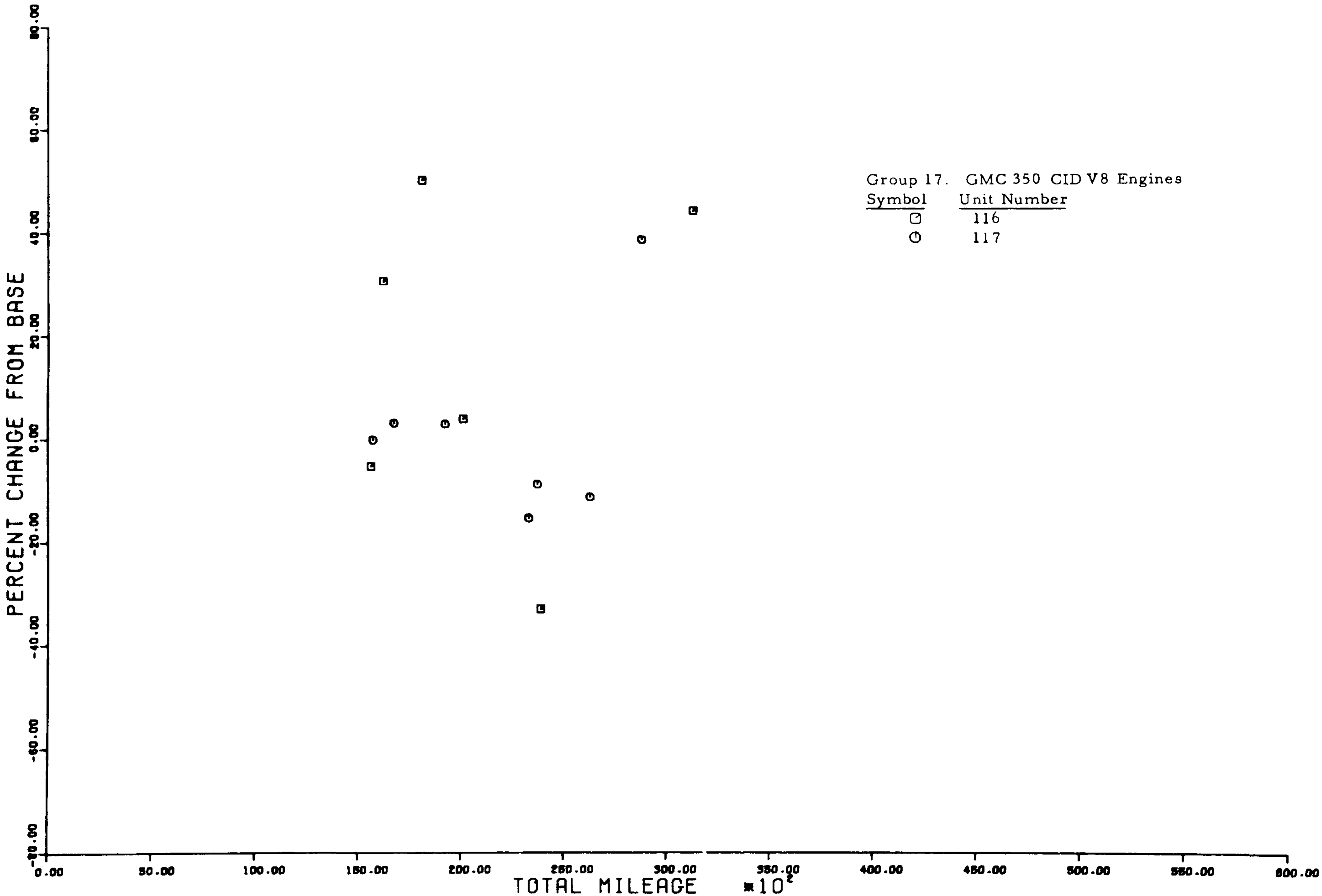



GROUP 16 NO CORRECTED

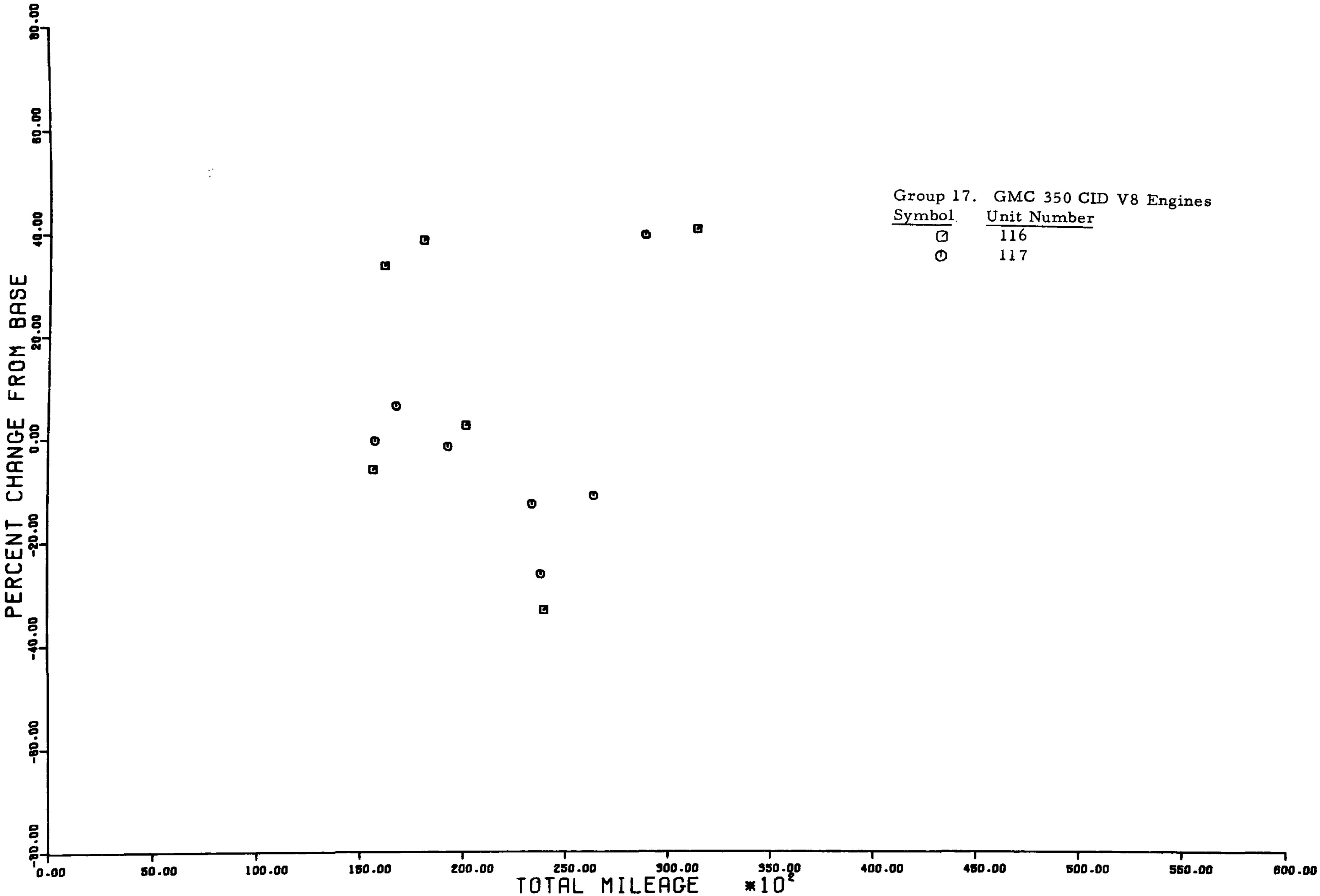

+738%
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
Group 17. GMC 350 CID V8 Engines
Symbol
Unit Number
116
117
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²

GROUP 17 HC

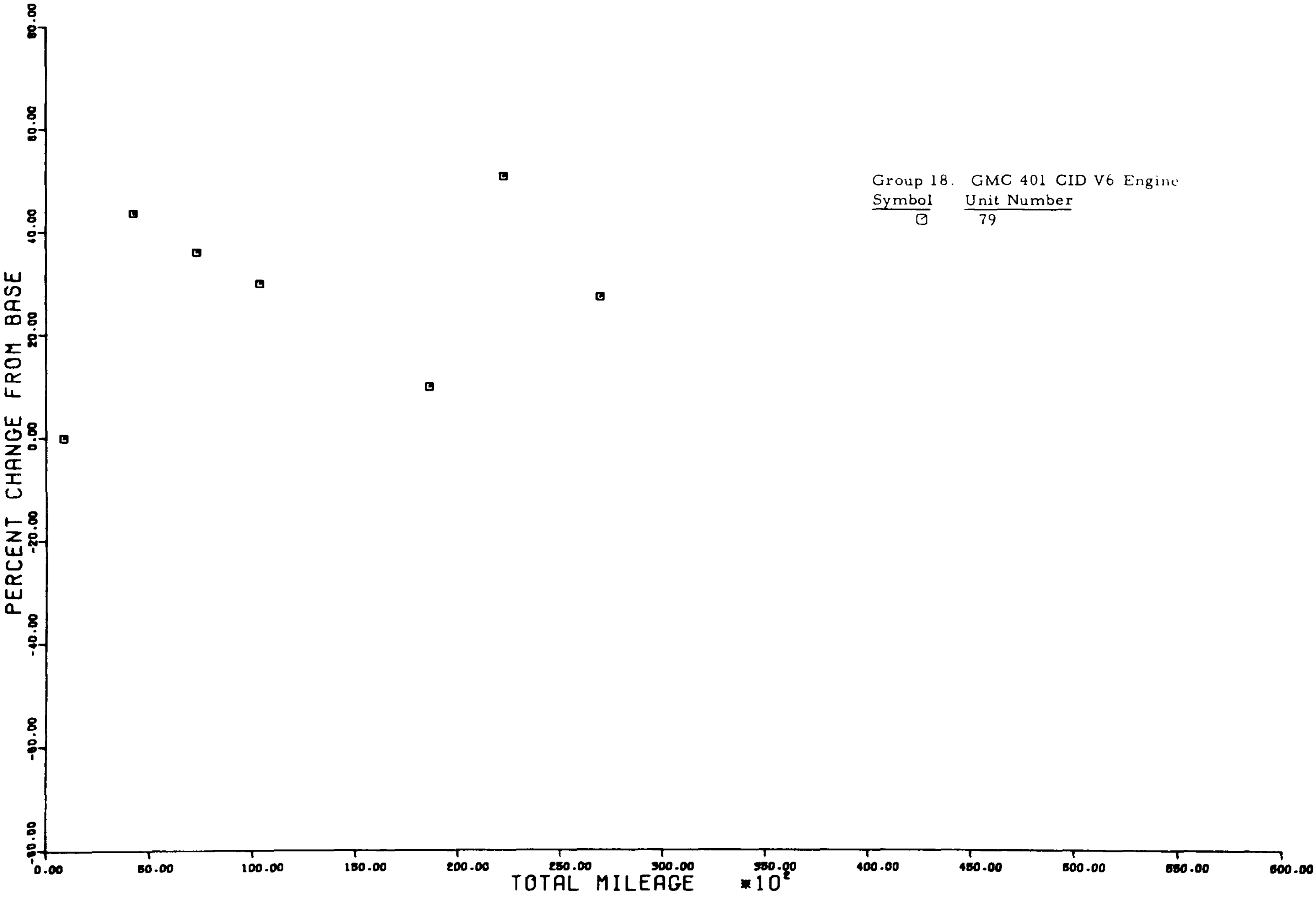

+128%
+183%
+355%
+151%
+142%
Group 17. GMC 350 CID V8 Engines
Symbol Unit Number
116
117
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10^2
GROUP 17 CO



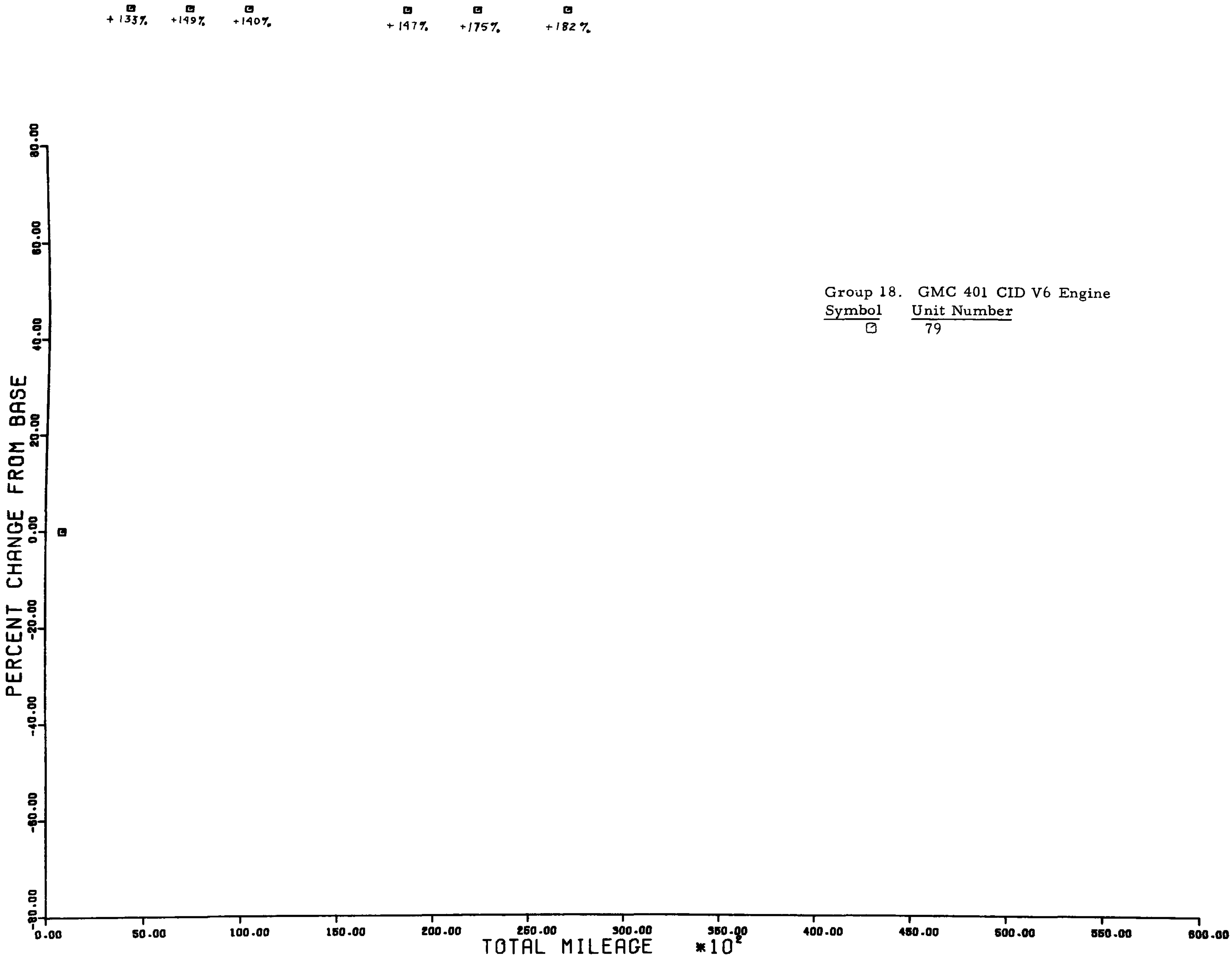

GROUP 17 NO (NOT CORRECTED)



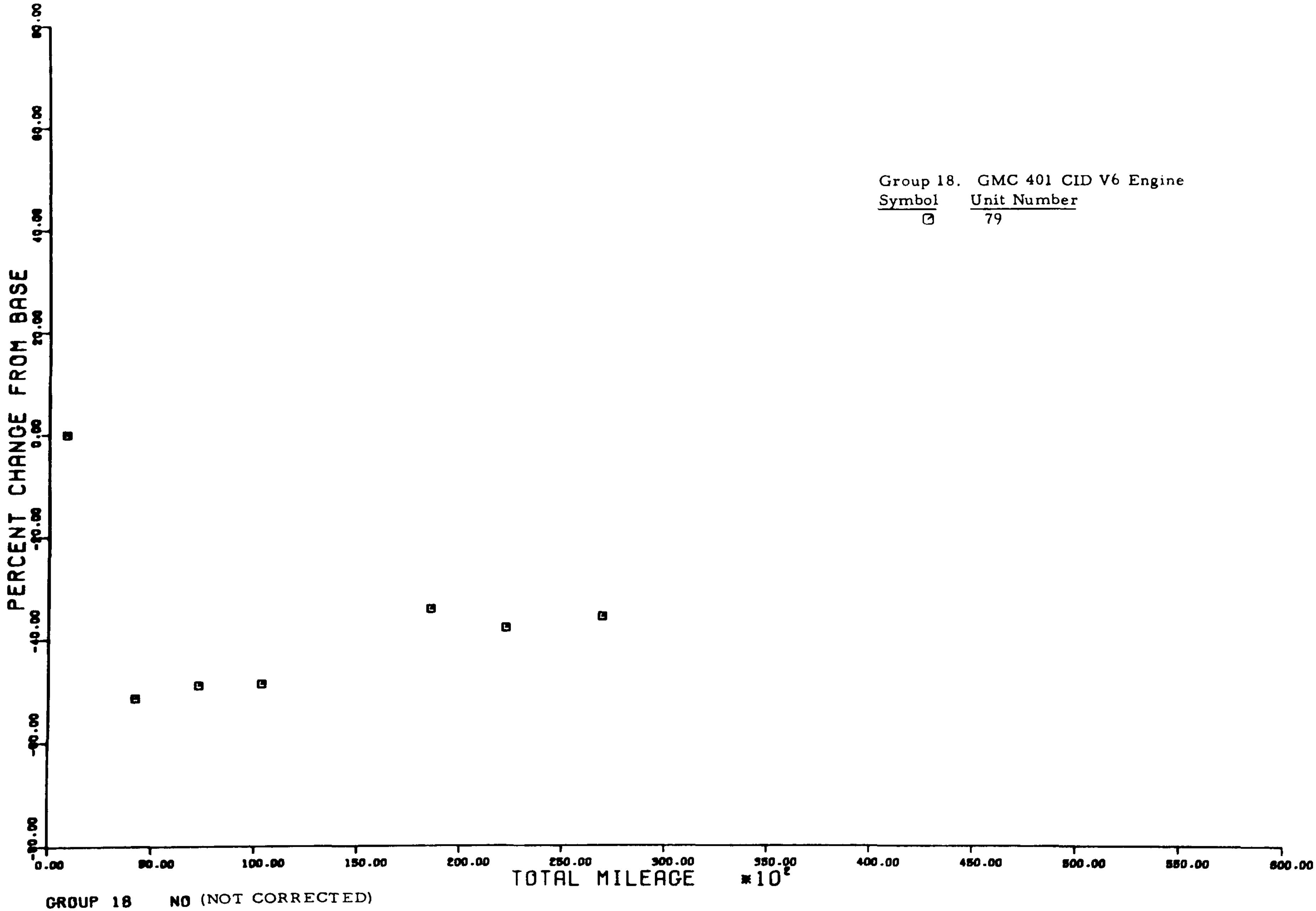

GROUP 17 NO CORRECTED


Group 18. GMC 401 CID V6 Engine
Symbol
Unit Number
79
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE $*10^2$

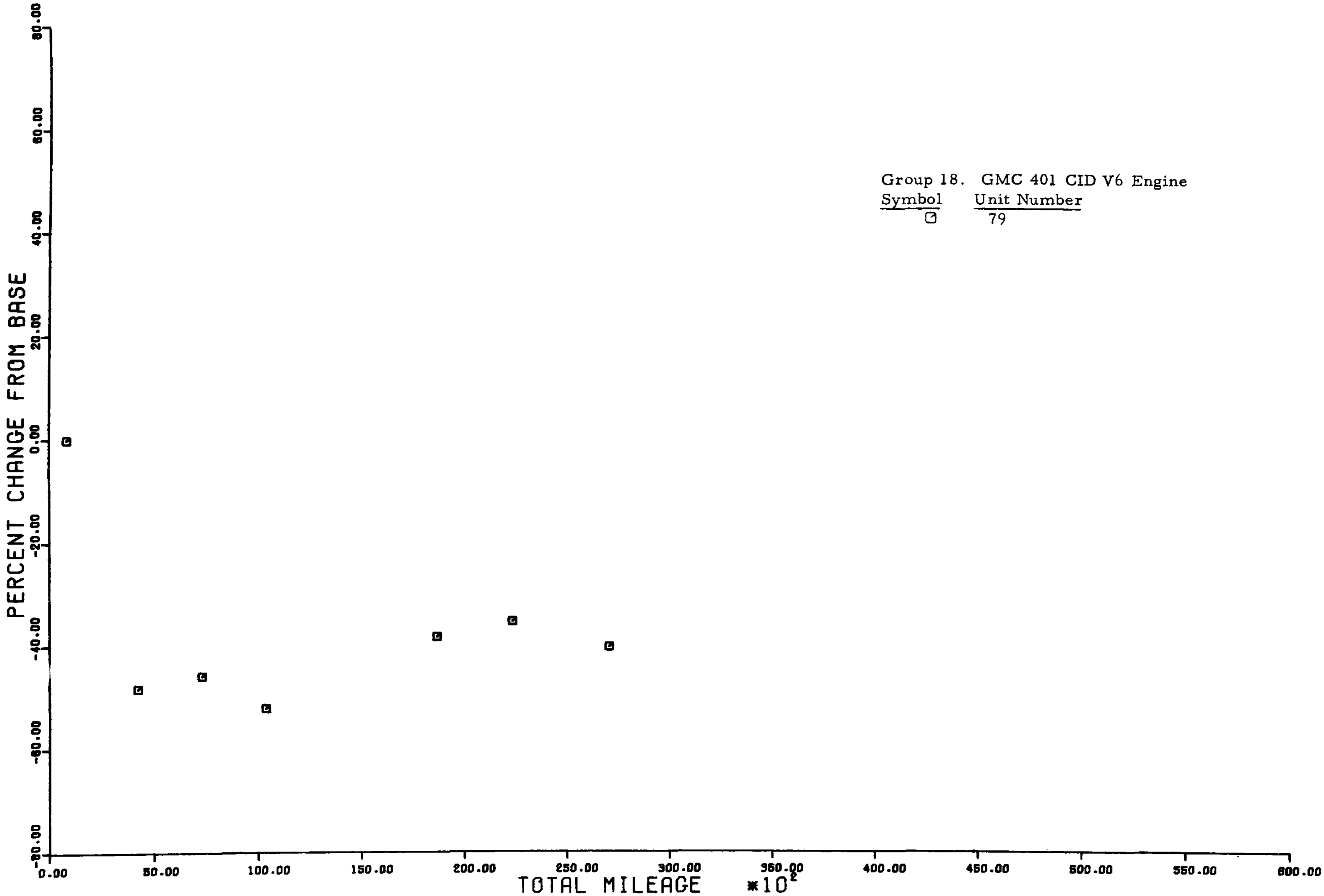
GROUP 18 HC


+133%
+149%
+140%
+147%
+175%
+182%
Group 18. GMC 401 CID V6 Engine
Symbol
Unit Number
79
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²

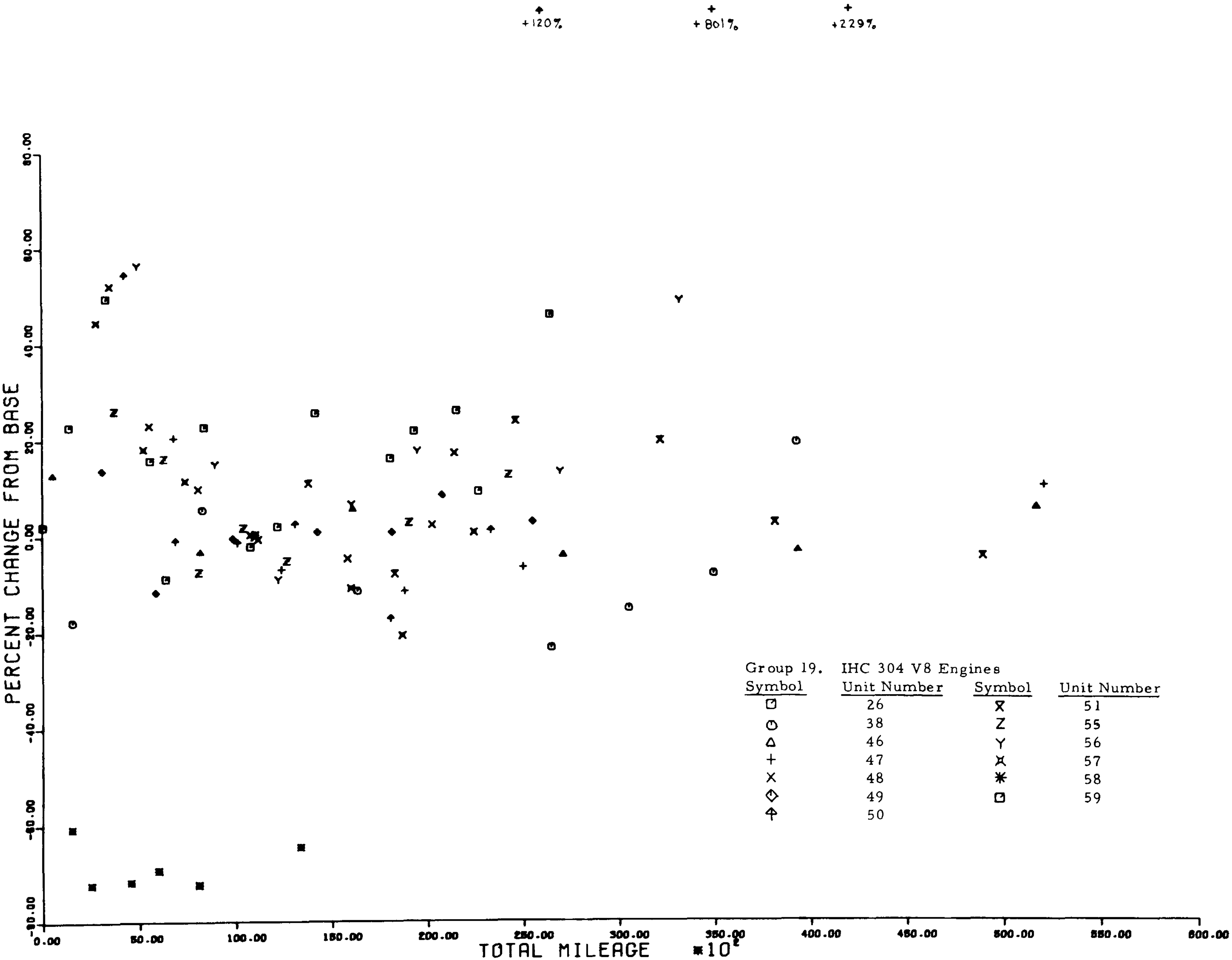
GROUP 18 CO



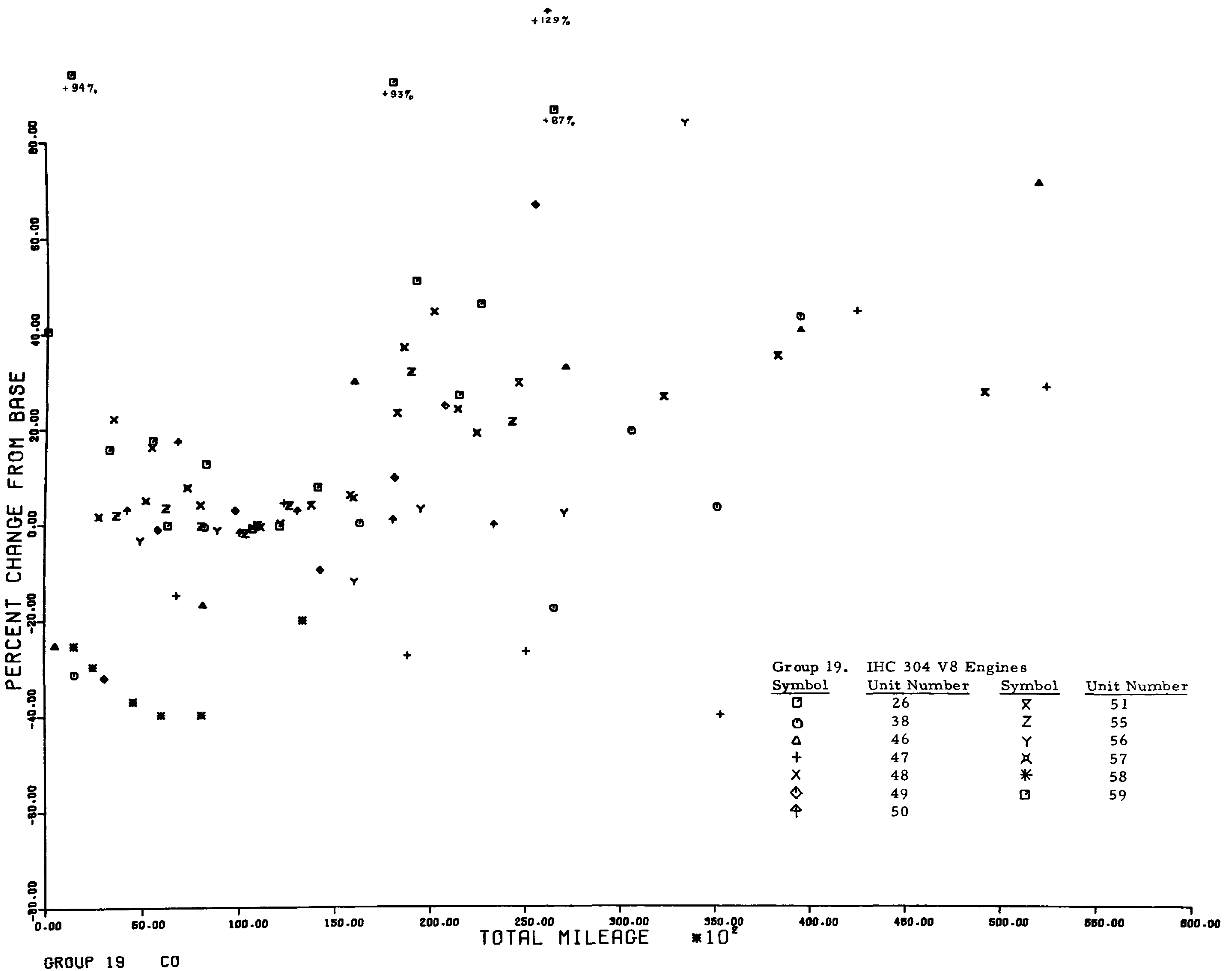
Group 18. GMC 401 CID V6 Engine
Symbol Unit Number
79
PERCENT CHANGE FROM BASE
TOTAL MILEAGE *10²
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
GROUP 18 NO (NOT CORRECTED)

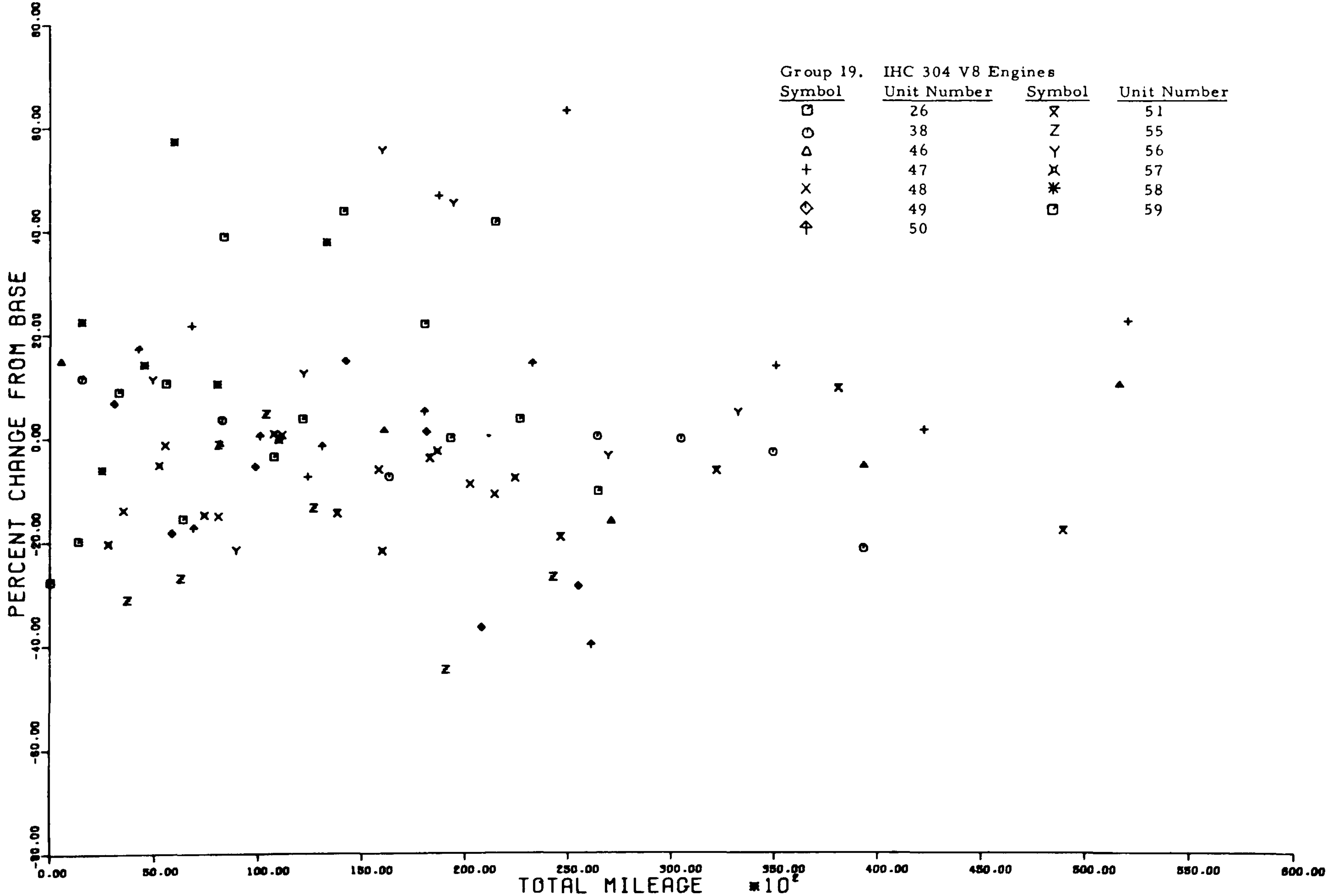



GROUP 18 NO CORRECTED

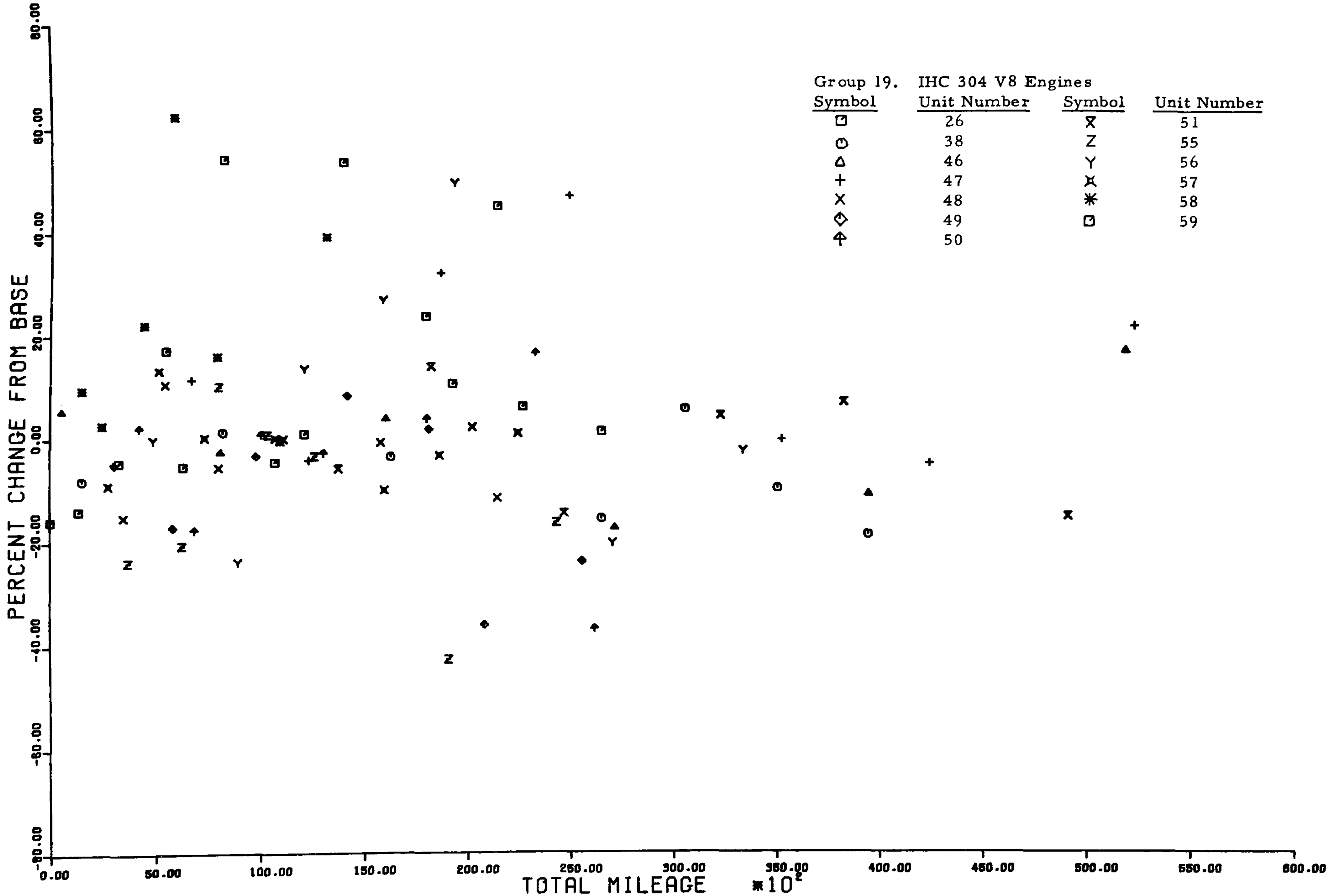

+120%
+8017%
+229%
PERCENT CHANGE FROM BASE
TOTAL MILEAGE *10²
Group 19. IHC 304 V8 Engines
Symbol Unit Number Symbol Unit Number
26
38
46
47
48
49
50
51
55
56
57
58
59

GROUP 19 HC

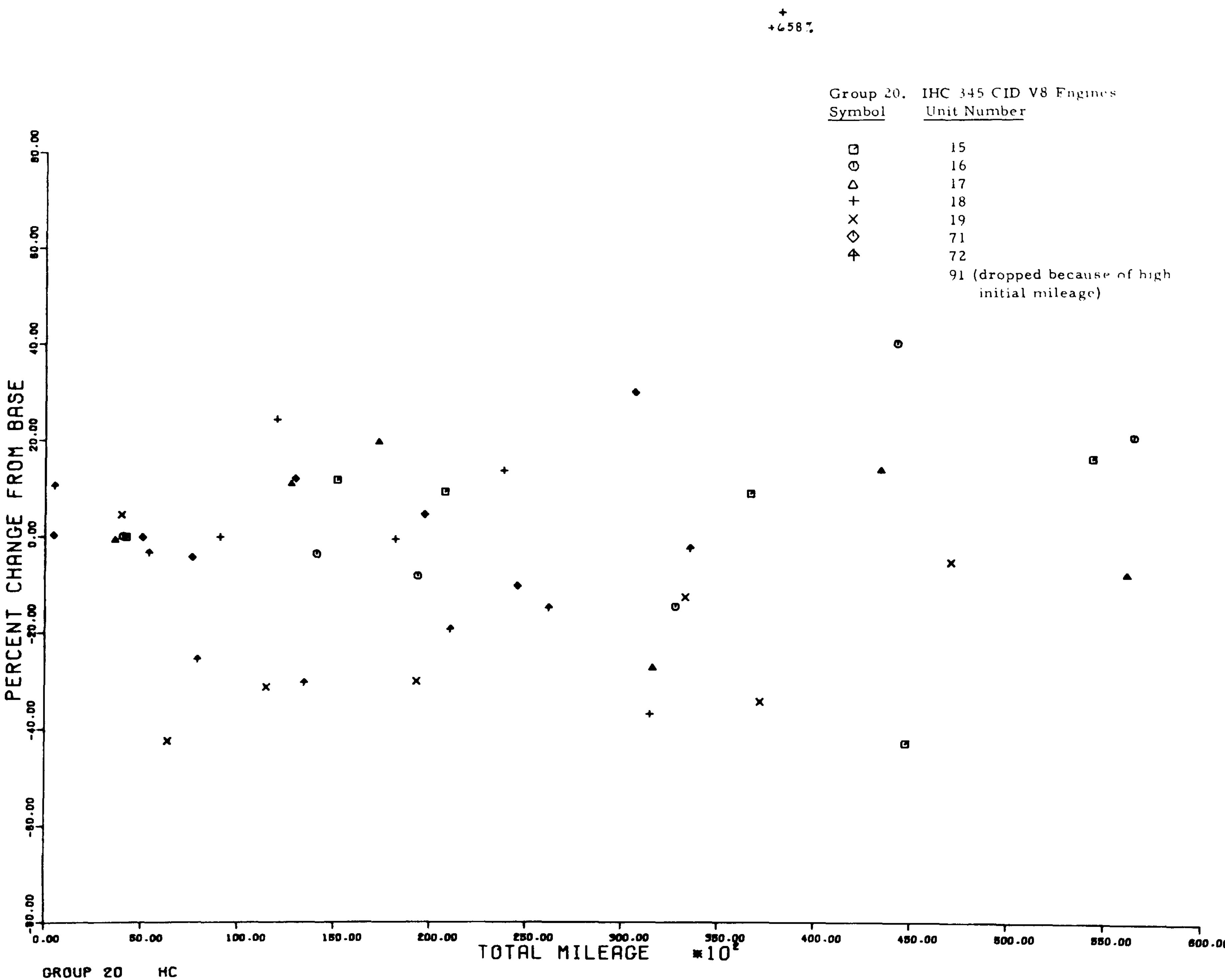

+129%
+94%
+93%
+87%
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
Group 19. IHC 304 V8 Engines
Symbol Unit Number Symbol Unit Number
26 51
38 55
46 56
47 57
48 58
49 59
50
GROUP 19 CO

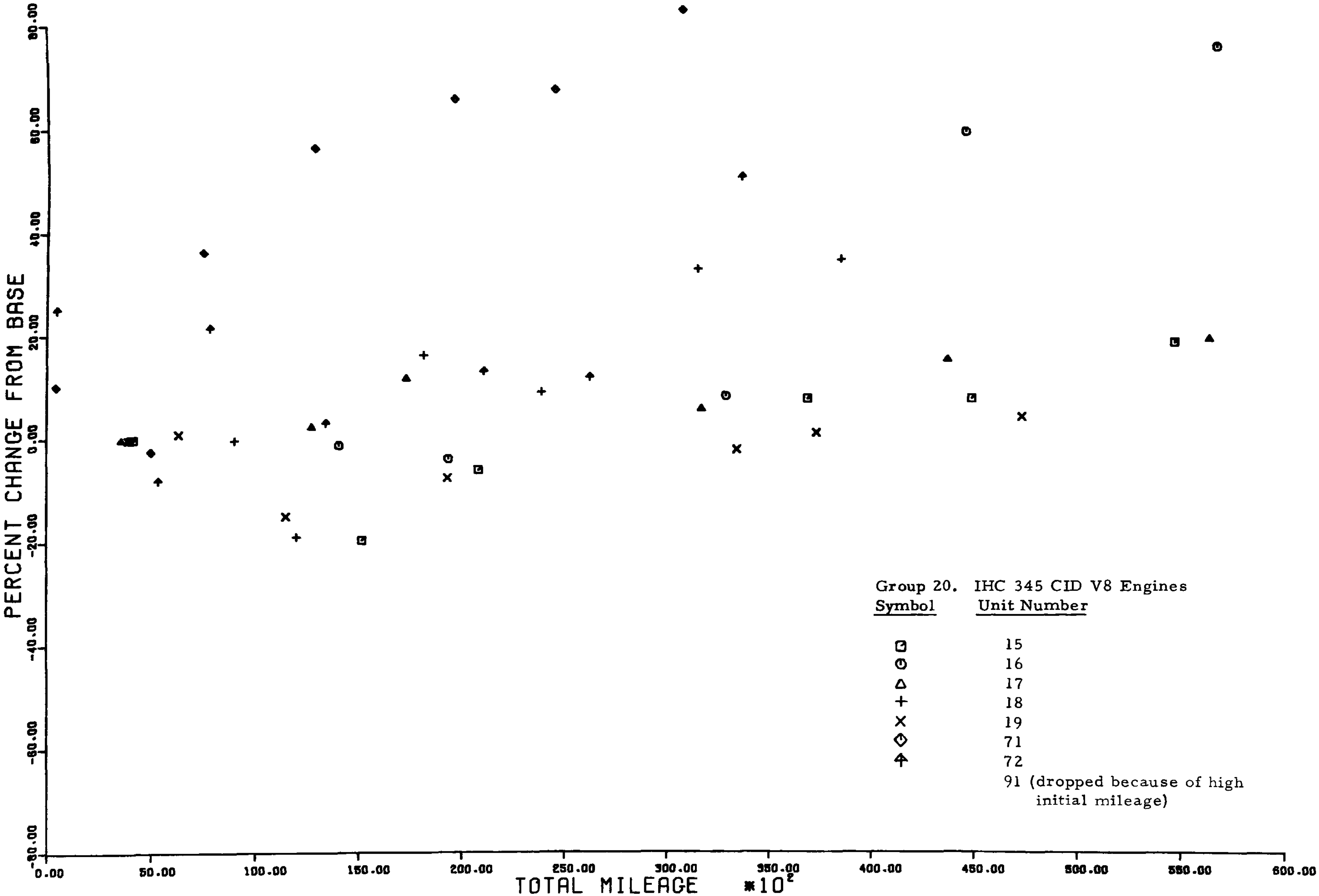



GROUP 19 NO (NOT CORRECTED)

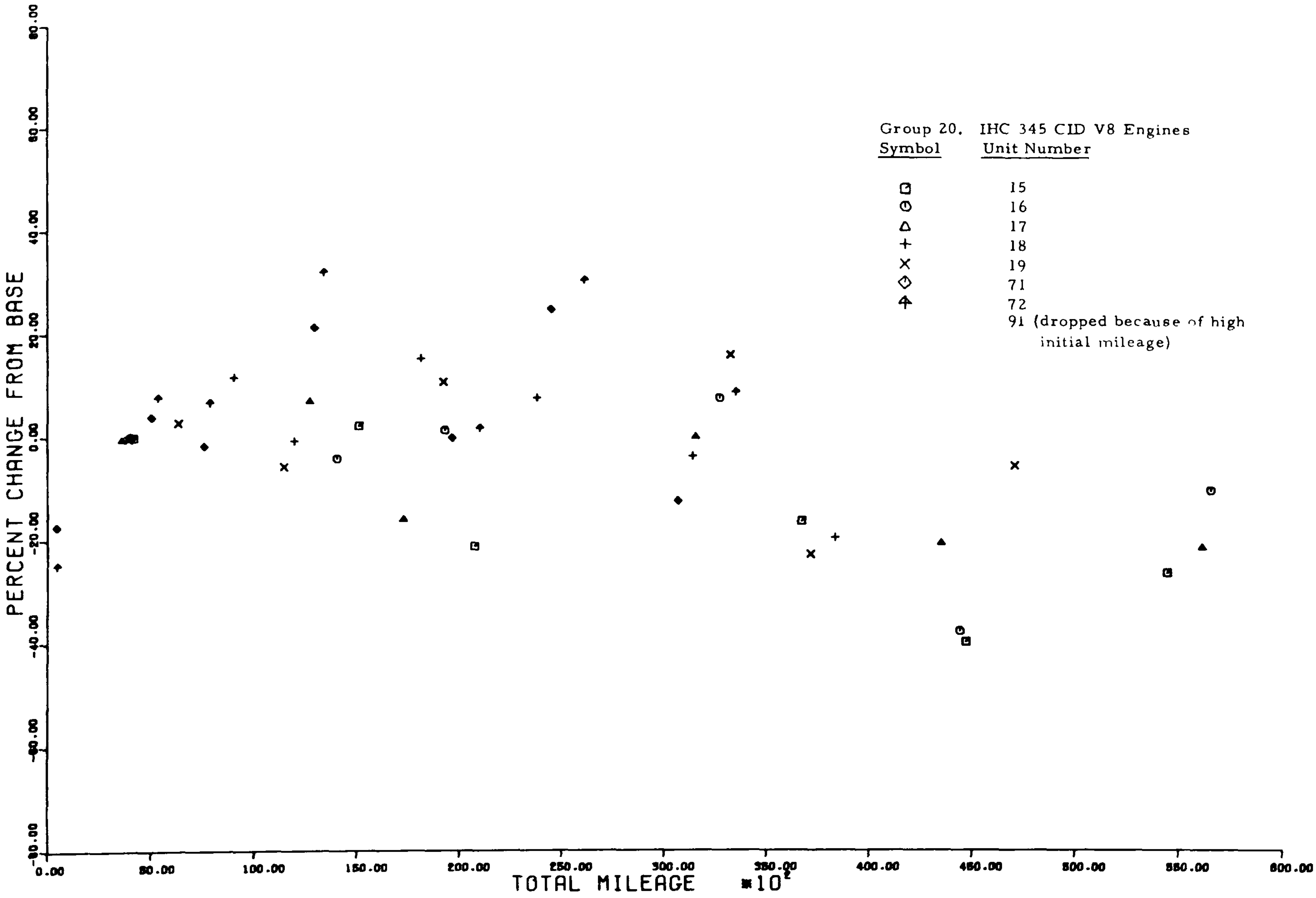



GROUP 19 NO CORRECTED

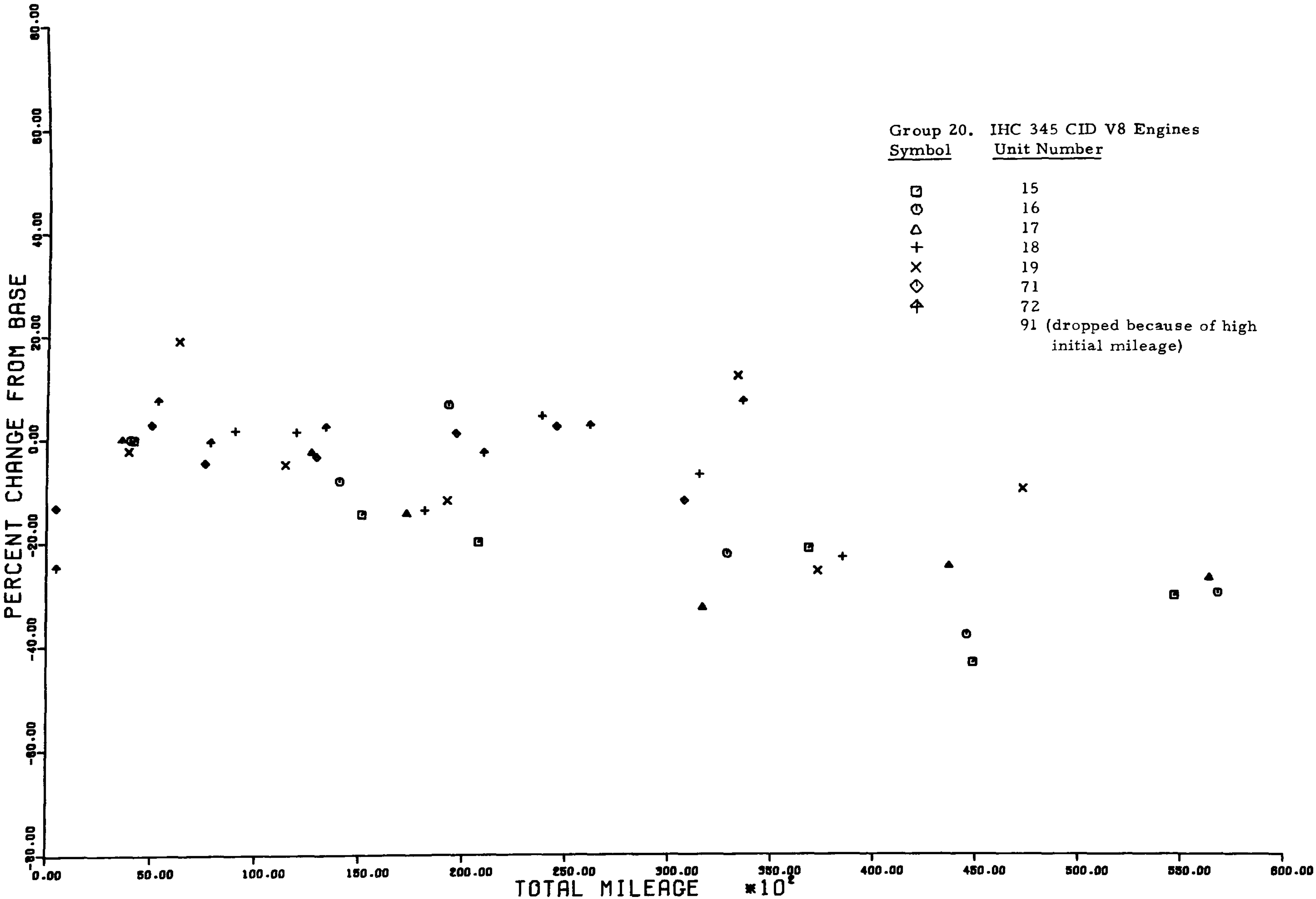

+658%
Group 20. IHC 345 CID V8 Engines
Symbol Unit Number
15
16
17
18
19
71
72
91 (dropped because of high initial mileage)
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
GROUP 20 HC


PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
Group 20. IHC 345 CID V8 Engines
Symbol Unit Number
15
16
17
18
19
71
72
91 (dropped because of high initial mileage)

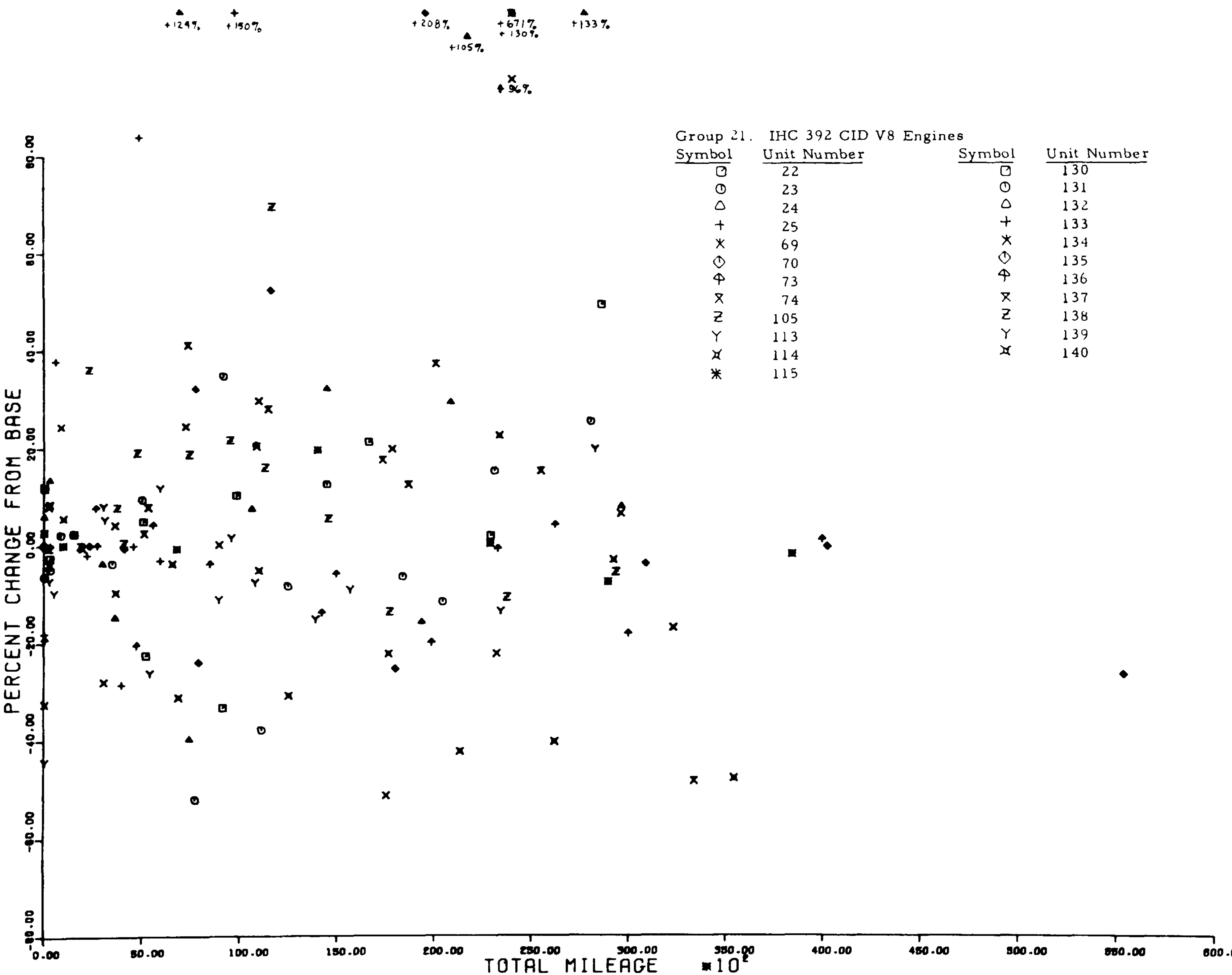
GROUP 20 CO




GROUP 20 NO (NOT CORRECTED)

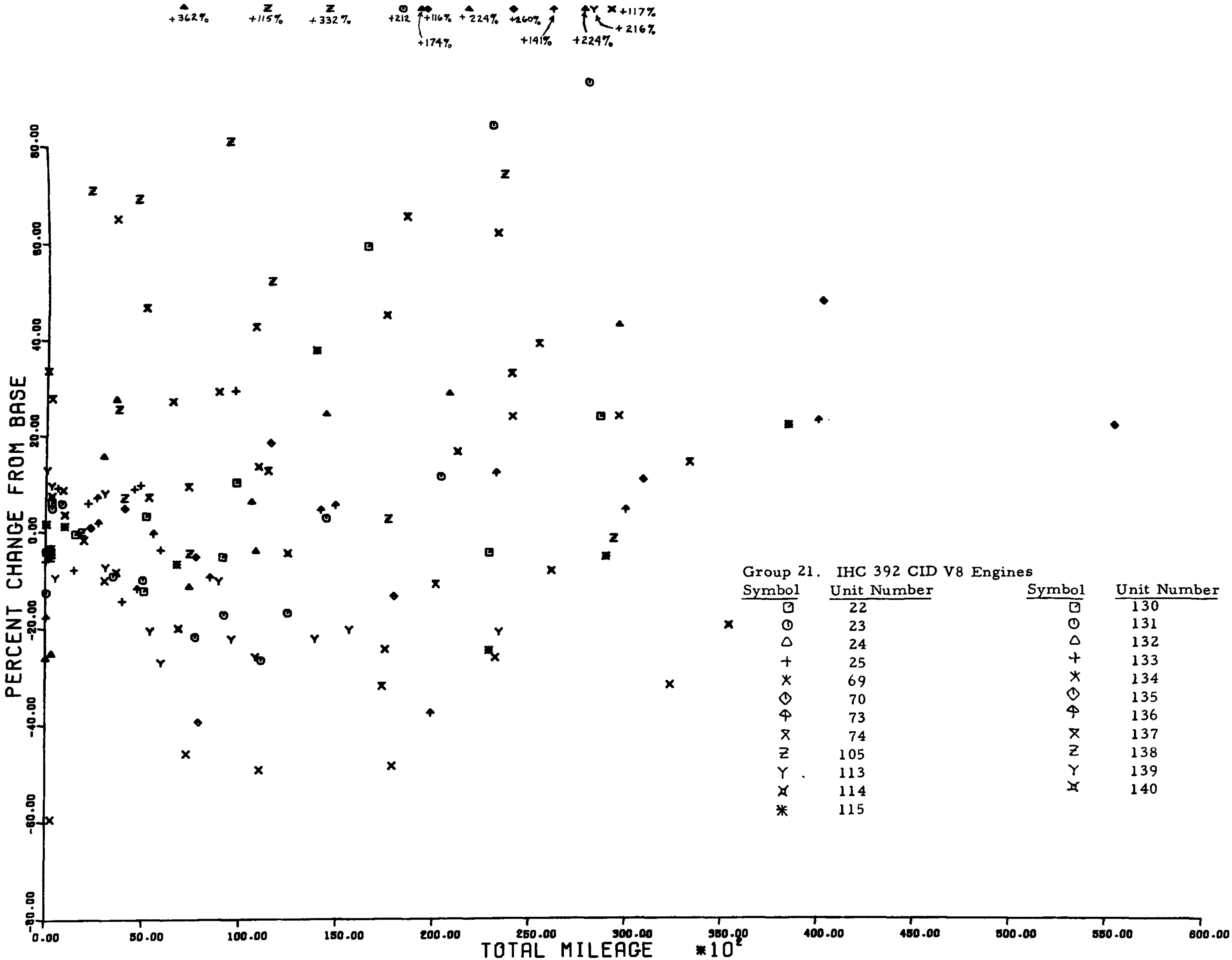



GROUP 20 NO CORRECTED



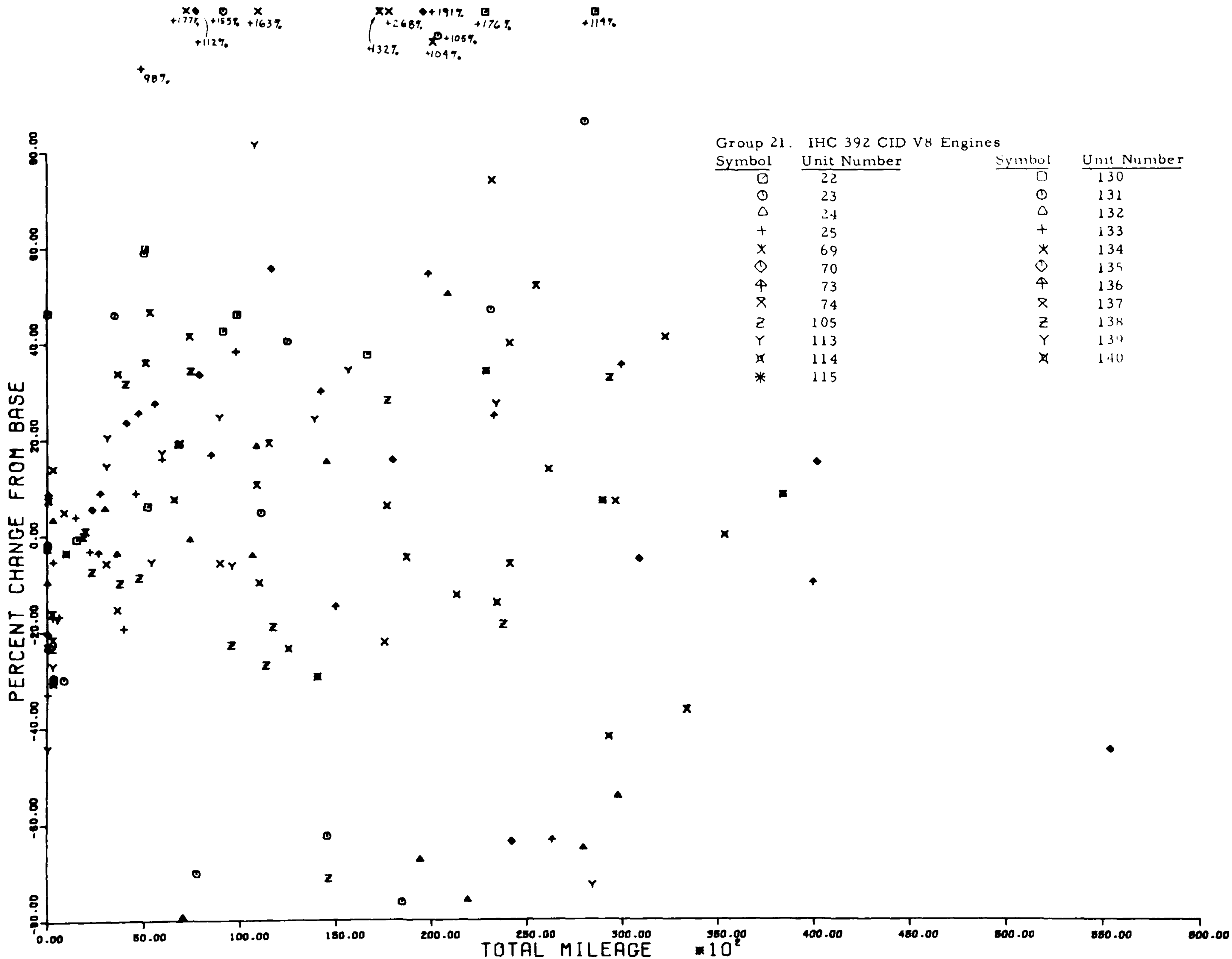
+124%
+150%
+208%
+671%
+130%
+133%
+105%
+96%
Group 21. IHC 392 CID V8 Engines
Symbol Unit Number
22
23
24
25
69
70
73
74
105
113
114
115
Symbol Unit Number
130
131
132
133
134
135
136
137
138
139
140
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE ×10²


GROUP 21 HC

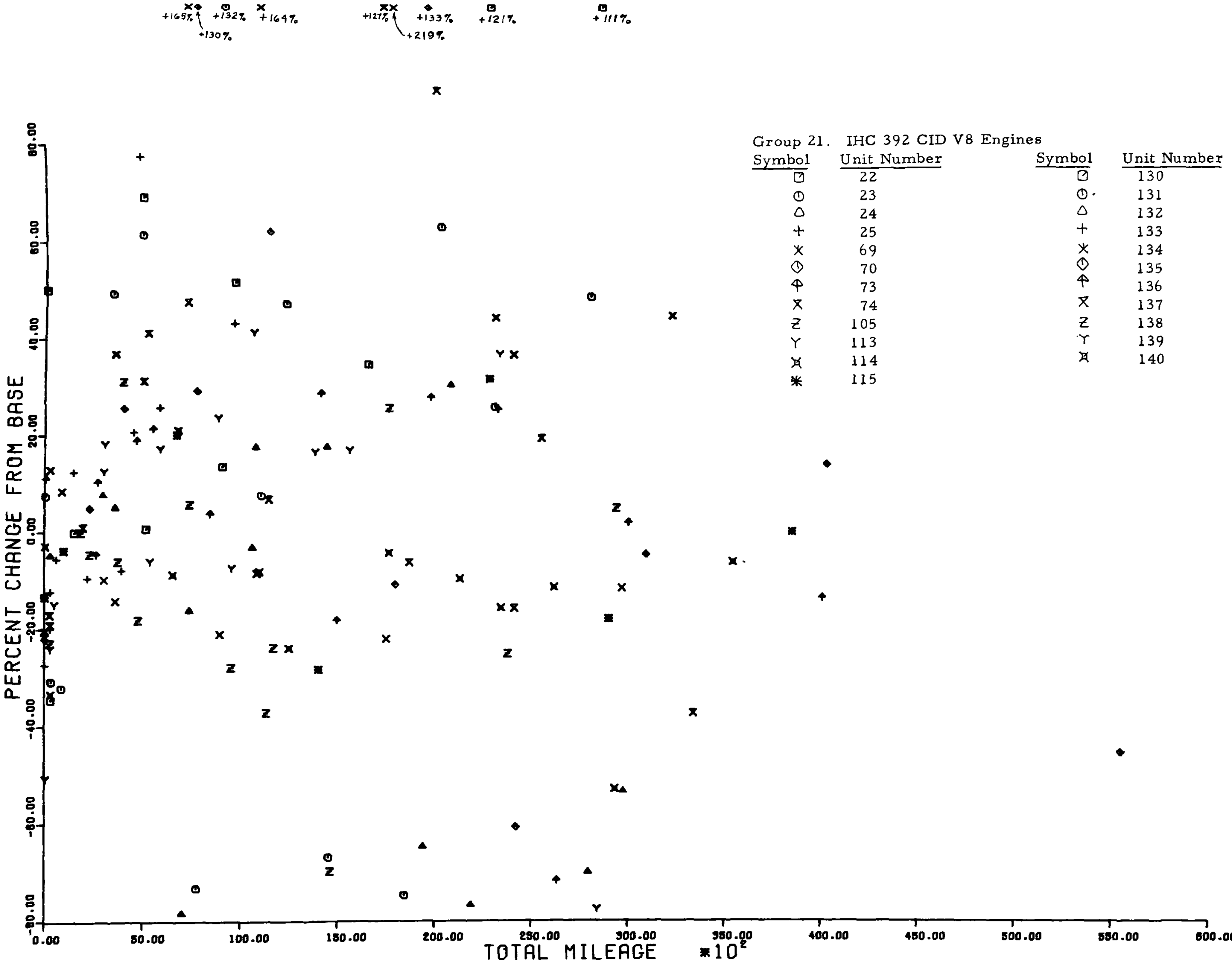


+362% +115% +332% +212 +116% +174% +224% +260% +141% +224% +117% +216%
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00 50.00 100.00 150.00 200.00 250.00 300.00 350.00 400.00 450.00 500.00 550.00 600.00
TOTAL MILEAGE *10²
Group 21. IHC 392 CID V8 Engines
Symbol Unit Number
22
23
24
25
69
70
73
74
105
113
114
115
Symbol Unit Number
130
131
132
133
134
135
136
137
138
139
140

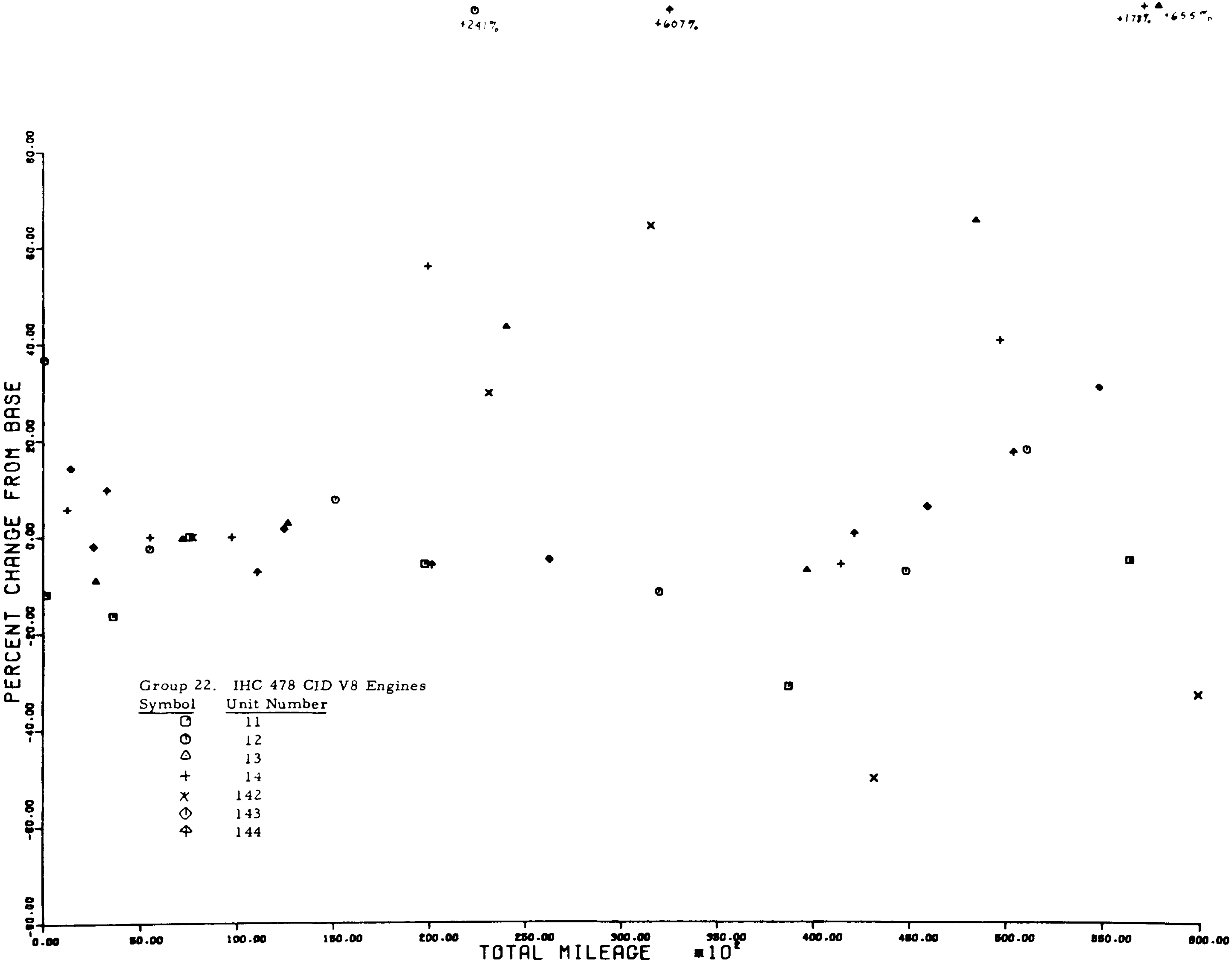

GROUP 21 CO



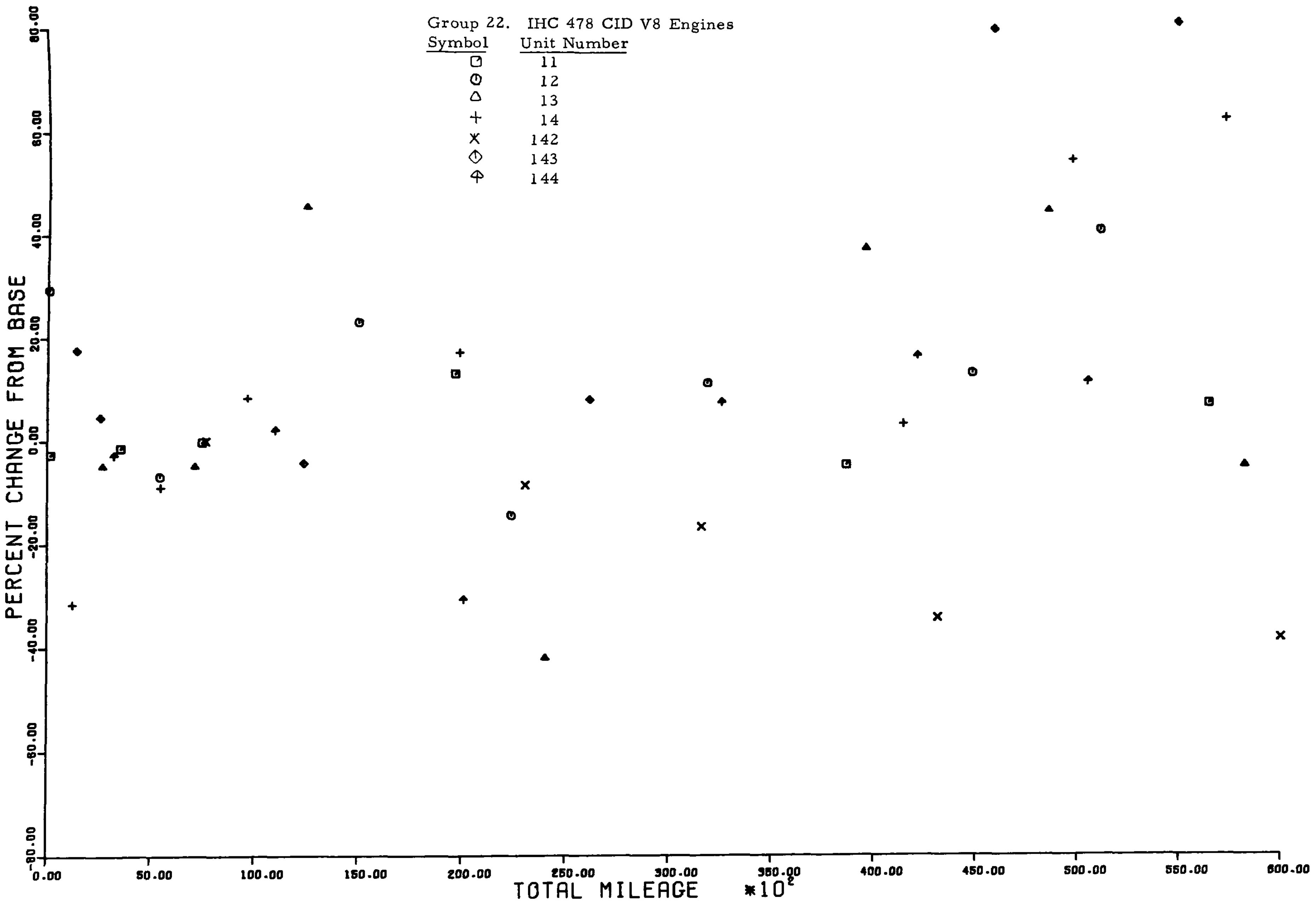

GROUP 21 NO (NOT CORRECTED)




GROUP 21 NO CORRECTED

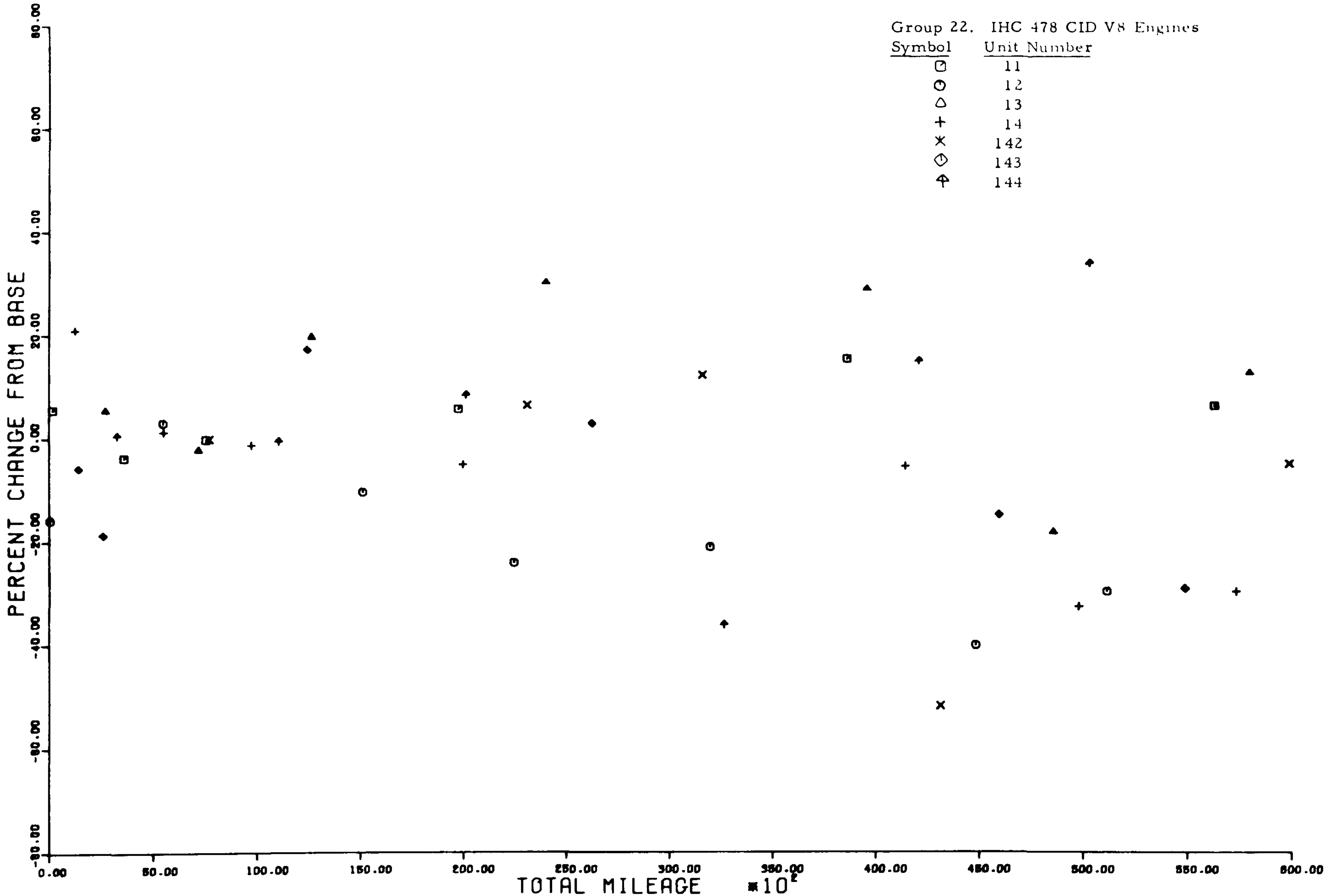

+241%
+607%
+178%
+655%
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
Group 22. IHC 478 CID V8 Engines
Symbol Unit Number
11
12
13
14
142
143
144

GROUP 22 HC

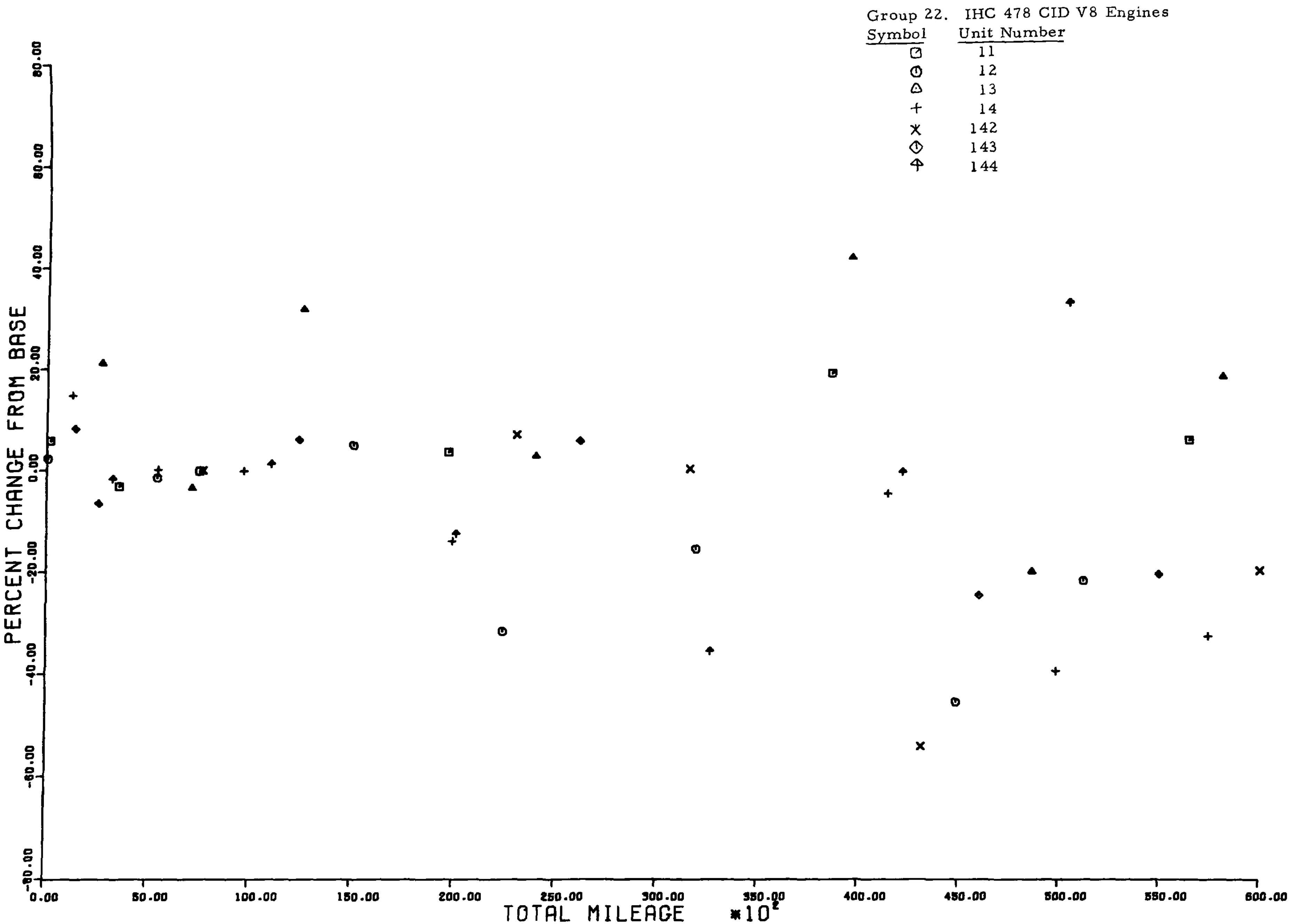


Group 22. IHC 478 CID V8 Engines
Symbol Unit Number
11
12
13
14
142
143
144
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²

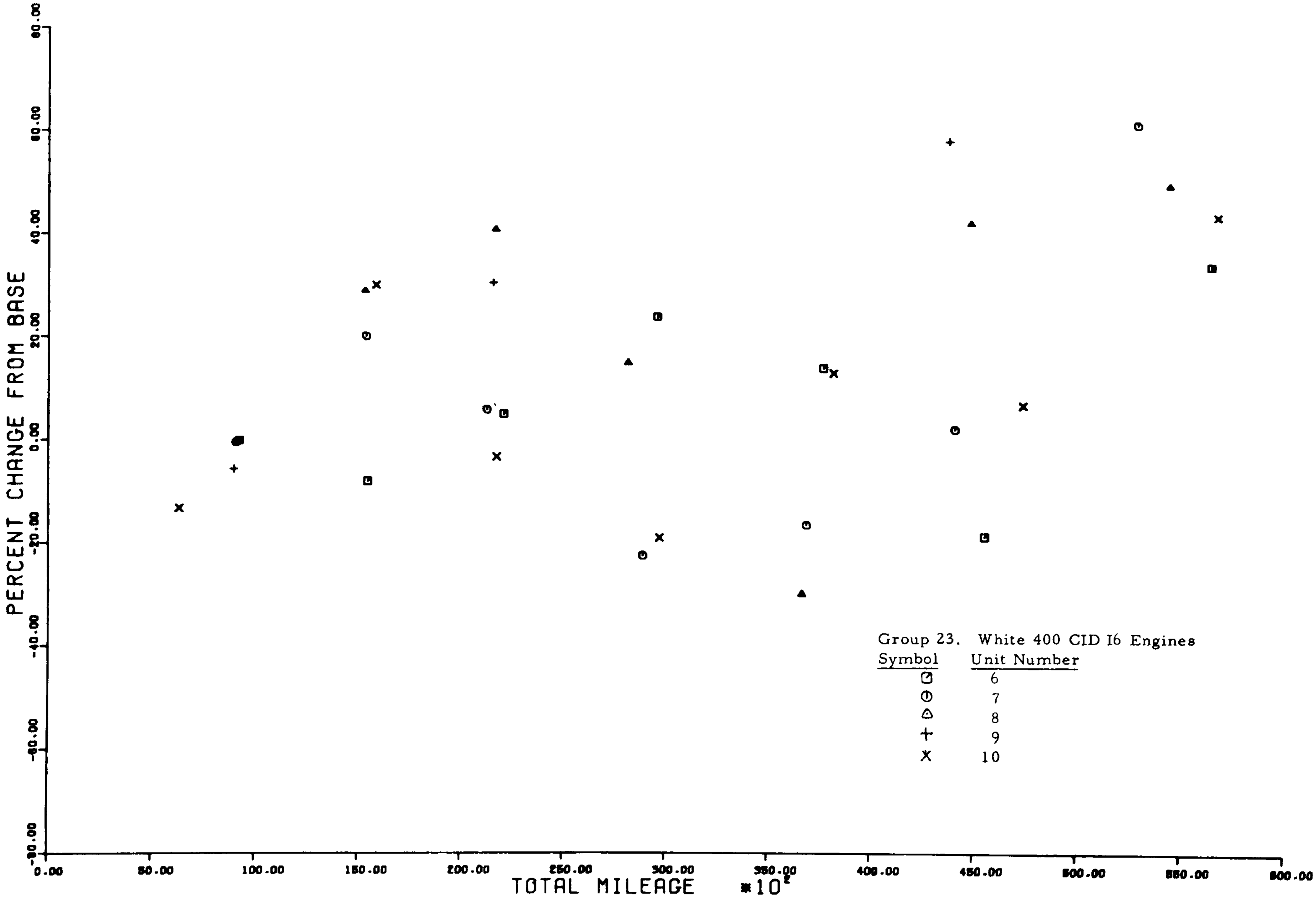

GROUP 22 CO




GROUP 22 NO (NOT CORRECTED)

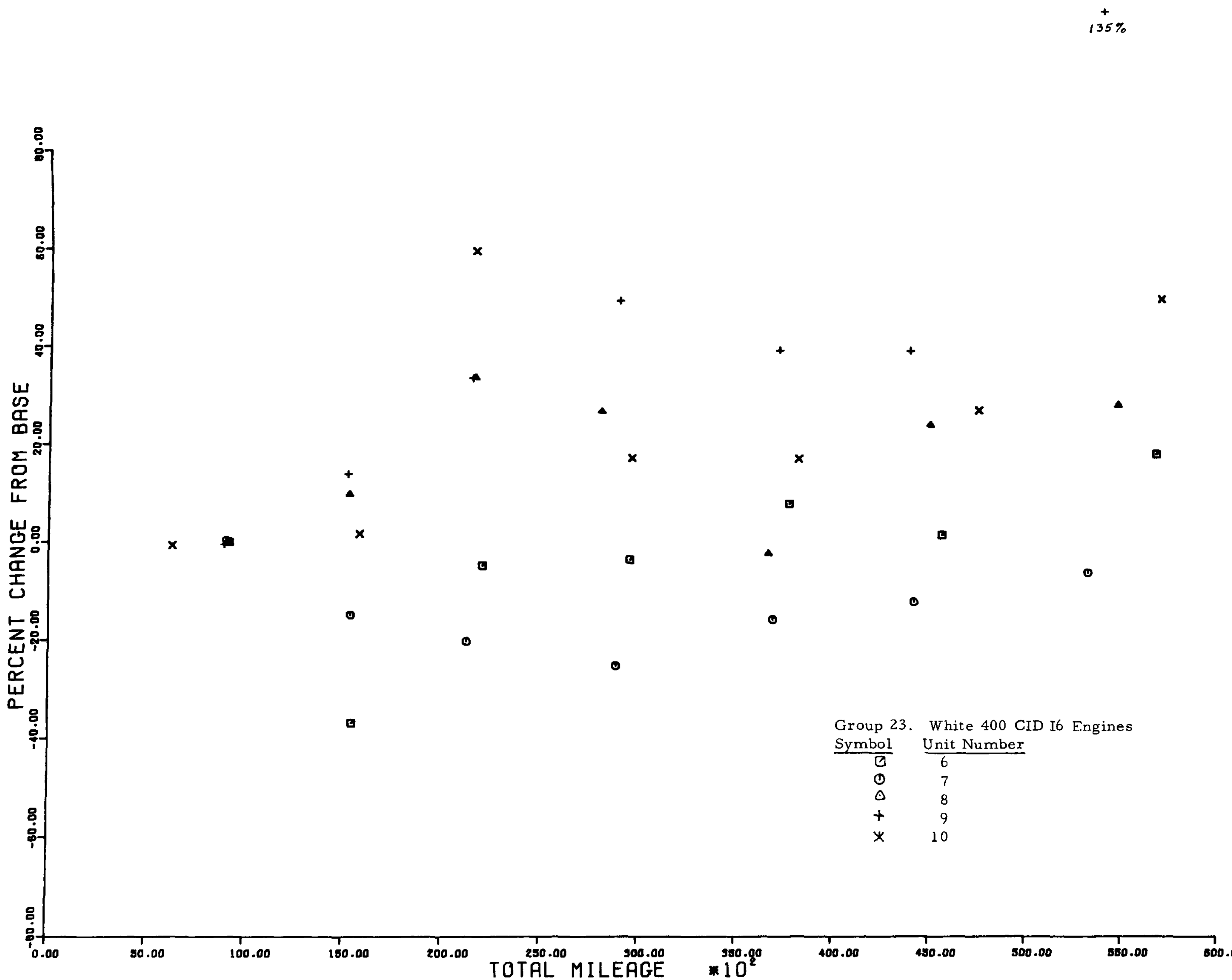



GROUP 22 NO CORRECTED



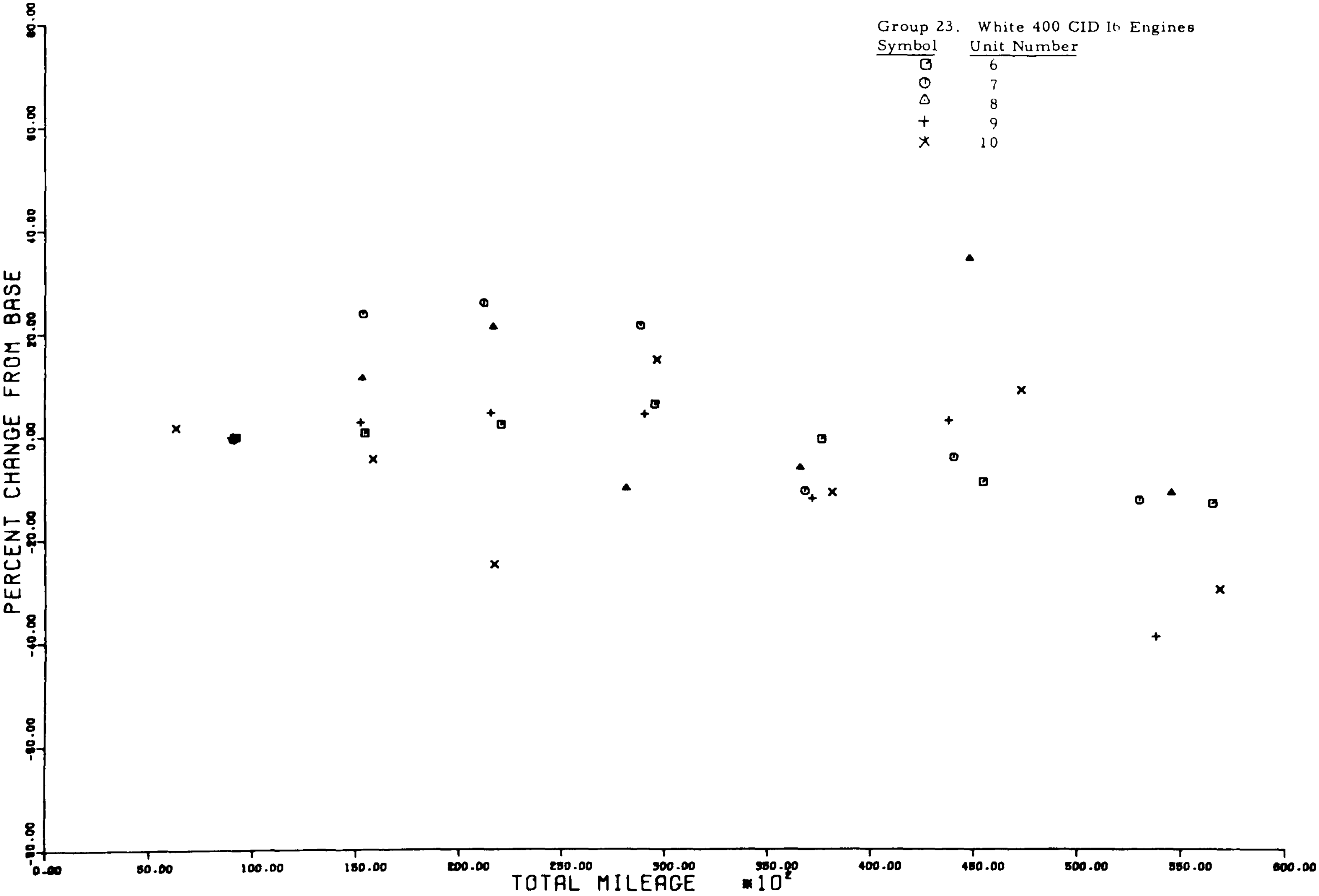
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
Group 23. White 400 CID I6 Engines
Symbol
Unit Number
6
7
8
9
10


GROUP 23 HC

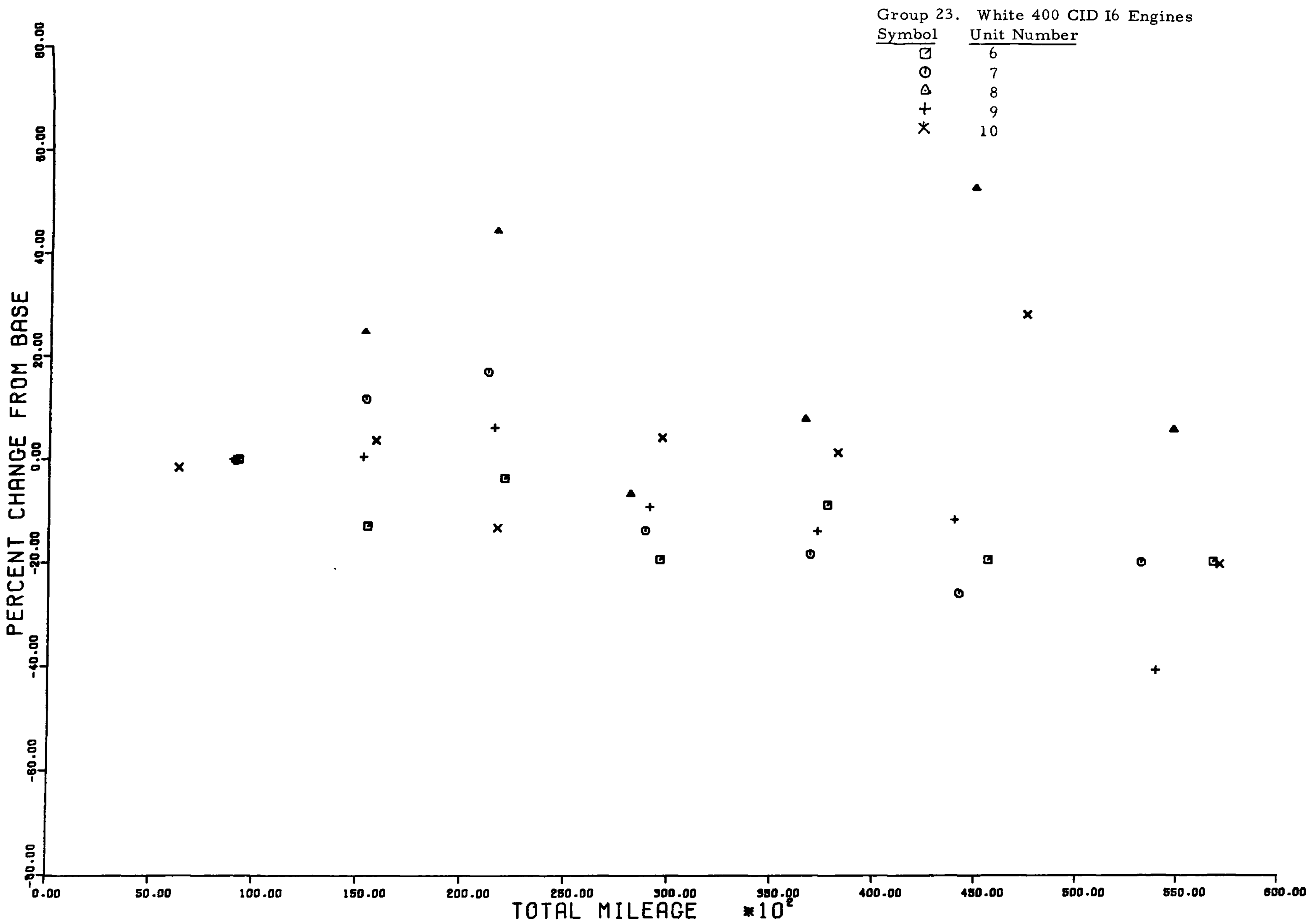


+ 135%
PERCENT CHANGE FROM BASE
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
550.00
600.00
TOTAL MILEAGE *10²
Group 23. White 400 CID I6 Engines
Symbol
Unit Number
6
7
8
9
10


GROUP 23 CO




GROUP 23 NO (NOT CORRECTED)




GROUP 23 NO CORRECTED

# TECHNICAL REPORT DATA

*(Please read Instructions on the reverse before completing)*

| | | |
|---|---|---|
| 1. REPORT NO. EPA-460/3-73-002-b | 2. | 3. RECIPIENT'S ACCESSION NO. |
| 4. TITLE AND SUBTITLE In-Use Heavy Duty Gasoline Truck Emissions Part II, Surveillance Study of Control Equipped Heavy-Duty Gasoline-Powered Vehicles | | 5. REPORT DATE June 1974 |
| | | 6. PERFORMING ORGANIZATION CODE |
| 7. AUTHOR(S) Melvin N. Ingalls, Karl J. Springer | | 8. PERFORMING ORGANIZATION REPORT NO. AR 948 |
| 9. PERFORMING ORGANIZATION NAME AND ADDRESS Southwest Research Institute Post Office Drawer 28510 8500 Culebra Road San Antonio, Texas 78284 | | 10. PROGRAM ELEMENT NO. |
| | | 11. CONTRACT/GRANT NO. EHS 70-113 |
| 12. SPONSORING AGENCY NAME AND ADDRESS U.S. Environmental Protection Agency Office of Air and Waste Management Mobile Source Pollution Control Ann Arbor, Michigan 48105 | | 13. TYPE OF REPORT AND PERIOD COVERED Final |
| | | 14. SPONSORING AGENCY CODE |

15. SUPPLEMENTARY NOTES

16. ABSTRACT

Exhaust emission tests were performed over a period of two and one half years on a fleet of 152, 1970 and 1971 gasoline-powered trucks of over 6000 pounds gross vehicle weight, which were being used in the San Antonio area. During this period, each truck received up to seven periodic tests for HC, CO and NO by means of a chassis-dynamometer version of the nine-mode engine-dynamometer Federal Test Procedure. Ten of these engines received additional tests in order to obtain correlative data between the chassis and engine-dynamometer procedures.

17. KEY WORDS AND DOCUMENT ANALYSIS

| a. DESCRIPTORS | b. IDENTIFIERS/OPEN ENDED TERMS | c. COSATI Field/Group |
|---|---|---|
| Air Pollution<br>Exhaust Emissions<br>Heavy Duty Vehicles<br>Surveillance<br>Hydrocarbons (HC)<br>Carbon Monoxide (CO)<br>Nitric Oxide (NO) | | 13B |

| | | |
|---|---|---|
| 18. DISTRIBUTION STATEMENT No limits | 19. SECURITY CLASS *(This Report)* Unclassified | 21. NO. OF PAGES 439 |
| | 20. SECURITY CLASS *(This page)* Unclassified | 22. PRICE |

EPA Form 2220-1 (9-73)

# INSTRUCTIONS

1. **REPORT NUMBER**
Insert the EPA report number as it appears on the cover of the publication.

2. **LEAVE BLANK**

3. **RECIPIENTS ACCESSION NUMBER**
Reserved for use by each report recipient.

4. **TITLE AND SUBTITLE**
Title should indicate clearly and briefly the subject coverage of the report, and be displayed prominently. Set subtitle, if used, in smaller type or otherwise subordinate it to main title. When a report is prepared in more than one volume, repeat the primary title, add volume number and include subtitle for the specific title.

5. **REPORT DATE**
Each report shall carry a date indicating at least month and year. Indicate the basis on which it was selected *(e.g., date of issue, date of approvcl, date of preparation, etc.)*.

6. **PERFORMING ORGANIZATION CODE**
Leave blank.

7. **AUTHOR(S)**
Give name(s) in conventional order *(John R. Doe, J. Robert Doe, etc.)*. List author's affiliation if it differs from the performing organization.

8. **PERFORMING ORGANIZATION REPORT NUMBER**
Insert if performing organization wishes to assign this number.

9. **PERFORMING ORGANIZATION NAME AND ADDRESS**
Give name, street, city, state, and ZIP code. List no more than two levels of an organizational hirearchy.

10. **PROGRAM ELEMENT NUMBER**
Use the program element number under which the report was prepared. Subordinate numbers may be included in parentheses.

11. **CONTRACT/GRANT NUMBER**
Insert contract or grant number under which report was prepared.

12. **SPONSORING AGENCY NAME AND ADDRESS**
Include ZIP code.

13. **TYPE OF REPORT AND PERIOD COVERED**
Indicate interim final, etc., and if applicable, dates covered.

14. **SPONSORING AGENCY CODE**
Leave blank.

15. **SUPPLEMENTARY NOTES**
Enter information not included elsewhere but useful, such as: Prepared in cooperation with, Translation of, Presented at conference of, To be published in, Supersedes, Supplements, etc.

16. **ABSTRACT**
Include a brief *(200 words or less)* factual summary of the most significant information contained in the report. If the report contains a significant bibliography or literature survey, mention it here.

17. **KEY WORDS AND DOCUMENT ANALYSIS**
(a) DESCRIPTORS - Select from the Thesaurus of Engineering and Scientific Terms the proper authorized terms that identify the major concept of the research and are sufficiently specific and precise to be used as index entries for cataloging.

(b) IDENTIFIERS AND OPEN-ENDED TERMS - Use identifiers for project names, code names, equipment designators, etc. Use open-ended terms written in descriptor form for those subjects for which no descriptor exists.

(c) COSATI FIELD GROUP - Field and group assignments are to be taken from the 1965 COSATI Subject Category List. Since the majority of documents are multidisciplinary in nature, the Primary Field/Group assignment(s) will be specific discipline, area of human endeavor, or type of physical object. The application(s) will be cross-referenced with secondary Field/Group assignments that will follow the primary posting(s).

18. **DISTRIBUTION STATEMENT**
Denote releasability to the public or limitation for reasons other than security for example "Release Unlimited." Cite any availability to the public, with address and price.

19. & 20. **SECURITY CLASSIFICATION**
DO NOT submit classified reports to the National Technical Information service.

21. **NUMBER OF PAGES**
Insert the total number of pages, including this one and unnumbered pages, but exclude distribution list, if any.

22. **PRICE**
Insert the price set by the National Technical Information Service or the Government Printing Office, if known.